

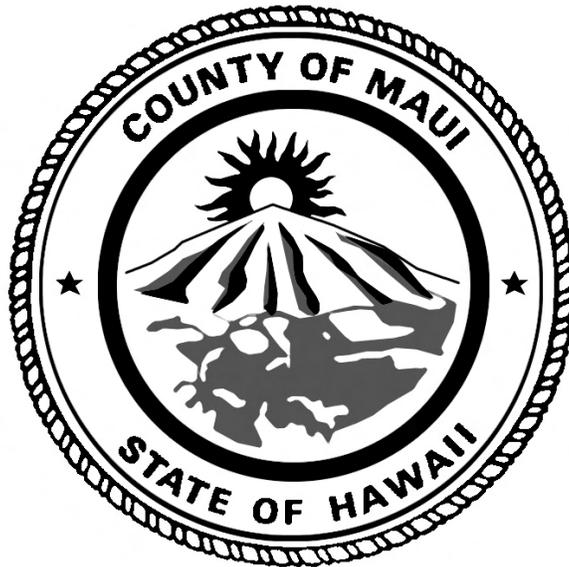
DRAFT ENVIRONMENTAL ASSESSMENT

Lanai Community Health Center

CDBG Project No. 08-04

Lanai City, Lanai, Hawaii

TMK: 4-9-006: 011



Prepared for:

County of Maui
Office of the Mayor
Community Development Block Grant

Prepared by:

Wilson Okamoto Corporation

June 2010

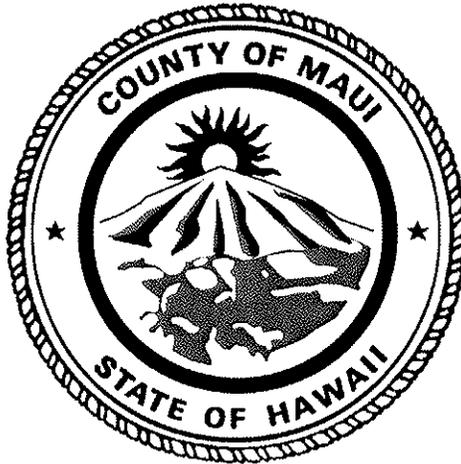
DRAFT ENVIRONMENTAL ASSESSMENT

LANAI COMMUNITY HEALTH CENTER

Tax Map Key: 4-9-006:011

Lanai City, Lanai, Hawaii

(CBDG Project No. 08-04)



Prepared for:

**County of Maui
Office of Mayor
Community Development Block Grant
200 High Street
2145 Kaohu Street, Suite 201
Wailuku, Maui, Hawaii**

Prepared by:

**Wilson Okamoto Corporation
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June 2010

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SUMMARY

Proposing Agency:	County of Maui Office of the Mayor Community Development Block Grant 200 South High Street Wailuku, Maui, Hawaii 96793
Accepting Agency:	County of Maui Office of the Mayor Community Development Block Grant 200 South High Street Wailuku, Maui, Hawaii 96793
EA Preparer:	Wilson Okamoto Corporation 1907 South Beretania Street, Suite 400 Honolulu, Hawaii 96826 Contact: John L. Sakaguchi, AICP, Senior Planner Tel: 808.946.2277; Fax: 808.946.2253
Project Location:	Lanai City, Lanai, Hawaii
Recorded Fee Owner:	Castle and Cooke Resorts, LLC
Tax Map Key:	TMK: 4-9-006:011
Area:	25,067.07 square feet (about 0.575 acres) approximately
State Land Use Classification:	Urban
County Zoning:	Business Country Town
Proposed Action:	The Lanai Community Health Center, a Federally qualified facility under the U.S. Department of Health and Human Service Health Resources and Services Administration, proposes to construct a replacement health care facility in Lanai City on the site bounded by Houston Street on the north, Sixth Street on the west, Gay Street on the south and the existing Lanai Art Center and Maui Community College facilities on the east, to provide accessible primary medical care, dental care, behavioral health services, prenatal, family planning, nutrition and preventive health education services open to the low- and moderate-income, uninsured and underinsured residents of Lanai.
Impacts:	Construction activities are anticipated to have short-term noise, traffic, and air quality impacts in the surrounding area during the construction period. Construction noise and air quality impacts

