

# NĀNĀKULI



*REGIONAL COMMUNITY DEVELOPMENT PLAN*  
DECEMBER 2006

DEPARTMENT OF HAWAIIAN HOME LANDS



# Contents

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Hawaiian Homes Commission

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Introduction	1
Public Officials and Political Boundaries	2 - 3
Community Leaders and Stakeholders	4
DHHL Partnering Benefits and Examples	5
History and Cultural Aspects of the Area	6
Hawaiian Home Lands in Nānākuli	7
Regional Map	8
Zoning and Regional Demographics	9
Major Land Owners	10
Development Characteristics and Trends	11
Roads and Transit - Infrastructure and Characteristics	12 - 13
Water - Infrastructure and Characteristics	14 - 15
Wastewater/Sewer - Infrastructure and Characteristics	16 - 17
Drainage - Infrastructure and Characteristics	18 - 19
Regional Services and Public Facilities Map and Characteristics	20 - 21
Development Projects Map and Characteristics	22 - 23
Priority Project: Wai'anae Second Access Road	24
Priority Project: OR & L Railroad Expansion	25
Priority Project: Nānākuli Public Library	26
Priority Project: Nānākuli Village Center	27
Project Tracking	28
Contact Information	29

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 develop lands in Nānākuli. Specifically, this report is intended to:

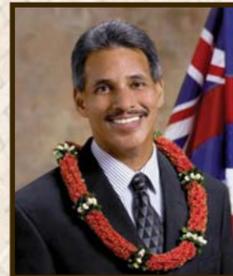
- Help identify opportunities for partnerships with DHHL in the development of its Nānākuli lands;
- Provide information essential to the planning of projects, services, and entrepreneurial ventures;
- Identify key issues, opportunities, and constraints affecting regional development and area improvements;
- 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 knows that 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.

## *Elected Officials*



**Linda Lingle**  
*Governor*



**Duke Aiona**  
*Lt. Governor*



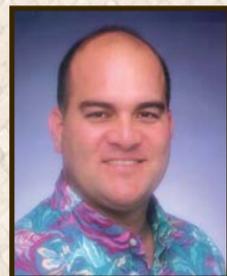
**Daniel K. Inouye**  
*U.S. Senator*



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



**Mazie Hirono**  
*U.S. Representative  
Congressional District 2*



**Micah Kane**  
*Hawaiian Homes Commission  
Chairman*



**Trish Morikawa**  
*Hawaiian Homes Commission  
O'ahu Commissioner*



**Francis K. Lum**  
*Hawaiian Homes Commission  
O'ahu Commissioner*



**Donald S. M. Chang**  
*Hawaiian Homes Commission  
O'ahu Commissioner*



**Haunani Apoliona**  
*OHA Chairperson*



**Mufi Hanneman**  
*Honolulu Mayor*



**Todd K. Apo**  
*City Council Member  
District 1*



**Colleen Hanabusa**  
*State Senatorial  
District 21*



**Karen L. Awana**  
*State House of Representatives  
District 44*



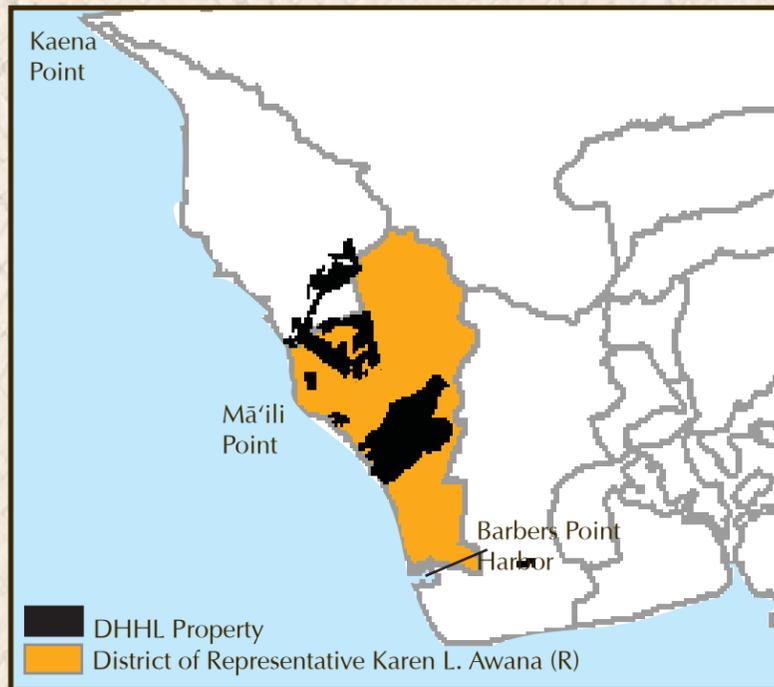
**Walter M. Heen**  
*OHA Trustee, O'ahu Chair*

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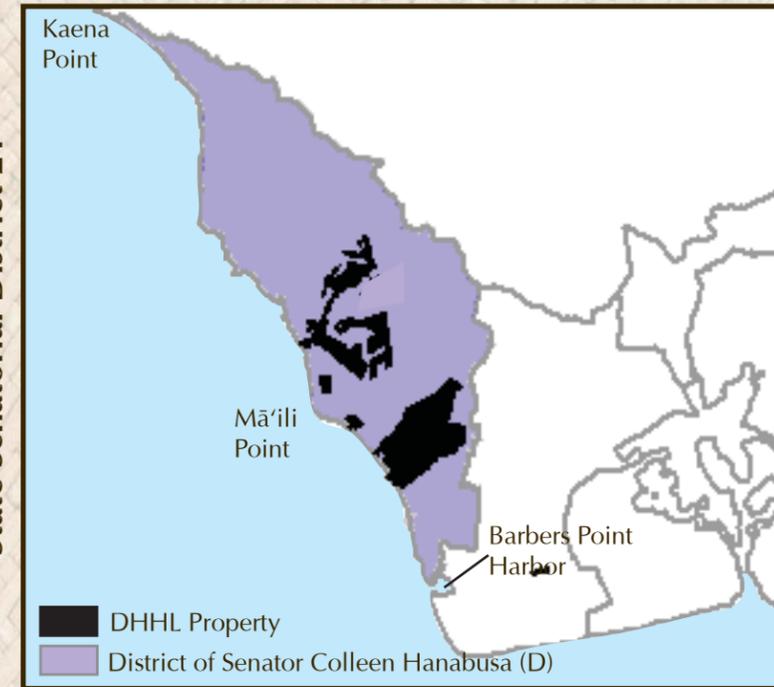


# Political Boundaries

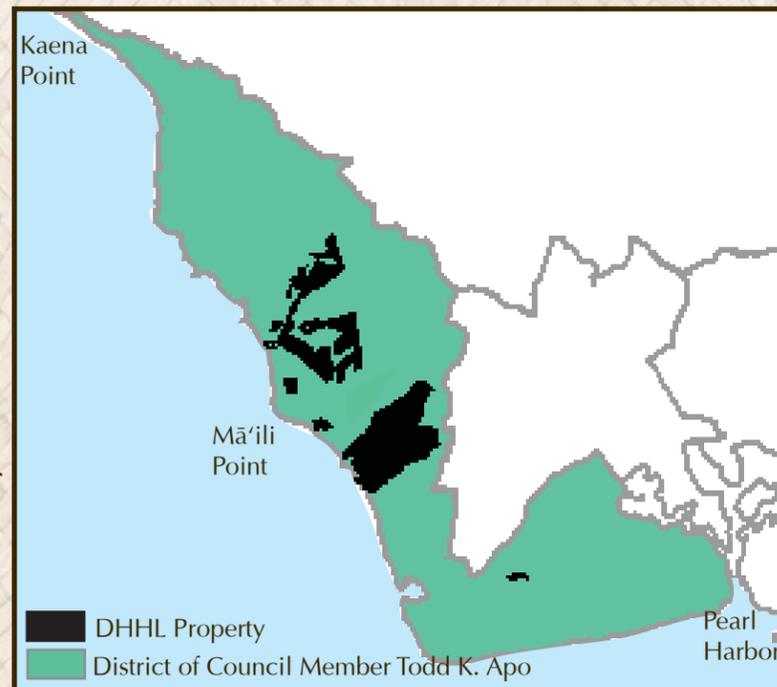
State House of Representatives District 44



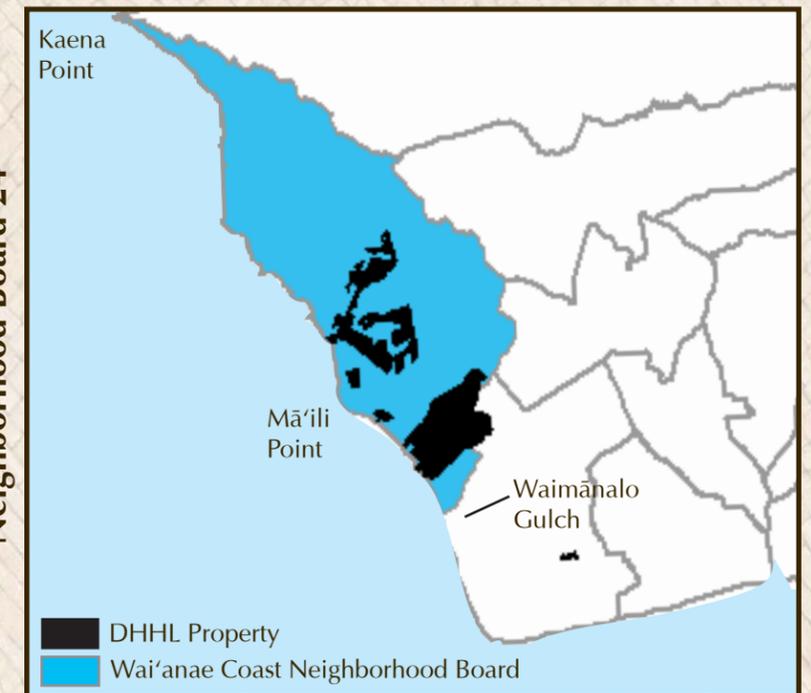
State Senatorial District 21



City Council District 1



Neighborhood Board 24



# Community Leaders and Stakeholders

Wai'anae Coast  
Neighborhood Board #24  
**Patty Teruya**  
Chair



Wai'anae Harbor  
**William Aila**  
Harbor Master



Nānākuli Hawaiian Homestead  
Community Association  
**Kamaki Kanahele**  
President



Princess Kahanu Estates  
Hawaiian Homes Association  
**Aulani Ahmad**  
President



Ka'ala Farm  
**Eric Enos**  
Program Director



Wai'anae Coast Community  
Alternative Development  
Corporation (WCCADC)  
**Puanani Burgess**  
Executive Director



Wai'anae Coast  
Comprehensive Health Center  
**Richard Bettini**  
CEO



Kamehameha Schools  
**Dee Jay A. Mailer**  
CEO



Wai'anae Coast Neighborhood Board  
Nānākuli Representative  
Nānākuli Representative  
Nānākuli Representative  
Mā'ili Representative  
Mā'ili Representative

Koa Mana (citizen group)

Mālama Mākua

Hawai'i Coalition of Christian Churches

Wai'anae Coast Culture and Arts, Director

Leeward Community College at Wai'anae, Coordinator

Nānākuli Schools Complex, Superintendent

Wai'anae and Nānākuli Boys & Girls Club, Director

MA'O Farm (youth training program), Managers

Mikilua Farm Bureau, President

Kokua 'Ohana, Program Supervisor

**James W. Kelii**  
**Neddie G. Waiamau-Nunuha**  
**Josiah L. Hooihuli**  
**Cynthia K. L. Rezentes**  
**Kaipo "Paul" K. Pomaikai**

**Glen Kila**

**Fred Dodge**

**Pastor Wade "Boo" Soares**

**Agnes Cope**

**William Akama, III**

**Keith Hayashi**

**Puamamo Wa'a**

**Gary and Kukui Maunakea-Forth**

**Leonard Oshiro**

**Amanda Masuyama**

Community Planners

Consuelo Foundation, CEO

The Schuler Division of D.R. Horton, Inc., President

Queen Lili'uokalani Trust, CEO

James Campbell Company LLC, CEO

Naval Magazine Pearl Harbor, Commanding Officer

**Dixie Padello**  
**Joyce Lopez**  
**Ho'oipo Decambra**  
**Billie Haug**

**Geri Marullo**

**Mike Jones**

**Robert Ozaki**

**Steve MacMillan**

**Captain Michael J. Donch, III**

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*The organizations listed below have also been recognized by the Nānākuli community as important leaders and stakeholders:*

Opelu Fishermen	Kaiser Permanente	HECO
Ke Ola Mamo	Nānāikapono Civic Club	PVT
Tamura's Supermarket	Foodland	Okimato

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# DHHL Partnering Benefits and Examples

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

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

DHHL brings to these partnerships:

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

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

## 1. Residential Partnerships

Through partnerships DHHL has reduced the cost of homes to low-income beneficiaries. DHHL has done this by sharing in the cost of infrastructure, helping to secure tax credits, and using self-help methods of construction. Partnerships in Kapolei resulted in 70 Rent-to-Own units constructed by Mark Development using low-income tax credits and 45 self-help homes constructed with Menehune Development and Honolulu Habitat for Humanity. A partnership with Kaua'i Habitat for Humanity resulted in 20 homes in Hanapēpē and a partnership with Kokua Housing resulted in 41 self-help homes at La'i'opua in Kona. 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.

## 2. Infrastructure Partnerships

DHHL has partnered with county governments and utility providers on infrastructure improvements that benefit the entire community. DHHL has participated in water-system development with the counties by providing funding, land easements, and access to federal and state programs. Examples include the extension of the Lower Kula Water System on Maui, the Waimea Irrigation System and the Maku'u Water System on Hawai'i, and the Waiawa-Waipahu Water System on O'ahu. DHHL has also provided numerous easements over its lands to electrical, water, telephone, and cable companies to service both homestead areas and the general public.

## 3. Public Facilities Partnerships

DHHL has participated in a number of partnerships involving public facilities and community resources. The most notable partnerships have brought together Hawaiian agencies and non-profit organizations into a multi-service complex where a broad range of programs are housed to serve the public. Such multi-service complexes have been built on Hawaiian Home Lands in partnership with Kamehameha Schools, Queen Lili'uokalani Children's Center, Alu Like, Papa Ola Lōkahi, the Office of Hawaiian Affairs, Hawaiian community organizations, and the counties. These multi-service complexes are housing preschools, offices, meeting facilities, health clinics, and activity centers. For example, the Paukukalo homestead on Maui is served by a County park on DHHL land next to a community hall, the DHHL district office, the Hawaiian Community Assets' homeownership counseling center, and a Kamehameha preschool.

Through a series of management partnerships with DLNR and The Nature Conservancy, unique ecosystems and historic sites are being protected. Examples include the Hakalau Forest Reserve, the 'Āina Hou Management Area, the Pala'au and Mo'omomi preserves, the Kalaupapa peninsula, and the Kamā'oa-Pu'u'eo National Historic District where koa forests, endangered plants and animals, and native species are being protected for future generations. Beachfront recreational values are protected through management agreements with the City and County of Honolulu for Makapu'u, Kaiona, Kaupō, Waimānalo, and Nānākuli beach parks.



Self-Help Housing in Kapolei



Community Center in Waimānalo

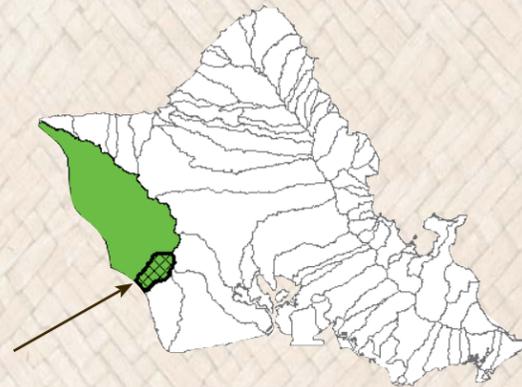


Ka Waihona o ka Na'auao Charter School,  
Located on the Former Nānāikapono  
Elementary School Site in Nānākuli

# History and Cultural Aspects of the Area

## Nānākuli

The name Nānākuli means “look at knee.” The area known as Nānākuli is said to be named in honor of the tattooed knee of Ka’ōpūlupulu, a priest whose chief, Kahahana, turned a deaf ear to his advice, and, when asked about his knee, told of his relationship with the chief, thus rebuking him. Nānākuli is the southernmost ahupua’a along the Wai’anae Coast, located within the Wai’anae District, as shown here.



Nānākuli Ahupua'a within Wai'anae District

## Pre-Contact

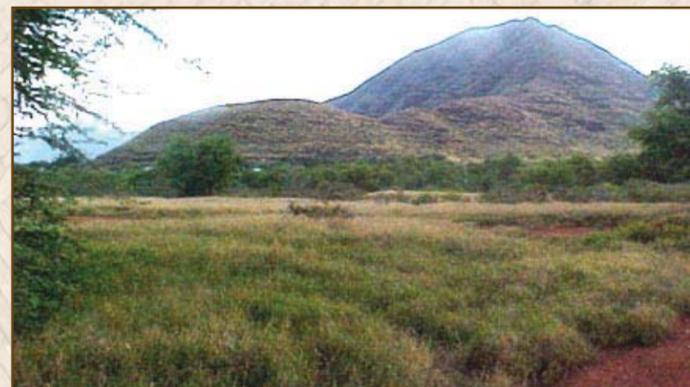
The entire Wai’anae District shares a common cultural history based on strong ties to the land, as evidenced by centuries of wet and dry land agriculture and productive fisheries. Due to its location on the dry, leeward side of the island, the ancient Hawaiians who lived there were forced to adapt to the area’s frequent drought conditions.

The Nānākuli ahupua’a has perpetually been among the most arid of the leeward valleys. In ancient times, this lack of water resulted in the area being sparsely inhabited. Its maximum pre-contact population is estimated to have been approximately 200 to 300 residents. Archaeological records indicate people lived

in the upper valley, where 26 house sites have been identified, along with evidence of extensive agricultural fields for sweet potato and other dry land crops. The coastal area was reported to have been a rich fishing ground, where the other segment of the population most likely resided.

A significant number of *wahi pana* (sacred places) remain throughout the Wai’anae Coast. In addition, the people who lived here were very familiar with the natural features and phenomena, and named most of them.

One such example is the mountain located on the northwest side of Nānākuli Valley called Pu’u Heleakalā, which means the Hill that is the House of the Sun. It received this name from a mo’olelo, or historic legend, that recounted how, as a child, the demi-god Māui had gone to the top of this particular mountain to do battle with the sun, in order to slow it down and make the days longer.



Pu’u Heleakalā

Source: [www.waianae.k12.hi.us](http://www.waianae.k12.hi.us)

## 1800s to mid-1900s

The arrival of Captain Cook and Western influence brought drastic changes to all of Hawai’i, and the Wai’anae District was no exception. The population declined sharply throughout the 1800s, to less than 800 people by the end of the century, with Nānākuli being home to just over 30. During this time, the economy was transformed from traditional subsistence agriculture to industrial land uses. The sandalwood trade lasted from about 1811 to 1829. Cattle ranching began in the mid-1800s, and by 1870, had become the area’s leading industry. Numerous sugar plantations sprang up between 1878 and 1947, along with a railroad for hauling harvested cane to the mill, and workers to and from the fields.

The Hawaiian Homestead Act, passed in 1920, designated over 200,000 acres of land for native Hawaiians throughout the state. The highest concentration of Hawaiian Homelands on O’ahu were the 4,500+ acres set aside in Nānākuli, Lualualei, and Wai’anae. In 1929, the U.S. government filed suit for condemnation of 1,356 acres of DHHL land in Lualualei to be used as an ammunition depot to supply ships at the Pearl Harbor Naval Base. The depot went into service in 1933, and remains active today, as the Naval Magazine Pearl Harbor. It is located adjacent to the Naval Radio Transmitter Facility Lualualei, which transmits state of the art, high and low frequency radio signals that are used for the navigation of Navy vessels throughout the Pacific. In total, 34% of the land in the Wai’anae District is used by the U.S. Military. Despite this substantial military presence, DHHL maintains a significant presence as well, with approximately 8,000 people living in Hawaiian Homesteads in the Wai’anae District, or about 20 percent of the total district population (U.S. Census, 2000).



View of Mā’ili and Nānākuli Valleys  
Source: [www.extremekayaker.com](http://www.extremekayaker.com)

## Modern Times

The City and County’s Wai’anae Sustainable Communities Plan (July 2000) was created through an extensive community participation process. The Plan expresses the community’s strong desire to preserve the rural landscape and the country lifestyle of the Wai’anae District. It also provides policies and guidelines that strengthen the region’s ability to sustain its unique character, rural lifestyle, and economic livelihood.

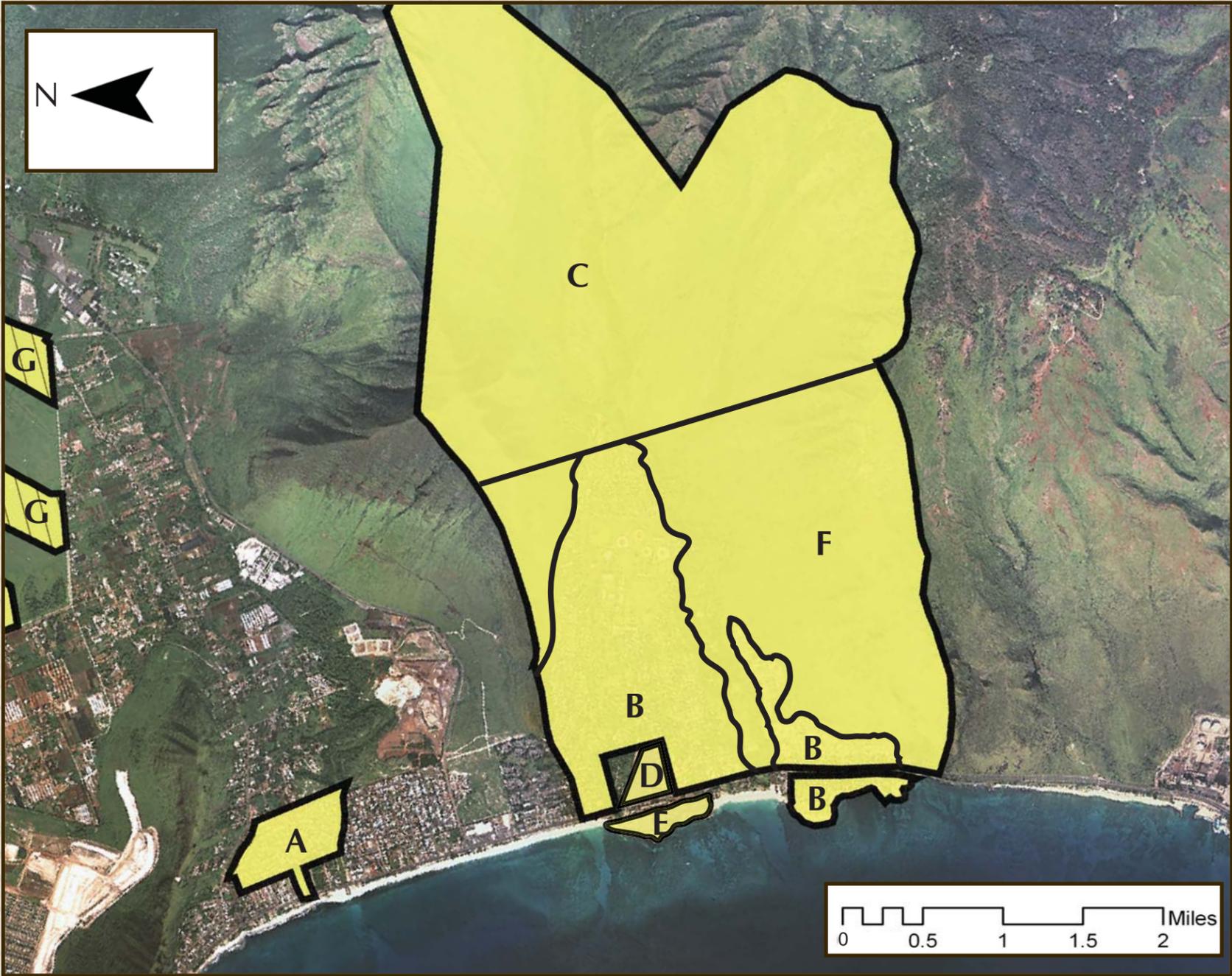
In addition, residents are working on community-based initiatives that aim to increase their economic opportunities, while protecting and revitalizing their culture. One such area of emphasis is sustainable agriculture, which many of the area’s leaders view as critical to preserving the agricultural heritage that is a central part of Wai’anae’s character.