will be minimized by compliance with applicable State Department of Health Rules. Construction will include removal of the three existing former dormitory structures currently on the project site. The three structures have been determined to be non-contributory to the National Register of Historic Places nomination prepared by the County of Maui Planning Department and which is currently under review. Once construction has been completed, no significant adverse environmental or community impacts in the surrounding area are anticipated.

**Parties Consulted During
Pre-Assessment Consultation:**

Federal

Department of the Army
U.S. Fish and Wildlife Service
U.S. Dept. of Agriculture National Resources
Conservation Services
U.S. Environmental Protection Agency

State of Hawaii

Department of Hawaiian Home Lands
Department of Health
Department of Land and Natural Resources (DLNR)
DLNR Historic Preservation, Division,
DLNR Maui/Lanai Island Burial Council
Office of Hawaiian Affairs

County of Maui

Department of Environmental Management
Fire Department
Planning Department
Police Department
Department of Public Works
Department of Parks and Recreation
Department of Transportation
Department of Water Supply

Other

Alu Like, Inc.
Maui Electric Company, Ltd.

PREFACE

This Draft Environmental Assessment was prepared pursuant to Chapter 343, Hawaii Revised Statutes (HRS), and Title 11, Chapter 200, Hawaii Administrative Rules (HAR), State of Hawaii Department of Health, as well as 24 Code of Federal Regulations Part 58 regarding the U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant (CDBG) programs.

The County of Maui, Office of the Mayor through the CDBG program has issued a grant to the Lanai Community Health Center, a non-profit agency, to plan and design, and potentially to construct, the Lanai Community Health Center. CDBG is a Federal program of HUD and serves as the principal Federal program providing grants to state and local governments to devise innovative and constructive approaches to improve the physical, economic and social conditions in their communities which will benefit persons of low and moderate income. State of Hawaii funds will be used for operation of the Lanai Community Health Center.

Chapter 343, HRS, as amended, Environmental Impact Statements, requires that a government agency or a private developer proposing to undertake a project consider the potential environmental impacts of the proposed project by preparing an assessment. Use of public funds for a project is among the criteria set forth in Chapter 343, HRS which requires preparation of an environmental assessment. The accepting agency is the Office of the Mayor, County of Maui in conjunction with the use of federal and county funds for the Health Center project.

CDBG will issue a separate Environmental Assessment to meet their Federal environmental documentation rules and procedures. Relevant issues for that document are included in this Environmental Assessment.

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1. PROJECT LOCATION

1.1 Project Location

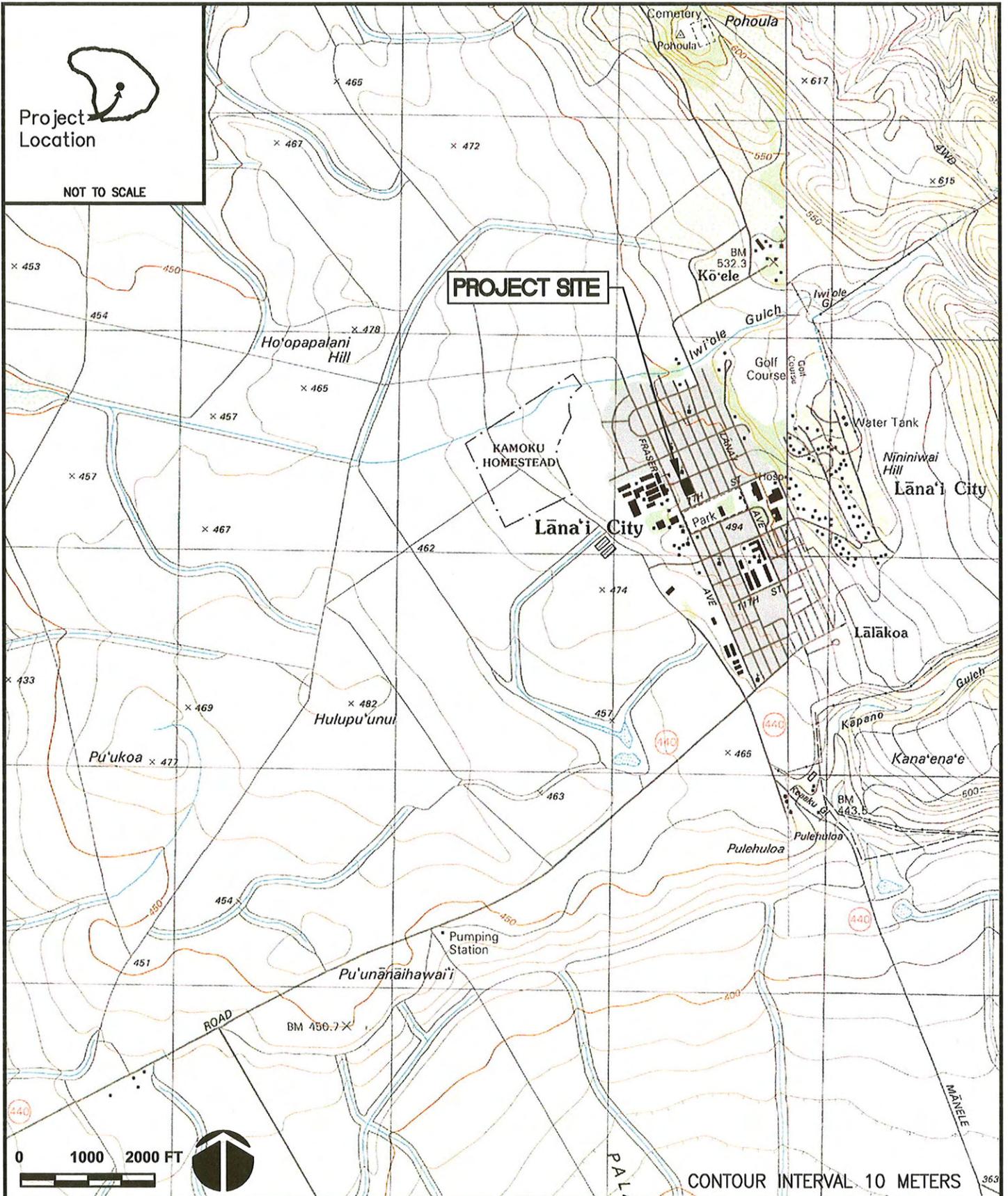
The Lanai Community Health Center project site is located in Lanai City, Lanai west of Dole Park on a parcel (Tax Map Key: 4-9-006:011) bounded by Houston Street on the north, Seventh Street on the east, Gay Street on the south, and Sixth Street on the west and occupies an area of approximately 42,857 square feet, or about 0.98 acres. The Lanai Community Health Center will use approximately 25,067.07 square feet (about 0.575 acres) of the western portion of the parcel for the new facility under a lease agreement with Castle & Cooke Resorts LLC which will retain ownership of the parcel. The Lanai Community Health Center will have an option to purchase the land. Figure 1.1 shows the project location map. Figure 1.2 shows the project site map. Figure 1.3 shows the tax map.