Sources: McGrath, et al., 1973 and Cordy, 2002



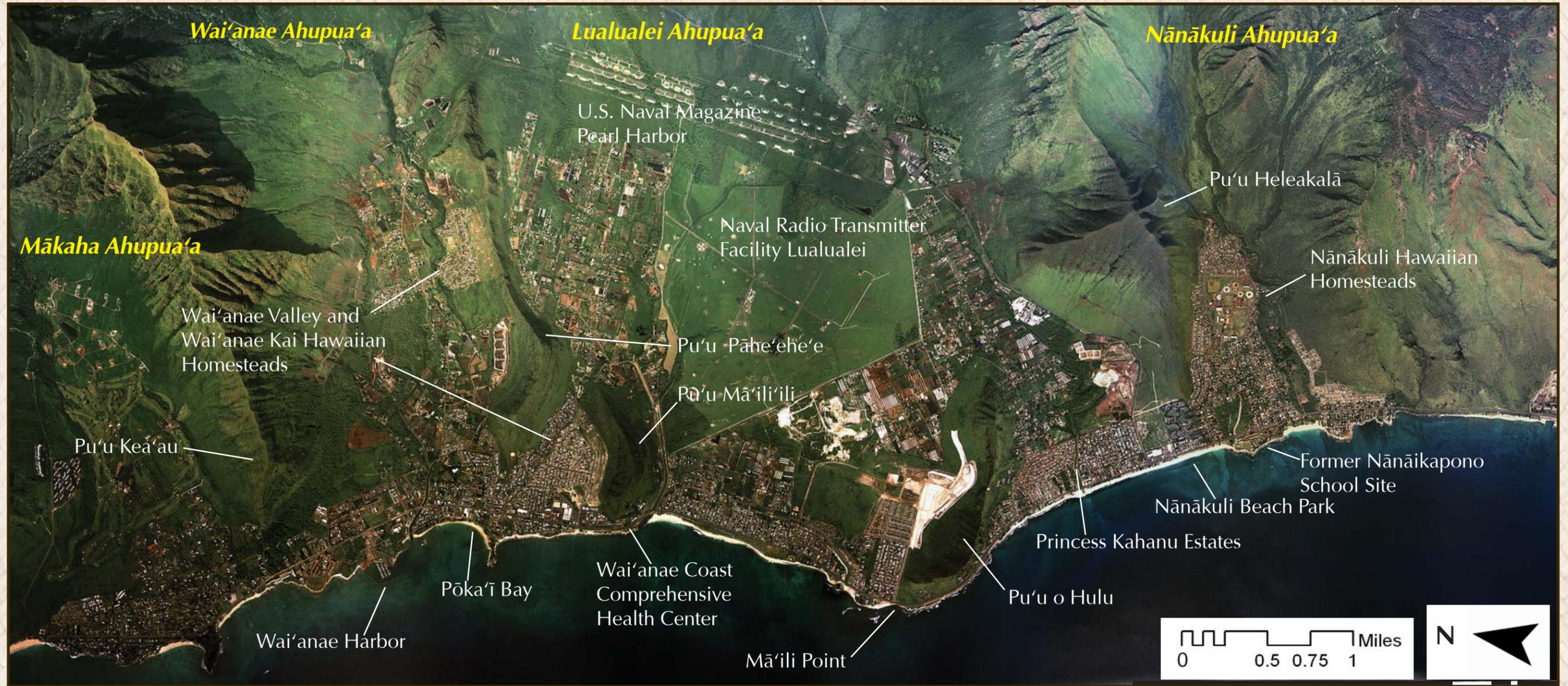
# Nānākuli Hawaiian Home Lands

## DHHL PARCELS



- A. Princess Kahanu Estates**
    - 270 single-family residences on 52 acres; approximate population of 1,175
  - B. Nānākuli Hawaiian Homesteads**
    - 1,040 single-family residences on 260 acres; approximate population of 5,100
  - C. Nānākuli Upper Valley**
    - 1,126 acres, currently leased and used by Lyman Ranch
    - TMK 8-9-08:03
  - D. Future site of Nānākuli Village Center**
    - 13.65 acres owned by DHHL, located east (Honolulu side) of drainage ditch; western side of ditch owned by DOE, site of the new Nānākuli IV School
    - Ground breaking for Nānākuli Village Center took place in September 2006
    - TMKs 8-9-02:01 and 8-9-02:76
  - E. Former Nānāikapono School Site**
    - TMK 8-9-01:04
    - 17 acres currently leased to 9 different vendors:
      - Honolulu Community Action Program Inc. (HCAP)
      - Wai'anae Coast Early Childhood Services Inc.
      - Ka Waihona O Ka Na'auao Charter School
      - Kamehameha Schools
      - INPEACE
      - His Highest Praise Westside Church
      - The Pacific American Foundation
      - 'Aha Punana Leo Properties Manager
      - Caretaker: Charlie Sakurai
  - F. Nānākuli Ranch**
    - 448 acres currently leased and used by the Rapoza family
    - TMK 8-9-07:02
  - G. Land used by U.S. Navy**
    - Described in detail in the DHHL Wai'anae and Lualualei Regional Community Development Plan (not counted in total below)
- TOTAL:** • 1,310 single-family residences  
 • 1,916.65 acres  
 • Approximate population of 6,275

# Regional Map



← Ka'ena Point

# Zoning Map and Regional Demographics

## Zoning Map



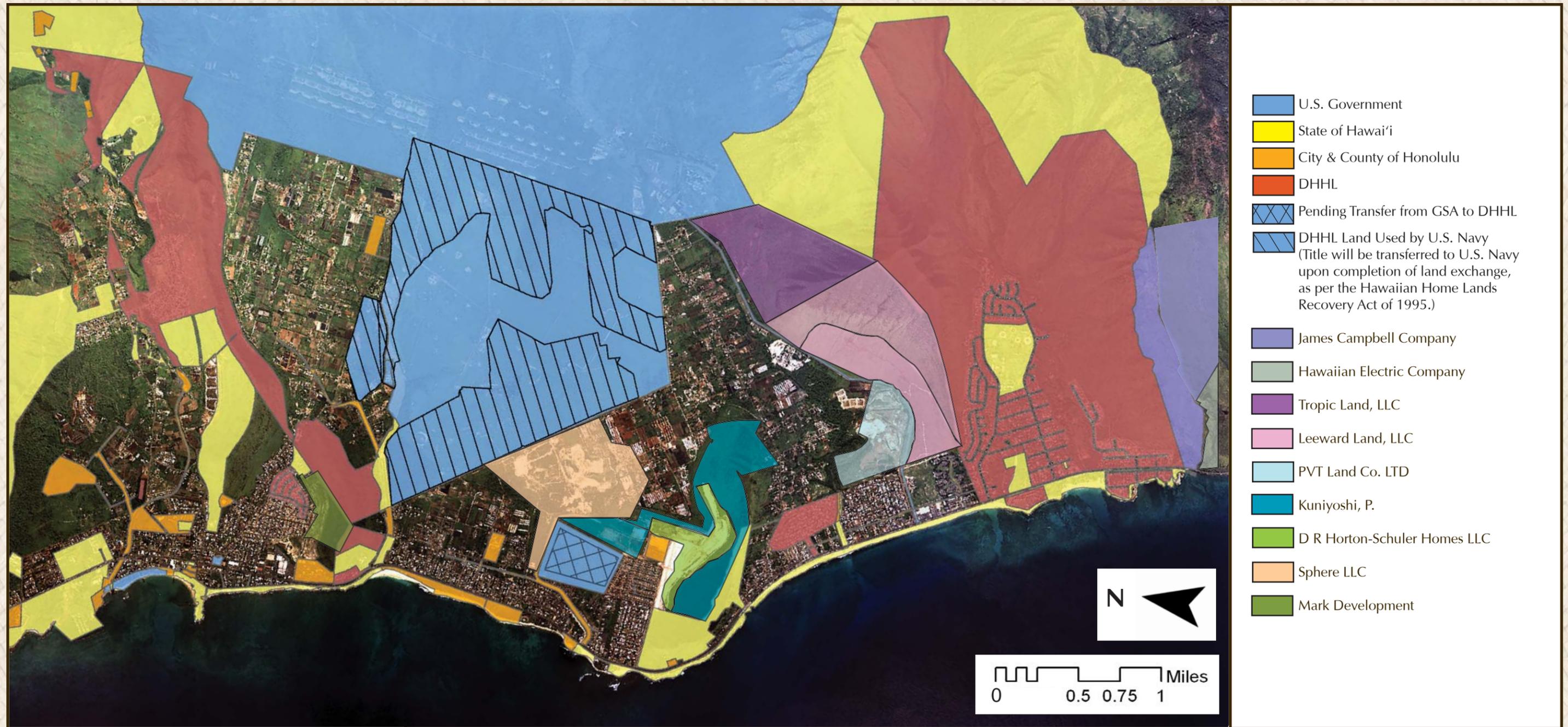
	Nānākuli*	O'ahu	Hawai'i	U.S.
<b>General Characteristics</b>				
Total population	10,814	876,156	1,211,537	281,421,906
Median age	27.2	35.7	36.2	35.3
<b>Social Characteristics</b>				
High school graduate or higher	75.5%	84.8%	84.6%	80.4%
Bachelors degree or higher	6.6%	27.9%	26.2%	24.4%
<b>Economic Characteristics</b>				
Median household income	\$45,352	\$51,914	\$49,820	\$41,994
Per capita income	\$11,690	\$21,998	\$21,525	\$21,587
Families below poverty level	19.2%	7.0%	7.6%	9.2%
<b>Housing Characteristics</b>				
Total housing units	2,504	315,988	460,542	115,904,641
Average household size	4.65	2.95	2.92	2.59
Owner-occupied housing units	67.3%	54.6%	56.5%	66.2%
Renter-occupied housing units	32.7%	45.4%	43.5%	33.8%
Median value of single-family owner-occupied homes	\$148,600	\$309,000	\$272,700	\$119,600
<b>DHHL Housing Characteristics</b>				
DHHL units	1,310 (52.3%)	2,897 (0.9%)	5,875** (1.3%)	
Total population in DHHL homes	6,273 (58%)	14,556 (1.7%)		

Sources: U.S. Census Bureau, 2000 and Profiles of Homestead Communities within the Hawaiian Home Lands Based on Census 2000 Data;

\*Data for "Nānākuli" is based on the Nānākuli CDP (Census Designated Place), according to the U.S. Census.

\*\*DHHL 2003 Annual Report, based on total number of residential leases.

# Major Land Owners

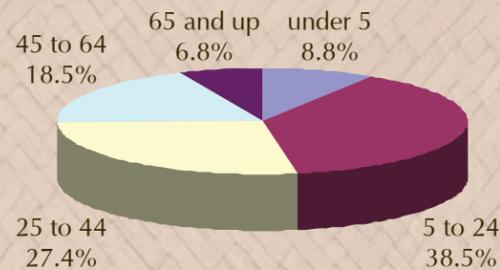


# Development Characteristics and Trends

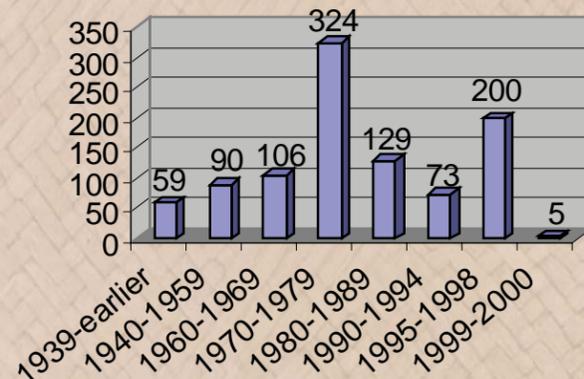
## POPULATION BASE AND HOUSING STOCK

The Nānākuli DHHL Area consists of the lands surrounding the Hawaiian Homesteads in Nānākuli Valley and the southern part of Lualualei. This corresponds to the U.S. Census CDP (Census Designated Place) of Nānākuli. The area has a stable population base, and is home to approximately 10,814 people, of whom more than 40% are native Hawaiian. DHHL has a significant presence there, as approximately 6,273 people, or 58% of the population, live in the Princess Kahanu and Nānākuli Hawaiian Homesteads. Over 50% of the total housing units are DHHL units. Those areas are basically built out, and have some aging housing stock and infrastructure.

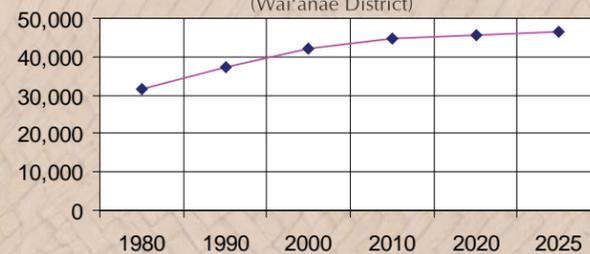
**Age Distribution, 2000**  
(Nānākuli CDP)



**Numbers of Homes Built by Decade in the Nānākuli Hawaiian Homesteads**



**Population Projection**  
(Wai'anae District)



Sources: U.S. Census & City and County of Honolulu

## COMMUNITY VALUES

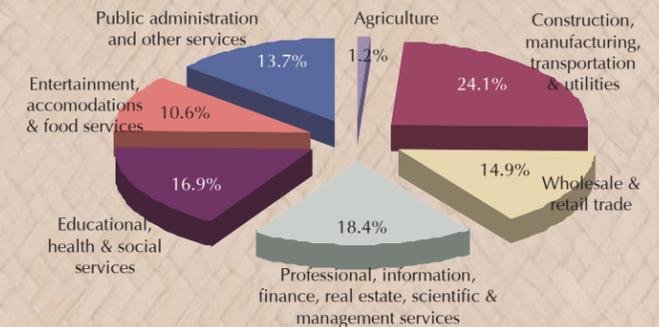
The City and County's Wai'anae Sustainable Communities Plan (2000) was created by and for the members of the larger Wai'anae District. The Plan demonstrates the community's desire to preserve the rural landscape and lifestyle. DHHL aims to work with the community on the update of this Plan, scheduled for 2007, to ensure that any future DHHL development is supported by the community.

## WORKFORCE

The labor force in the Nānākuli DHHL Area consists of 4,168 residents, or 57.4% of the working age citizens. Most of these residents are employed outside of the community and commute an average of 41 minutes to work.

Although agriculture accounts for only 1.2% of the employment in the Nānākuli CDP, the Wai'anae District as a whole is one of the largest centers for livestock production in the State of Hawai'i. In addition to producing pork, milk, poultry, and eggs, there are also numerous small truck farms that produce fresh fruits, vegetables, and herbs.