1.2 Existing Conditions and Surrounding Uses

In 1923-1924, the project site was cleared for the construction of plantation houses built by construction crews led by contractor Kikuichi Honda (1923). In 1965, the project site was part of the last large scale residential construction project that was undertaken by Hawaiian Pineapple Company under the auspices of a subsidiary called Plantation Housing, Ltd. At that time, the project site was cleared of the plantation homes and construction included three dormitories buildings which were single-pile in depth with side facing gable roofs, plywood panel and batten exterior finishes, with louvered windows and solid core wood doors. Currently, two of the buildings have been abandoned with a portion of the third building serving as the current Lanai Community Health Center administration office and the other portion as the Lanai Art Center Activity room. These three existing buildings will be removed to construct the new facility. Figure 1.4 shows the project site photographs.

The eastern portion of the parcel along Seventh Street contains existing facilities occupied by the Lanai Art Center and Maui Community College, which will remain with no changes.

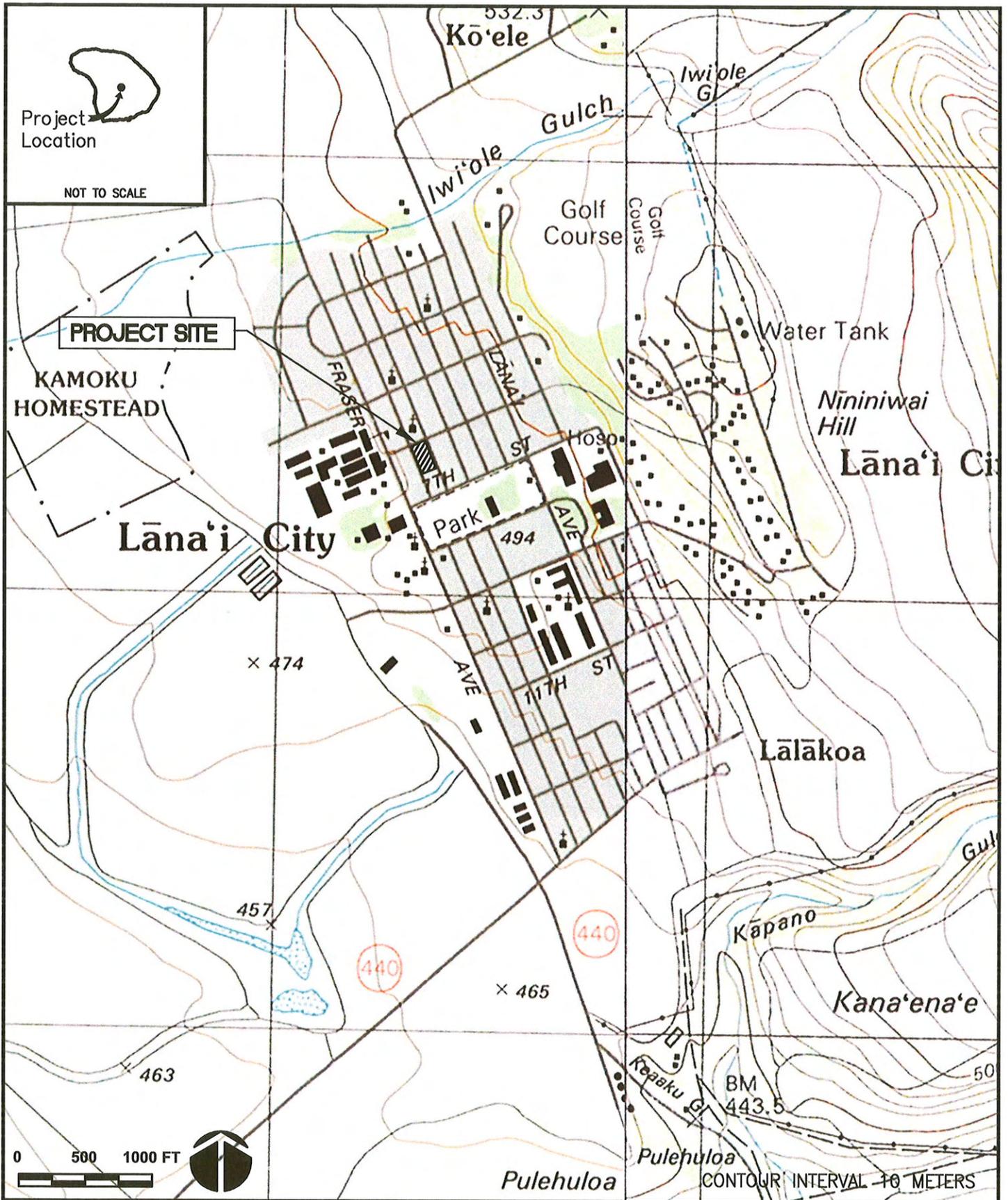
Sixth Street, Houston Street, and Gay Street all carry two travel lanes, one in each direction. The posted speed limit on Sixth Street is 20 miles per hour. One of the abandoned dormitories has two access driveways onto Sixth Street. The other