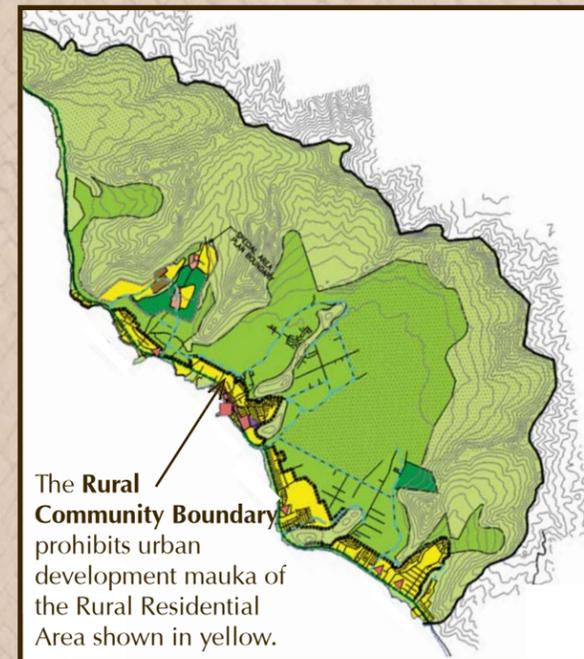
**Employed Civilians by Industry in 2000**  
(Nānākuli CDP)



## EMPLOYMENT OPPORTUNITIES

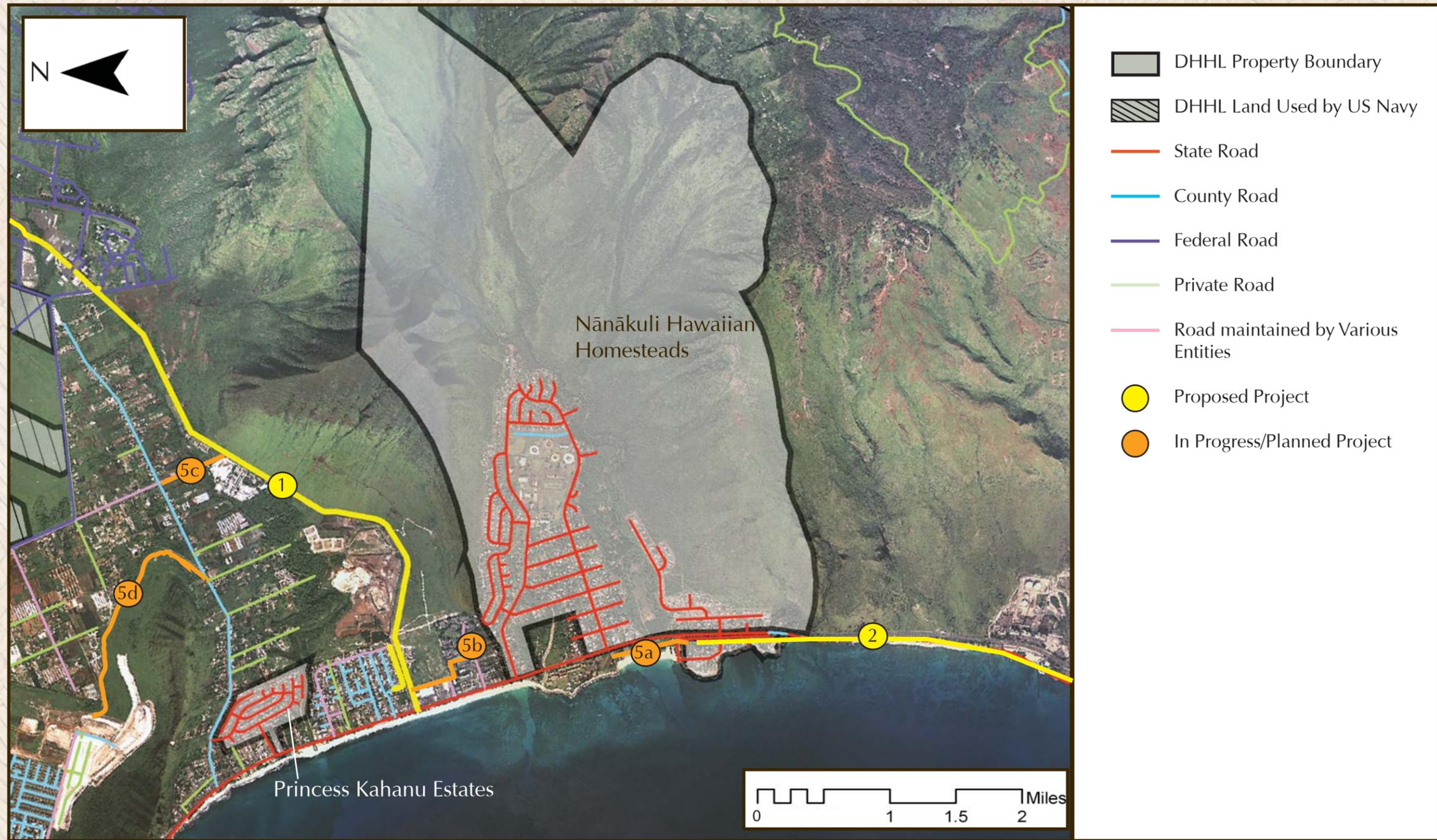
One of the goals of the Wai'anae Sustainable Communities Plan is to increase employment opportunities within the region. Community members believe that having more job opportunities in Wai'anae would increase their quality of life, since it would reduce commute time and traffic. Similarly, increased jobs opportunities within the Kapolei area could also decrease commute time.

In order to create such jobs, there has been an emphasis on opening new businesses and developing economic strategies by and for the community. The Wai'anae Coast Community Alternative Development Corporation (WCCADC) has helped to stimulate community-based economic development through projects such as its backyard aquaculture project.



Source: Wai'anae Sustainable Communities Plan, 2000

# Infrastructure: Roads and Transit



### Proposed Road and Transit Projects

#### 1 Wai'anae Second Access Road

The State Department of Transportation (DOT) has looked at alternate routes for connecting the Wai'anae Coast to the rest of the island for several decades, in order to enhance traffic movement on the Wai'anae Coast. One of the routes considered was from Farrington Highway to Kunia Road by traversing the Wai'anae Mountain Range, using the Kolekole Pass Road. However, use of this roadway is severely limited due to often severe wind conditions and Navy operations restrictions. Therefore, this route was dropped in favor of using Pōhākea Pass.

*Status:* This Second Access project (#509) is currently on the O'ahu Regional Transportation Plan 2030 (ORTP 2030) Long-Range Plan Project List (2016 to 2030), with an estimated capital cost of \$423 million (in 2005 \$). Due to the high cost involved, getting this project funded would take coordination between the DOT and the Hawai'i State Legislature, a local match for federal funds, and the project would need to be completed in phases.

#### 2 OR & L Railroad Extension

Friends of Pearl Harbor Historic Trail, a non-profit, is pushing for a demonstration project with federal funds to expand the OR & L Railroad track from Halawa landing to Nānākuli. The aim of this project is to create an outdoor recreation trail and transportation network, economic revitalization and the creation of local jobs for the communities along the railway, and enhancement of environmental preservation and education.

*Status:* Senate Bill 1378, which officially recognizes the path from Halawa landing near the USS Arizona Visitor Center through Waipahu as the Pearl Harbor Historic Trail, was signed by Governor Lingle in July 2005. However, pending OR&L right-of-way issues must be resolved before the DOT will pursue the repair of the tracks between Fort Weaver Road and Kahe Point.

***The proposed project below may help with the overall flow of traffic for the area, but it is not demarcated on map because it is located outside of the map boundaries.***

#### 3 Honolulu High-Capacity Transit Corridor Project

The goal of the Honolulu High-Capacity Transit Corridor Project is to improve the ability of people to move in the highly congested east-west corridor between Kapolei and the University of Hawai'i at Mānoa. Four different transportation options were evaluated. The alternative selected proposed a Fixed Guideway (light-rail) transit system. Five possible alignments stretch from Kapolei or Kalaeloa to Ala Moana Center or the University of Hawai'i at Mānoa, and are being considered by the City ([www.honolulutransit.org](http://www.honolulutransit.org), October 2006). The estimated cost for the project is between \$3.8 and \$4.6 billion. If implemented, this project could be utilized by those people who commute from Nānākuli to Honolulu, although they would have to first travel to Kapolei or Kalaeloa.

*Status:* The City is moving toward a December 2006 deadline for final approval. It has indicated the intent to complete an environmental impact statement by early 2007.

### In Progress/Planned Road and Transit Projects

#### 4 Farrington Highway Improvements

Farrington Highway is the main route for travel within the Wai'anae District, as well as the only commuter highway for trips out of the district. This fact, along with the growing population along the leeward coast and increased automobile use, has led to congestion and a relatively high number of traffic accidents. In response to the situation, the O'ahu Metropolitan Planning Organization (OMPO) has included several projects in the ORTP 2030 that aim at improving the flow of traffic and the safety of the area.

*Status:* Those projects that have been included in the *O'ahu Transportation Improvement Program (TIP)*, for FYs 2006 - 2008, consist of replacing out-of-date bridges and intersection improvements, such as the creation of left-turn lanes and roadway widening. These projects are in various stages of design and construction. The ORTP 2030 Long-Range Plan (2016 to 2030) proposes realigning Farrington Highway around Mākaha Beach Park, between Makau Street and Water Street.

#### 5 Wai'anae Coast Emergency Access Road (WCEAR)

As mentioned above, Farrington Highway is currently the only route from the Wai'anae District to 'Ewa and to Honolulu beyond. There have been several situations in recent history that have left the route impassable, such as severe weather, traffic accidents, water main breaks, and other police and fire emergencies. Thus, the City Department of Transportation Services (DTS) conducted a planning study for an emergency access road that would serve to accommodate traffic in such situations. This route would connect existing roads mauka of Farrington Highway from Nānākuli to Mākaha, providing "bypass roads" in times of emergency.

*Status:* The Environmental Assessment was completed in 2002, and some of the sections have been constructed, including Pakeke Road and the Nānākuli makai roadway connector, phase I and II. The Pa'akea Road segment is currently under construction. The Helelua Place extension is scheduled to begin construction in the fall of 2006. DTS is still negotiating with community members regarding the construction of Kaulawaha Road. Four of the six segments are shown on the map on the previous page.

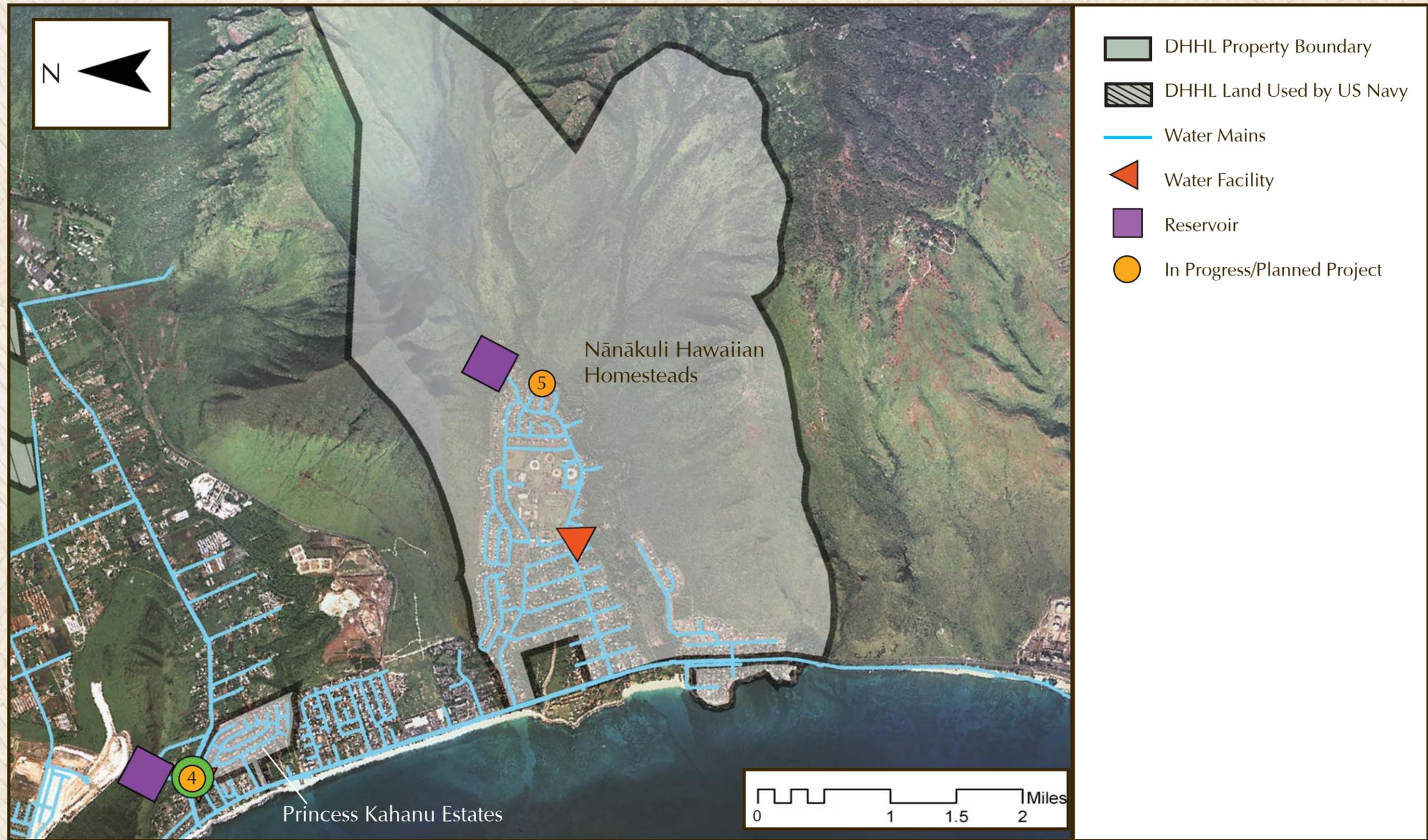
#### 6 Wai'anae Transit Center

A new transit center for TheBus is being constructed next to the Wai'anae Mall on Leihoku Street, mauka of Farrington Highway. The community transit center will accommodate express, trunk, and circulator bus services. There will also be improvements to bus shelters, the information kiosk, the comfort station, and park-and-ride facilities. Overall, the project will enhance the delivery of public transit services to the Wai'anae Coast.

*Status:* Construction began in August 2006, and is expected to last approximately eight months.

\* Outside of map boundaries.