Lanai Community Health Center
Lanai City, Lanai, Hawaii CBDG Project No. 08-04

PROJECT LOCATION MAP

FIGURE
1.1



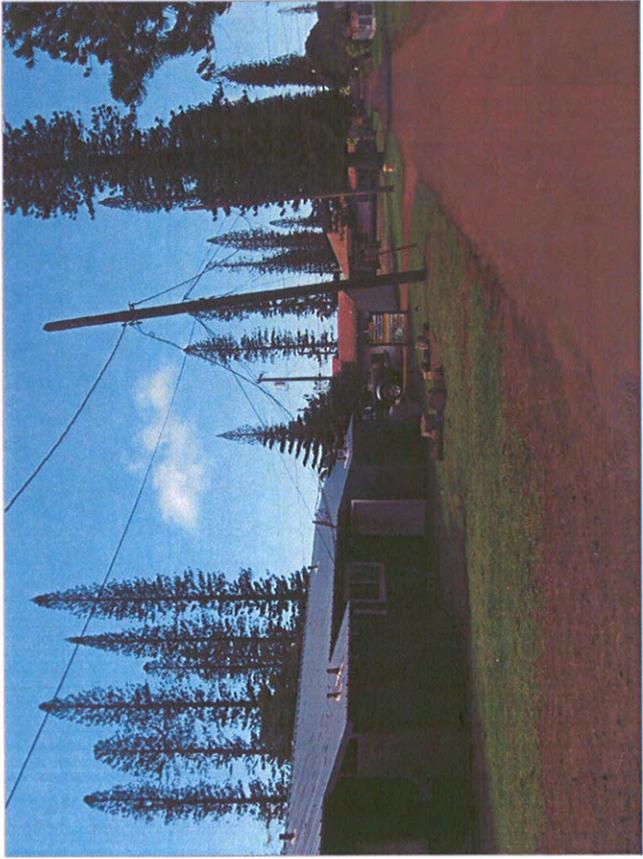
Lanai Community Health Center
Lanai City, Lanai, Hawaii CBDG Project No. 08-04