# Infrastructure: Water



### Proposed Water Projects

*The proposed projects below could help with the overall supply of water to the area, but are not demarcated on the map because they are located outside of the map boundaries.*

#### 1 Increase Potable Water Imports from the Pearl Harbor Aquifer

In order to supply the Wai'anae District with the water it needs to support its projected growth, the most cost-effective short-term solution is to increase the water imports from the Pearl Harbor Aquifer Sector. The Wai'anae District's FY 2005 average potable water use was 9.7 mgd (million gallons per day), of which about 6.4 mgd was imported from the Pearl Harbor Aquifer. This water is conveyed to Wai'anae via a transmission main that runs along Farrington Highway, to the Board of Water Supply (BWS) Nānākuli, Lualualei, and Wai'anae Reservoirs. Pearl Harbor Aquifer water imports to Wai'anae are expected to increase to approximately 7.2 mgd by 2030.

**Status:** This appears to be an effective short-term solution that will most likely be implemented. However, as water demand grows in 'Ewa and the Primary Urban Center, an increasing amount of the water from the Pearl Harbor Aquifer will be allocated to those locations, and other water supply options will need to be developed for Wai'anae.

#### 2 BWS Kalaeloa Desal Plant

The BWS has developed preliminary designs for a future seawater desalination plant at Kalaeloa, on lands conveyed for public benefit from the federal government. The initial phase would produce 5 mgd, expandable to 15 mgd or more. This facility will utilize Reverse Osmosis (RO) membrane filtration to filter high quality basal seawater from deep wells into fresh water. Once constructed, it should serve to meet the future water needs of the Districts of 'Ewa and Wai'anae.

**Status:** The final design and construction of the Kalaeloa seawater desalination plant has been deferred since BWS conducted a major review of available ground water resources, infrastructure capacity, capital program priorities, and their long-range financial plan. The primary limiting constraint is funding the \$40 million to construct the facility. The federal government has been cooperative in conveying released navy lands for public benefit, and Congress passed Bill S.960 authorizing a 25% federal match for the design and construction costs. The Appropriation is pending and BWS expects to eventually issue municipal bonds for the remaining project costs.

### Existing Water System

The Honolulu Board of Water Supply (BWS) provides most of the water consumed in the Wai'anae District (about 87% in 2004), and nearly all of the water consumed on DHHL lands. The remaining water is provided by private (12%) and Federal infrastructure (2%). The source of the total water consumed is roughly one-half from Wai'anae ground water sources, and the remaining half is imported from the Pearl Harbor aquifer. Specifically, the Pearl Harbor Aquifer Sector Area is comprised of three major Aquifer System Areas, of which, the Waipahu-Waiawa Aquifer System Area supplies water to the Wai'anae District, among others.

The BWS operates a low pressure service system from Nānākuli to Wai'anae and high pressure service systems in Nānākuli, Wai'anae, and Mākaha. These systems are supplied by the 12 wells, one shaft, and five tunnels in the district. BWS also maintains 11 reservoirs there.

DHHL presently has less than 100 new homes proposed for the Wai'anae and Lualualei ahupua'a, and none for Nānākuli. The agency has a reservation with the State of Hawai'i Commission on Water Resource Management (CWRM) for future water allocations for their developments. Although no significant developments are planned in the near term for DHHL lands in the Wai'anae District, the population of the district as a whole is projected to grow. To meet that demand, the Wai'anae Watershed Management Plan (2006) used the Statewide Framework, which requires a range of forecasts in the amount of water required over the planning horizon, in order to create strategies to meet future water demands at reasonable costs. The projects that are most likely to be implemented are listed under "Proposed Water Projects." The following projects are already planned or in progress:

#### 3 Wai'anae District Farrington Highway Water Main Replacement Project

BWS is currently replacing water mains under Farrington Highway and improving the Wai'anae Valley Road Water System. The project is in the fourth and final phase, with an estimated project cost of \$14 million. (Not demarcated on map because the project does not correspond to a specific location.)

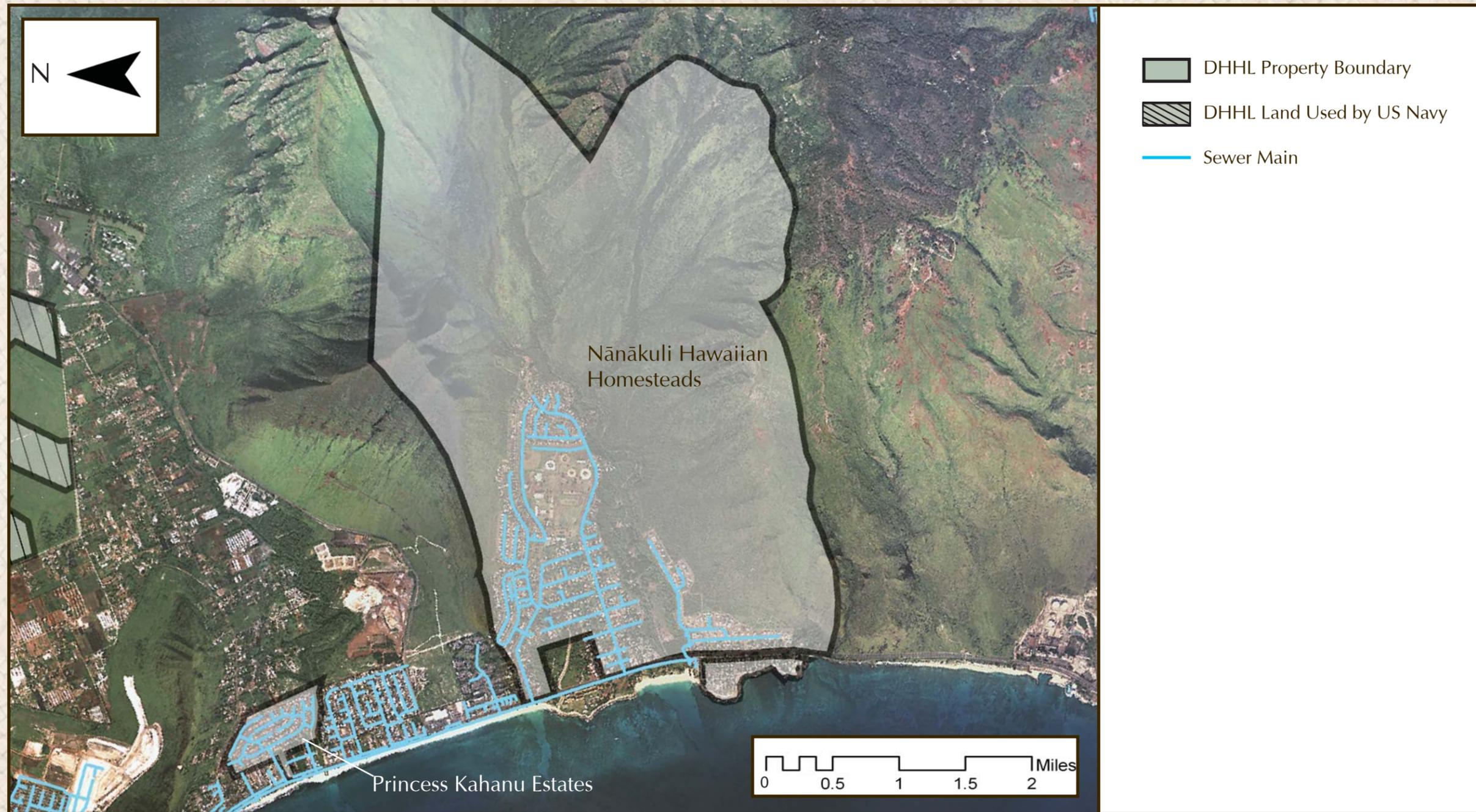
#### 4 The Lualualei Line Booster Improvements

The design for this project is scheduled to begin in FY 2007 and construction in FY 2009, for a budgeted amount of \$1.55 million.

#### 5 Nānākuli 242 Reservoir

The Nānākuli 242 Reservoir is currently in the design phase and scheduled to be completed in 2008.

# Infrastructure: Wastewater/Sewer



### Proposed Wastewater/Sewer Project

*This project is located outside of the map boundary.*

#### 1 Conversion of Wai'anae Wastewater Treatment Plant to R-1 Recycled Water

The Wai'anae Wastewater Treatment Plant (WWTP) currently produces about 3.1 mgd of R-3 effluent, which could potentially be converted to R-1 (tertiary disinfected) quality water and made available for direct reuse. R-1 is the highest quality recycled water and is approved for a variety of irrigation uses. The potential 3.1 mgd of R-1 water from the Wai'anae WWTP could be made available to farms, parks, and industrial operations in Wai'anae and Lualualei, as allowed within DOH (Department of Health) regulations.

The principal constraint for the development of recycled water facilities at the WWTP is the high chloride content of the wastewater (890 to 970 mg/l), which is due to aging sewer mains that allow infiltration of seawater. This high chloride content is at the upper tolerable limit of most moderately salt-tolerant landscaping and above most agricultural crop limits. It would be very costly to either repair the sewer mains or desalinate the wastewater effluent. Another major constraint is the cost recovery of R-1 treatment plant upgrades and the construction of a pipeline delivery system to a sufficient number of users.

The Wai'anae Watershed Management Plan (2006) states that this conversion should be part of the overall long-range water resources management plan for the district, but that the project has a low level of feasibility until chloride levels can be reduced to acceptable levels. In the meantime, the Plan encourages the City & County of Honolulu to conduct a chloride infiltration study to determine which sewer line segments contribute the most seawater to the WWTP and then plan for the timely replacement of these mains.

### Existing Wastewater, Collection, Treatment, and Disposal

The existing Wai'anae Water Treatment Plant has design capacity to accept an average of 5.2 mgd (millions of gallons per day), and a peak flow of 13.8 mgd. It is currently producing about 3.1 mgd of R-3 (secondary disinfected) effluent, which is disposed of via ocean outfall approximately 1.1 miles offshore. It is estimated that the facility could service a total population of 65,000 people.

The major sewer lines generally follow Farrington Highway and the main valley roads, with the exception of Lualualei Valley, where the sewer lines do not extend beyond the more densely developed coastal zone. Some of these lines were installed as early as the 1950s, and are in need of upgrades or replacement, which have begun.

In addition, many of the existing residences that were initially developed with cesspools have not yet connected to the wastewater system. In 2000, that number was approximately 1,180 homes in the Wai'anae District, many of which are on property that was developed by DHHL. The sewer lines have been sized to handle these house lots. However, since many people have not connected to the system (due to the high cost), low flows in the lines cause septic conditions that often result in odors.

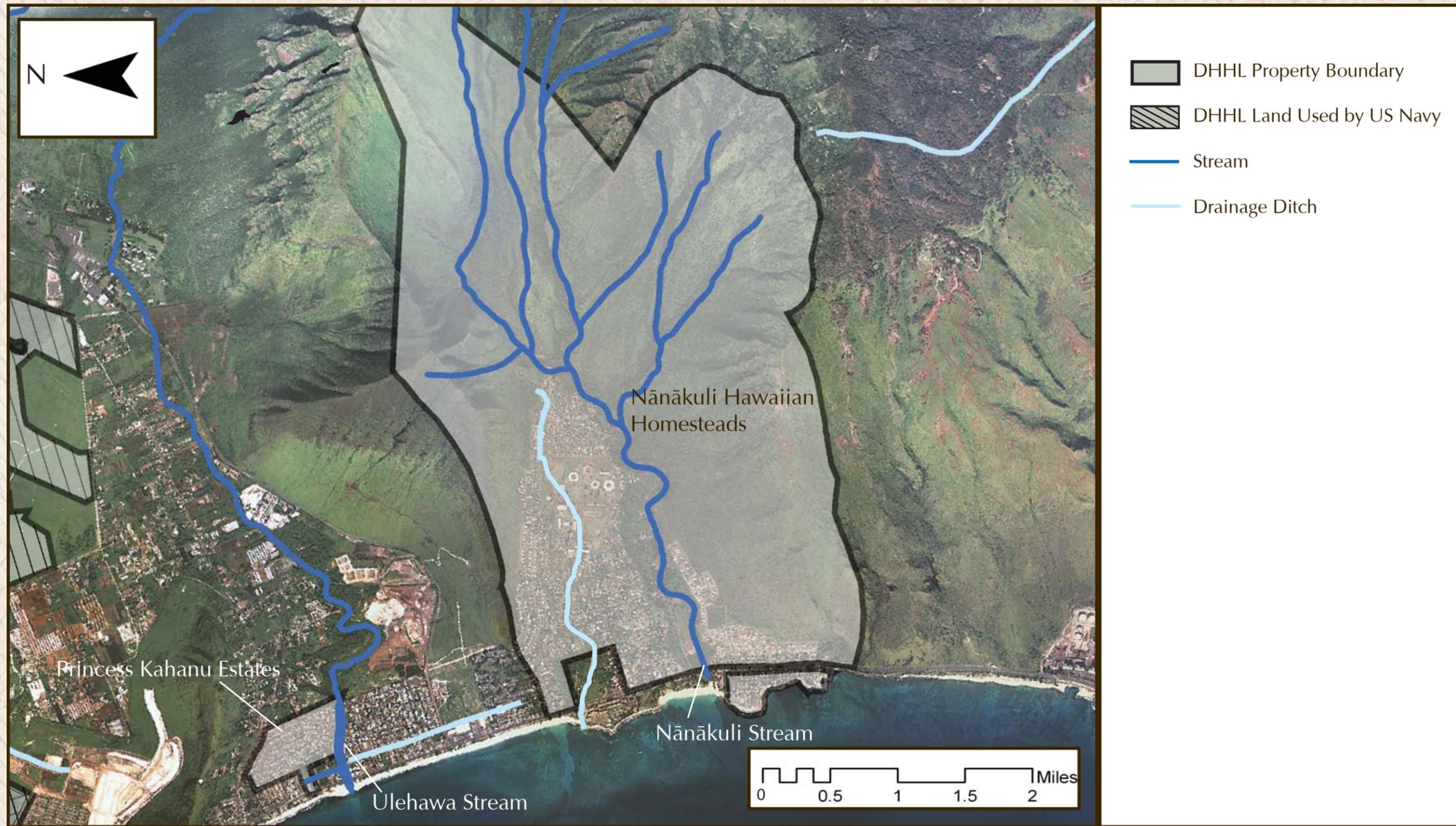
#### 2 Phased Program for Replacement of Old Sewer Lines

The program for the phased replacement of old sewer lines in Farrington Highway and in the main valley roadways should be continued. The sewer main that services areas between Pōka'i Bay and Mākaha Valley is operating at capacity and will need to be upgraded should development growth continue in Mākaha.

*Status:* The sewer lines are currently being replaced in various stages.

\* Project is not demarcated on map because it does not correspond to a single location.

# Infrastructure: Drainage



## Proposed Drainage Projects

### 1 Comprehensive Study of Flooding and Drainage Problems in the Wai'anae District

A comprehensive study of local flooding and drainage problems in the Wai'anae District is recommended by the Wai'anae Sustainable Communities Plan (SCP, 2000). Possible corrective measures may include removal of drainage barriers, cleaning of drainage channels and stream channels, re-grading areas to encourage positive drainage, and construction of new drainage channels, culverts, and other drainage structures. Such a drainage plan should also include programs for the ongoing enforcement of rules and regulations relating to proper grading and drainage for both urban development projects and agricultural use of the land, and public education. In addition, standards for the creation and use of sediment basins at critical locations are encouraged.

*Status:* The flood study is currently a recommendation, but has not yet been funded.

### 2 Implementation of Flood Study Recommendations for Lualualei

A Flood Study for Lualualei was performed by the US Army Corps of Engineers and the US Department of Agriculture Natural Resources Conservation Service in 2001. Analysis of flooding in this area found insufficient drainage infrastructure. Sumps without drainage relief were also found to be prevalent in the area. Recommendations to alleviate local flooding include diverting water from ineffective sumps and directing runoff to existing drainage infrastructure.

*Status:* The Navy has secured some funding for development and design studies to implement a detention basin. Various members of the community, City, State, and Federal government have been meeting with congressional staff in order to secure funding for priority flooding mitigation measures.

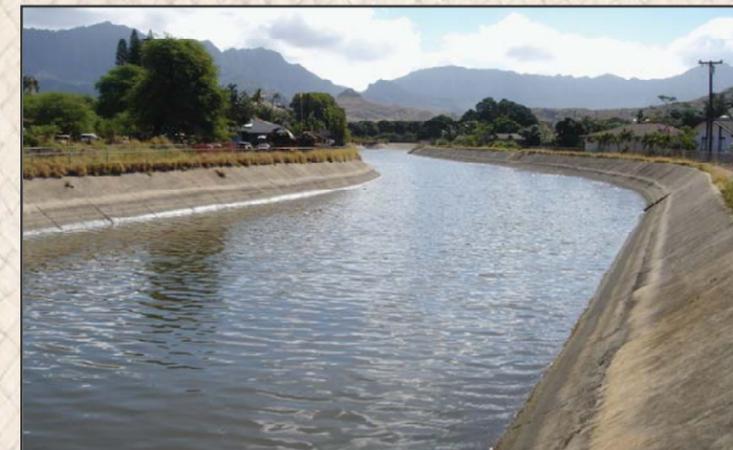
## Background of Drainage Conditions

There are no perennial streams in the coastal areas of the Wai'anae District, and the average annual rainfall in the coastal plain is less than 20 inches. Nonetheless, the area has experienced drainage problems and flood damage as a result of severe storms. Studies conducted in the 1950s showed that the major cause of the flooding was the accumulation of sand at the dry stream mouths, which blocked water runoff during heavy rains.

As a result of these studies, the lower reaches of five streams in the District were channelized to improve storm water flow to the ocean. The Wai'anae ahupua'a contains the Kaupuni Stream channel, while Lualualei has three such streams: the Mā'ili'i'i, the Mā'ili, and the Ulehawa Streams. The fifth channelized stream is the Nānākuli Stream, located in the Nānākuli ahupua'a.

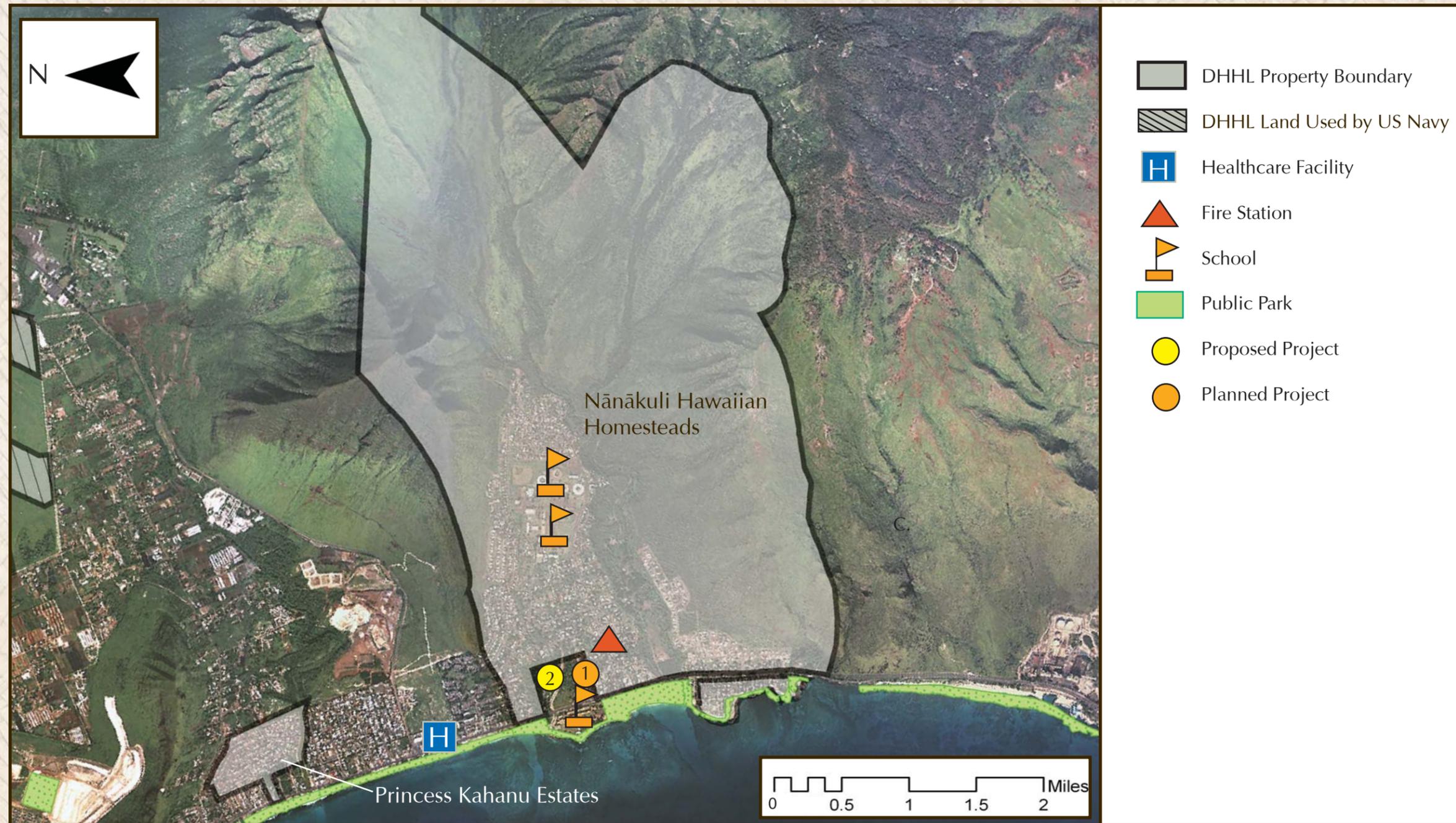
Flooding is still a problem where makai areas are higher in elevation than those mauka because of the deposition of sediment, which has a damming effect. In some areas, Farrington Highway was built up higher than the adjacent mauka areas and restricts seaward runoff, causing localized flooding. Other causes of such flooding include the lack of adequate drainage facilities in subdivisions, un-permitted property walls that divert storm water, the filling of natural drainage swales and ditches, and clogged storm drains.

Flood control and mitigation is currently underway at several levels. The City and County's Capital Improvement Program calls for a variety of drainage improvements in Wai'anae. Farrington Highway Drainage Improvements work began June 21, 2004 to provide better drainage through the implementation of curbs and gutters. Lastly, several groups have requested or begun additional drainage studies.



*Kaupuni Stream in its lower reaches*

# Regional Services: Public Facilities



## Community Center

1 The **Nānākuli Village Center** is planned for the Nānākuli Hawaiian Homestead Community Association. The first of three phases will be a multipurpose Community Center, which will consist of a 2-story building, including an assembly hall that can hold 1,200 people, a pre-school facility, offices, classrooms, and a community kitchen (47,00 s.f.). The facility will be utilized to provide office and program space for various social service, health service, employment training and economic development programs, targeting low and moderate income individuals and families residing in the surrounding community. When completed, the Community Center will also serve as a hub for community-based social, cultural, educational, and recreational activities and events. The groundbreaking ceremony was held on September 15, 2006.

The second phase will consist of a commercial center, located in the front of the village (facing Farrington Highway), which will house native Hawaiian-owned businesses. The third complex will be a surfing hall of fame designed by Keoni Downing. The village center will also include a Boys & Girls Club, which will be a separate facility located on the Wai'anae-side of the drainage ditch.

## Library

2 The Hawai'i State Public Library System will be planning a new **Nānākuli Public Library** for a site adjacent to the Nānāikapono Elementary School. In July 2006, Governor Lingle released \$46,000 to finance a project development report and master plan. Currently, the nearest library is the Wai'anae Public Library, located near the Wai'anae Boat Harbor.

## Schools

The State Department of Education (DOE) currently operates 10 public schools in the Wai'anae District, three of which are in Nānākuli. This includes two elementary schools and one combined intermediate and high school. In addition, there are two private schools and one charter school in the area. Overall, these schools generally have sufficient capacity for the limited growth projected for the District.

School	Grades	Enrollment SY 04-05	Capacity SY 04-05	Over and Under Capacity	Projected Enrollment SY 09-10
<b>Nānākuli Complex</b>					
Nānāikapono Elem	K – 6	986	1134	148	848
Nānākuli Elem	K – 6	559	681	122	617
Nānākuli High/Inter	7 – 12	1343	1163	(180)	1168
<b>Charter School</b>					
Ka Waihona o ka Na'auao	K – 7	218	N/A	under	N/A
<b>Private Schools</b>					
Adventist Malama Elem	K - 8	49	60	11	60
Mā'ili Bible School	K - 12	142	180	38	N/A

The figure in red indicates the number of students by which the school was over capacity for the '04-'05 school year.

## Parks

The Wai'anae District currently has 20 parks from 7 different categories. However, only one of these is a Neighborhood Park, which according to the City and County's park standards, constitutes a shortage. The standards require one Neighborhood Park (4-6 acres) per 5,000 people. Development of adequate public parks is a top priority listed in the Wai'anae Sustainable Communities Plan (2000). The Plan recommends an incremental park development program that would result in two Neighborhood Parks for each of the main settlement areas of the District: Nānākuli, Lualualei, Wai'anae, and Mākaha.

## Healthcare Facilities

- **Kaiser Permanente** is located in the **Nanaikeola Clinic** in Nānākuli. The facility offers regular health care services, including family practice, internal medicine, and pediatrics, along with clinical services such as diabetes education, diagnostic imaging, and nutrition counseling.
  - **Queen Lili'uokalani Children's Center** offers services for Hawaiian orphans and destitute children.
  - **Hale Na'au Pono, the Wai'anae Coast Community Mental Health Center** provides culturally and socially sensitive, community-based, behavioral health services for children and adults.
  - **Wai'anae Coast Comprehensive Health Center (WCCHC)** is an outpatient medical clinic that offers a wide variety of services including counseling for family violence, substance abuse, and diabetes, health and wellness programs, traditional Hawaiian healing, adult day care, and health screening.
- 3 **WCCHC 3-Story Family Medical Building** is a planned project that will house the expanding services offered by the center, including medical training and education programs. The integrated floorplan is designed to allow for easy movement between the various clinics and classrooms. As of June 2006, 80% of the \$12 million projected cost had been secured. (*Located outside of map boundaries.*)

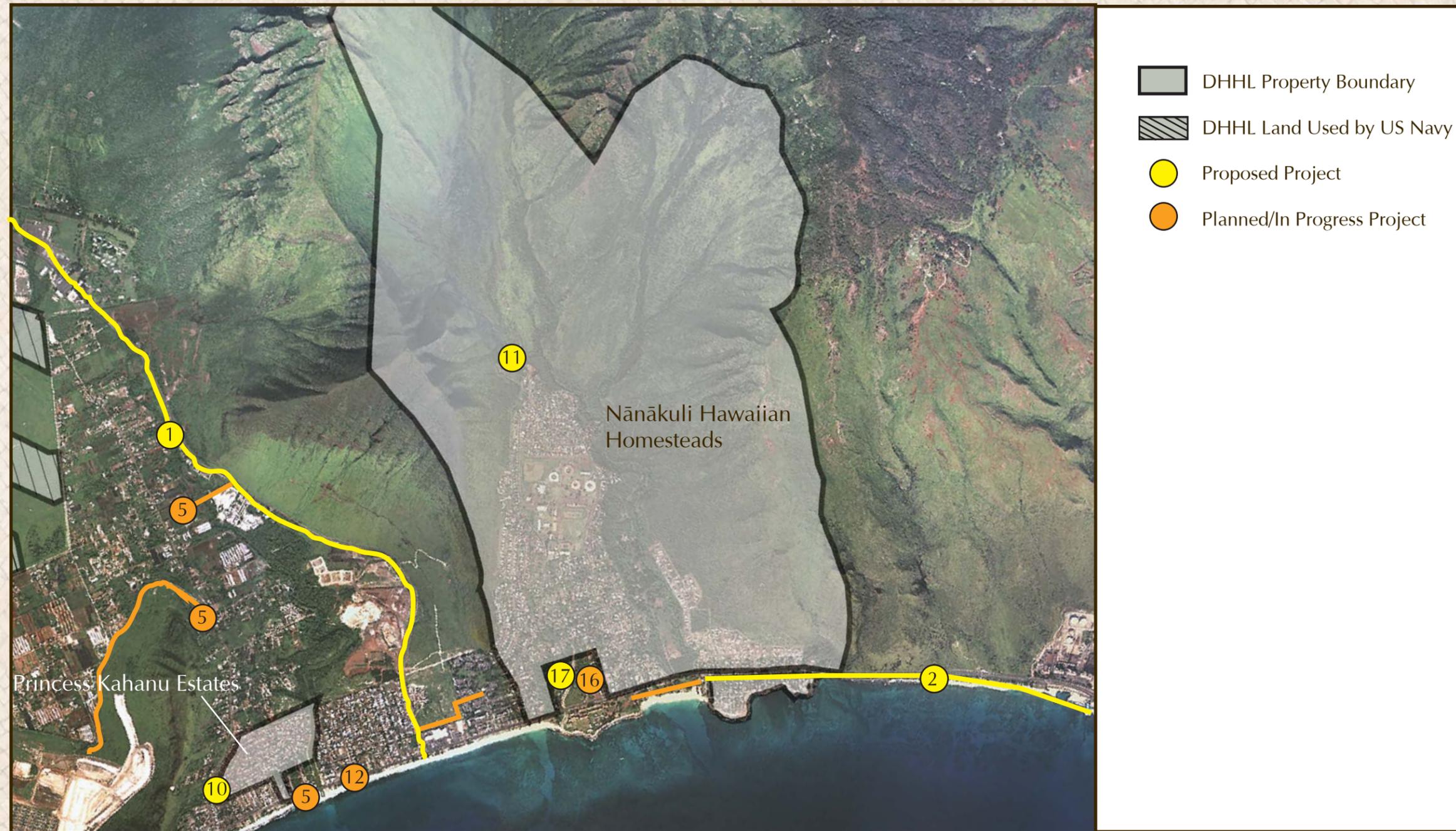
## Police Facilities

The **Honolulu Police Department** services the Wai'anae District through the Wai'anae Substation, located at 85-939 Farrington Highway. Wai'anae is included in District 8, which has its receiving desk at the Kapolei station. All arrests that occur in District 8 are processed at the Kapolei station, which is also the location of the offices for Juvenile Services, Criminal Investigation, and the Narcotics/Vice Division.

## Fire/EMT Services

The **Honolulu Fire Department** has two fire stations in the Wai'anae District – one in Nānākuli (Station 28) and the other in Wai'anae Valley (Station 26). The Nānākuli Fire Station is equipped with an engine, a tanker truck, and an inflatable rescue boat. The Wai'anae Valley Station is equipped with an engine, a quint (combination pumper/ladder truck), and a tanker. Back-up service is provided by fire stations in Kapolei, Makakilo, 'Ewa, and Waipahu.

# Development Projects



## **Roads and Transit**

### **Proposed**

- ① Wai'anae Second Access
- ② OR & L Railroad Expansion
- ③ Honolulu High-Capacity Transit Corridor Project

### **Planned/In Progress**

- ④ Farrington Highway Improvements
- ⑤ Wai'anae Coast Emergency Access Road
- ⑥ Wai'anae Transit Center

## **Water**

### **Proposed**

- ⑦ Increase Potable Water Imports from Pearl Harbor Aquifer
- ⑧ BWS Kalaelo Desal Plant

### **Planned/In Progress**

- ⑨ Wai'anae District Farrington Highway Water Main Replacement Project
- ⑩ The Lualualei Line Booster Improvements
- ⑪ Nānākuli 242 Reservoir

## **Wastewater**

### **Proposed**

- ⑫ Conversion of Wai'anae Wastewater Treatment Plant to R-1 Recycled Water

### **Planned/In Progress**

- ⑬ Phased Replacement of Old Sewer Lines

## **Drainage**

### **Proposed**

- ⑭ Comprehensive Study of Flooding and Drainage Problems in the Wai'anae District
- ⑮ Implementation of Flood Study Recommendations for Lualualei

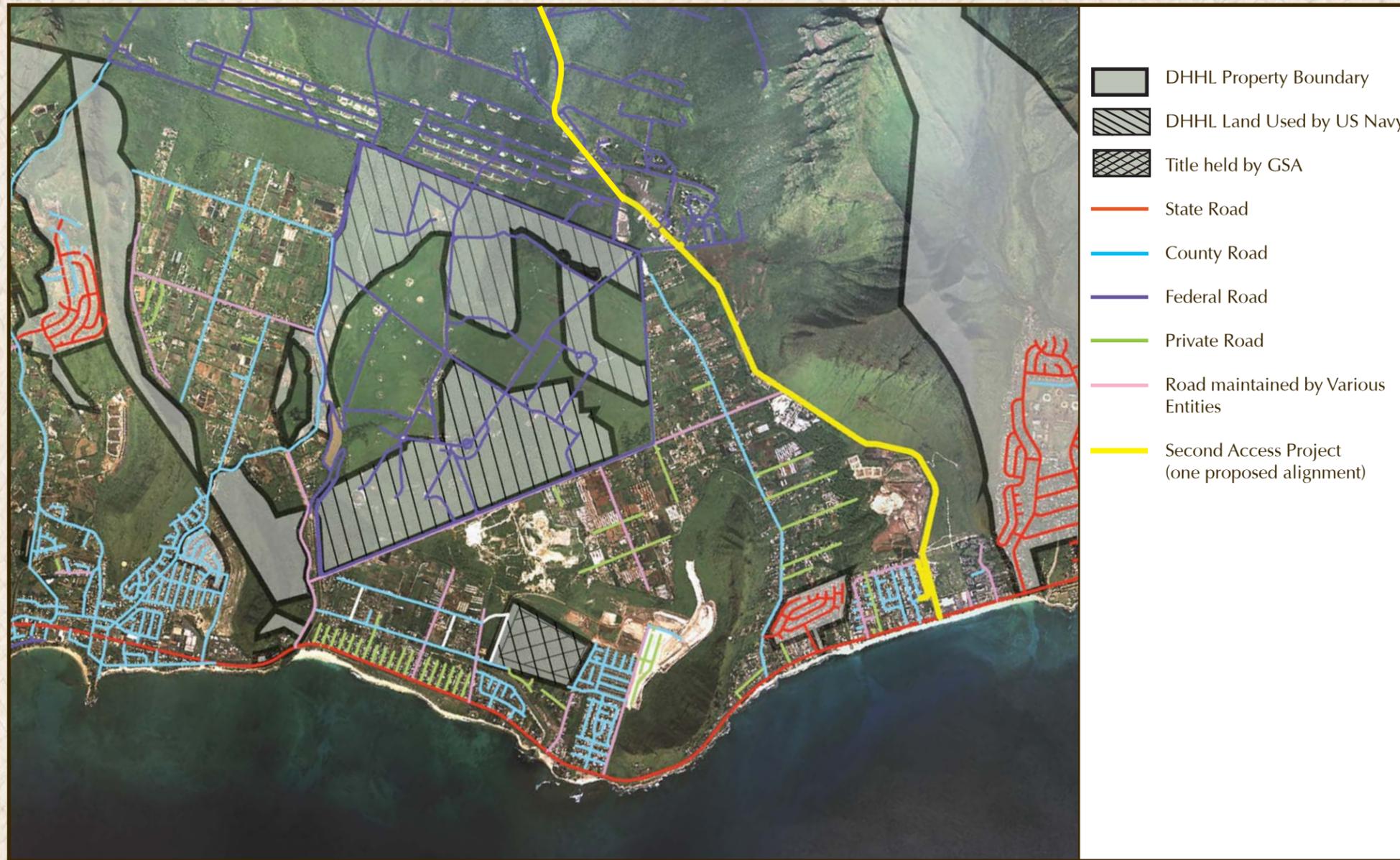
## **Community/Public Facilities**

### **Proposed**

- ⑯ Nānākuli Village Center
- ⑰ Nānākuli Public Library
- ⑱ Wai'anae Coast Comprehensive Health Center 3-Story Family Medical Building

\*Note: Projects that are not demarcated on map are either outside of the map boundaries or do not correspond to a specific location.

## Priority Project: Wai'anae Second Access Road



**Potential Partners** - DOT, City and County of Honolulu DTS

**Location** - Farrington Highway in the vicinity of Mā'ili, over the Wai'anae Mountain Range, to Kunia Road

**Cost** - \$423 Million (2005 \$) plus land costs

**Status** - The State DOT has looked at alternate routes for connecting the Wai'anae Coast to the rest of the island for several decades. The Wai'anae Second Access Road is project #509, which is currently on the ORTP 2030 Long-Range Plan Project List (2016 to 2030). Due to the high cost involved, getting this project funded would take coordination between the DOT and the Hawai'i State Legislature, and a local match for federal funds would need to be identified. In addition, the project would need to be completed in phases.

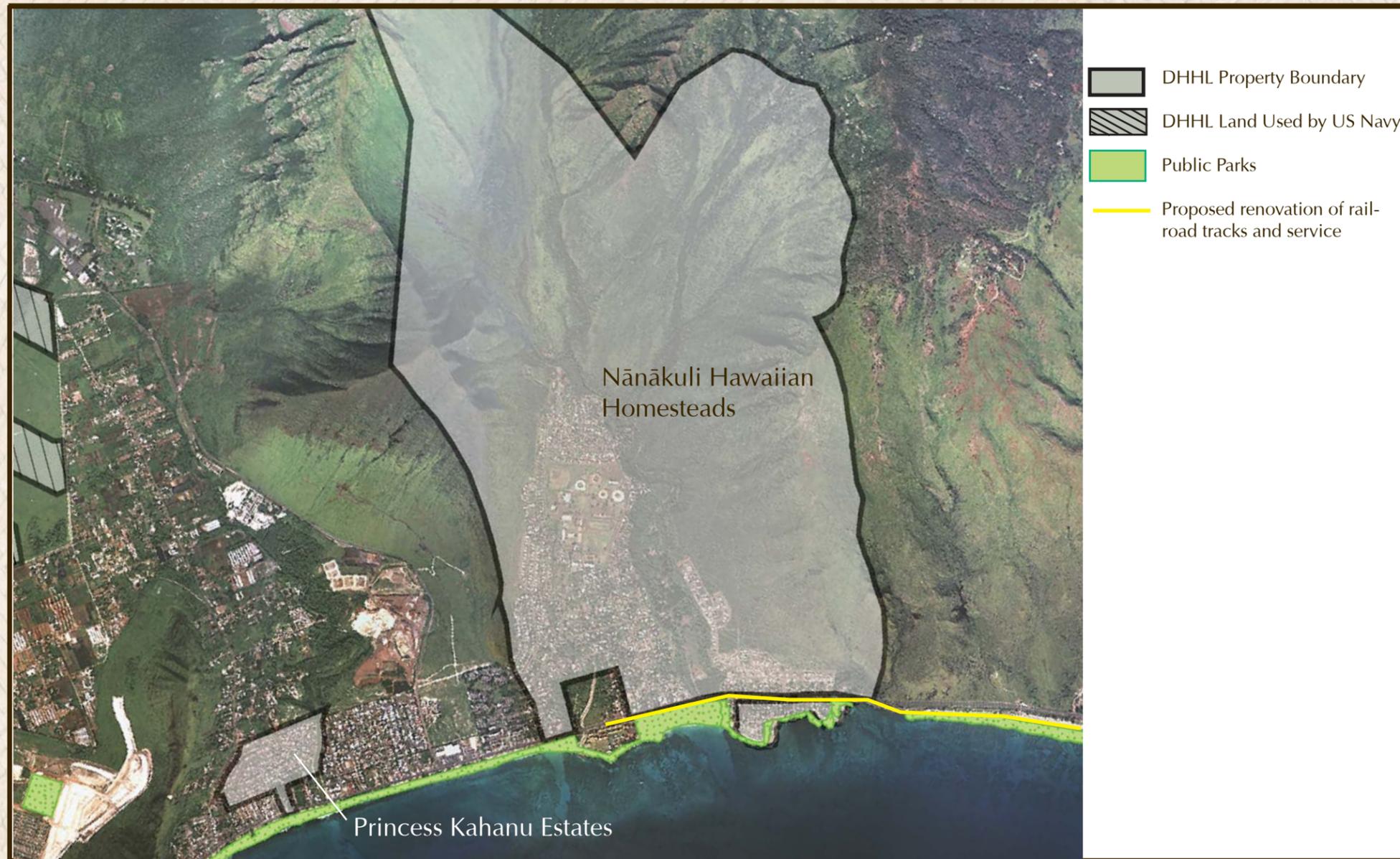
**Description** - A new 2-lane road from Farrington Highway, up Lualualei Naval Road, over the Wai'anae Mountain Range, through Pōhākea Pass, to Kunia Road.

**Estimated Completion Date** - Funding has not been identified for this Project, so a completion date can not be estimated.

### Project Schedule

\* Schedule is unknown since funding for the Project has not been identified. If and when funding is secured, numerous work tasks would need to be conducted, such as: consultation meetings with major affected landowners, evaluation of alternative tunnel configurations, geologic exploration, cultural impact assessment, EIS clearance, among others, before construction could begin. The total time frame would likely be in excess of ten years.

## Priority Project: OR & L Railroad Expansion



**Potential Partners** - DOT, Friends of Pearl Harbor Historic Trail

**Location** - OR & L Railroad track from Halawa landing to Nānākuli

**Cost** - undetermined

**Status** - Senate Bill 1378, which officially recognizes the path from Halawa landing near the USS Arizona Visitor Center through Waipahu as the Pearl Harbor Historic Trail, was signed by Governor Lingle in July 2005. However, pending OR&L right-of-way issues must be resolved before the DOT will pursue the repair of the tracks between Fort Weaver Road and Kahe Point.

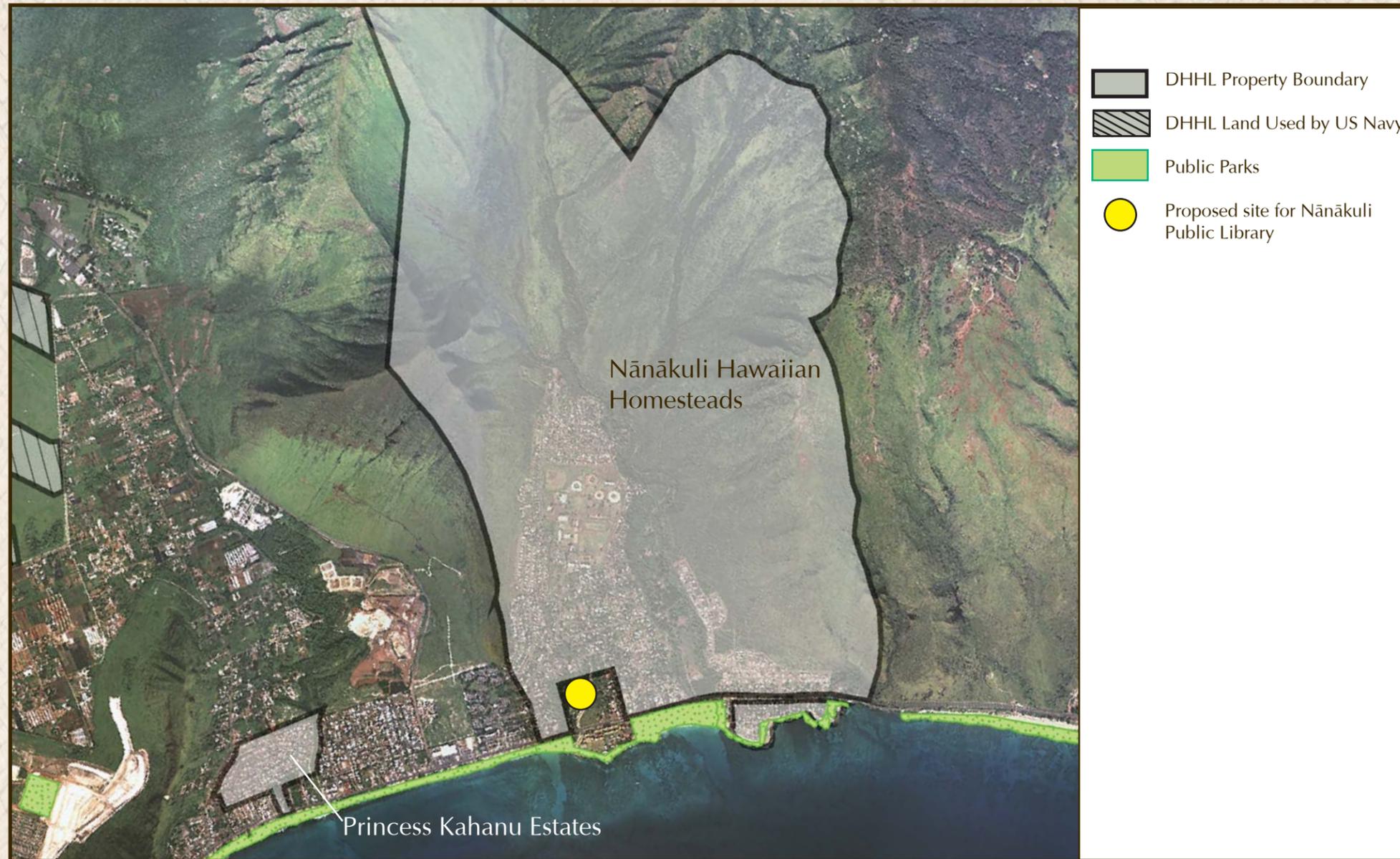
**Description** - Friends of Pearl Harbor Historic Trail, a non-profit, is pushing for a demonstration project with federal funds to expand the OR & L Railroad track from Halawa landing to Nānākuli. The aim of this project is to create an outdoor recreation trail and transportation network, economic revitalization and the creation of local jobs for the communities along the railway, and enhancement of environmental preservation and education.

**Estimated Completion Date** - not yet determined.

### Project Schedule

*\* Schedule is unknown since project has not been approved and funding has not been identified.*

## Priority Project: Nānākuli Public Library



**Potential Partners** - Hawai'i State Public Library System (HSPLS)

**Location** - Adjacent to Nānāikapono Elementary School, Nānākuli

**Cost** - Undetermined

**Status** - Governor Lingle released \$46,000 to finance a project development report and master plan in July 2006.

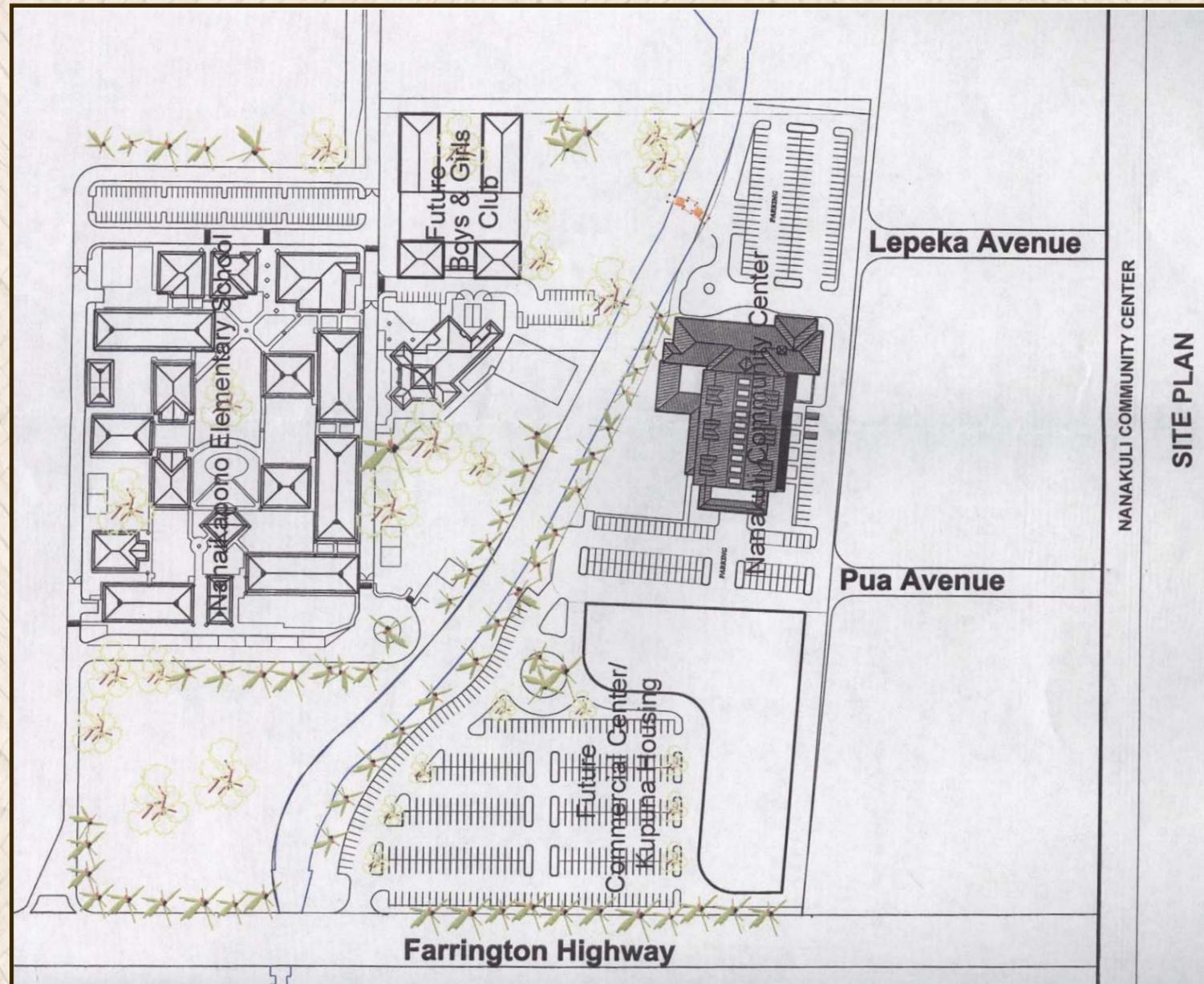
**Description** - The money released by the Governor in June is to be used to assist HSPLS in the planning phase of the new Nānākuli Public Library. The proposed location is on a site adjacent to the Nānāikapono Elementary School. Currently, the nearest library is the Wai'anae Public Library.

**Estimated Completion Date** - There is no estimated date for construction of the proposed project. The planning study was scheduled to begin in August 2006 and is expected to be completed by February 2007.

### Project Schedule

*\* Project schedule is unknown since the planning phase has not yet been completed.  
The planning study was scheduled to begin in August 2006 and is expected to be completed by February 2007.*

## Priority Project: Nānākuli Village Center



**Potential Partners** - DHHL, Nānākuli Hawaiian Homestead Community Association (NHHCA), Boys & Girls Club, retail owners

**Location** - Adjacent to Nānākūpono Elementary School; TMKs 8-9-02:01 and 8-9-02:67

**Cost** - Approximately \$73 Million

**Status** - Groundbreaking ceremony was held on September 15, 2006.

**Description** - The front of the village (facing Farrington Highway) will be a commercial center where native Hawaiians can own their own businesses and learn about economic development.

The second complex will be a multipurpose Community Center, which will consist of a 2-story building, including an assembly hall that can hold 1,200 people, a pre-school facility, offices, classrooms, and a community kitchen (47,00 s.f.).

The third complex will be a surfing hall of fame designed by Keoni Downing.

The Boys & Girls Club will be a separate facility located on the Wai'anae-side of the drainage ditch.

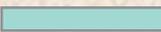
**Estimated Completion Date** - 2011-2012

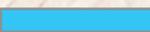
### Estimated Project Schedule



# Project Tracking

	PROJECT	TYPE	LEAD	4Q 2006	1Q 2007	2Q 2007	3Q 2007	4Q 2007	1Q 2008	2Q2008	3Q 2008	4Q 2008	1Q 2009	2Q 2009	3Q 2009	4Q 2009	1Q 2010
1	Wai'anae Second Access Road	roads	DOT	proposed pending funding													
2	OR & L Railroad Expansion	rail	DOT/Friends of Pearl Harbor Historic Trail	proposed													
3	Nānākuli Public Library	community development	Hawaii State Public Library System (proposed)	Project development report													
4	Nānākuli Village Center	community development	DHHL	Ground-breaking ceremony	Infrastructure phase				Construction begins								
5	Mass Transit Corridor	rail	DTS	Alternative Selection		Draft EIS		Final EIS					Construction begins				
6	Farrington Highway Improvements	roads	DOT	In progress													
7	Wai'anae Coast Emergency Access Road	roads	DTS	In progress													
8	Wai'anae Transit Center	bus	DTS	In progress		Project completed											
9	Increase Potable Water Imports from Pearl Harbor Aquifer	water	BWS	proposed													
10	BWS Kalaeloa Desal Plant	water	BWS	proposed													
11	Wai'anae District Farrington Highway Water Main	water	BWS	In progress													
12	Lualualei Line Booster Improvements	water	BWS	Begin design							Construction begins						
13	Nānākuli 242 Reservoir	water	BWS	Design phase						Project completed							
14	Conversion of Wai'anae Wastewater Treatment Plant to R-1 Recycled Water	wastewater	City & County of Honolulu	proposed													
15	Phase replacement of Old Sewer Lines	sewer	City & County of Honolulu	In progress													
16	Comprehensive Study of Flooding and Drainage Problems in the Wai'anae District	drainage	undetermined	proposed													
17	Implementation of Flood Study Recommendations for Lualualei	drainage	undetermined	proposed													
18	Wai'anae Coast Comprehensive Health Center 3-Story Family Medical Building	medical	WCCHC	proposed													

Priority Projects: 

Other Important Projects: 

*Contact Information:*

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