PROJECT SITE MAP

FIGURE
1.2



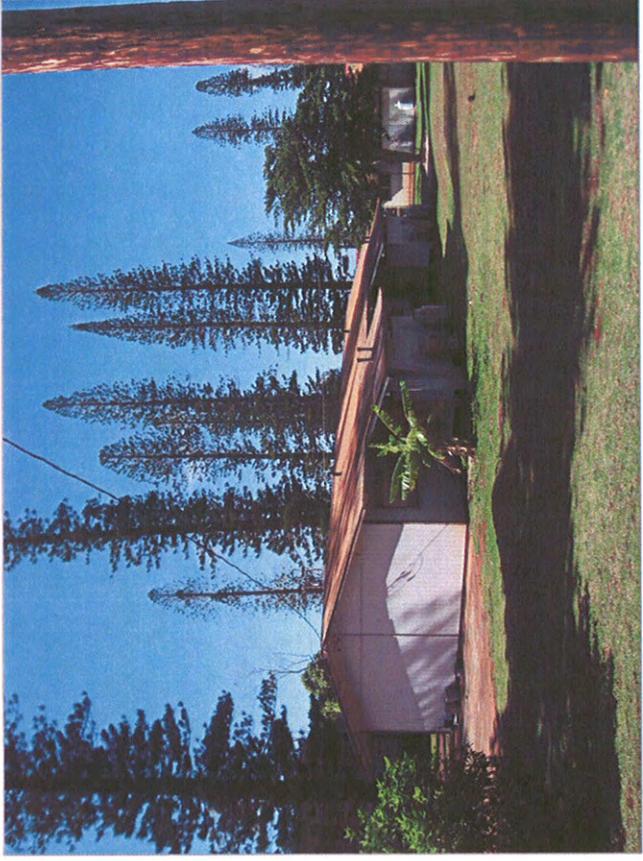
Existing Lanai Community Health Center on Lauhala Place



Existing Lanai Community Health Center View administration building



Sixth Street looking south - new Health Center site on left



Existing dormitory building on Sixth Street

Figure 1.4 Project Site Photographs

abandoned dormitory has direct access to Gay Street. The Lanai Community Health Center administration office has access onto Houston Street.

The portions of the three streets adjacent project site, Sixth, Houston, and Gay, do not have curbs and sidewalks. With some exceptions, this condition prevails on most of the streets in Lanai City.

The topographic survey of the project site shows Houston Street on the north lies at an elevation of about 1,610 feet mean sea level (msl) and Gay Street on the south lies at about 1,608 feet msl, or about 2 feet lower than Houston Street.

Neighboring uses include single family residences to the west and business/commercial uses to the north and east. A modern two-story multi-family complex is located on the south. Commercial buildings in the area are all one story, generally small in scale, and were constructed during the planned development of Lanai City as a plantation town for the Hawaiian (later Dole) Pineapple Company.

Dole Park, located to the east of the project site, occupies approximately 6 acres and has mature pine trees along the perimeter. The Park establishes this area of Lanai City as the town center.

1.3 Lanai City Business Country Town Historic District Nomination

In January 2009, the County of Maui Planning Department and the State of Hawaii Department of Land and Natural Resources State Historic Preservation Division issued a Draft National Register of Historic Places Registration Form for the Lanai City Business Country Town historic district, a 17 block area located in the center of Lanai City. The Draft National Register nomination is still under review. Figure 1.5 shows the Proposed Hawaii Register of Historic Places Lanai City Business Country Town Historic District.

The Lanai Community Health Center project site is located on the western edge of the Lanai City Business Country Town (BCT) District. According to the Draft National Register nomination form, Lanai City was the first planned community in the Territory of Hawaii and a majority of it was built from 1923-1929 by Japanese contractors who had been hired by the Hawaiian Pineapple Company. The district encompasses 9.77 acres, less than one percent of the area of the original town plat of 232 acres, and contains a

group of buildings which form the commercial core of the last intact plantation town in Maui County, and one of the last in the State of Hawaii. Designed by engineer David E. Root, the Lanai City BCT historic district is the last extant example of "Garden City" and "Village" planning standards remaining in Maui County and is one of only two remaining in the State of Hawai'i. The other example is Hickam Field, Oahu which was designed by architects and engineers of the Quartermaster Corps and built from 1935-1940.

The Lanai City BCT district includes dwellings which housed plantation workers, buildings which contained the island's early businesses and institutions, and former government buildings which are significant to the history of Maui County. The latter also functioned as the sites for temporary internment of a number of Japanese inhabitants of the town during World War II before they were sent to Sand Island on Oahu and then transferred to the U.S. mainland. Japanese from the outer islands appear to have been sent directly to this location and not to other internment sites on Oahu.

The buildings of the Lanai City BCT district comprise the physical remnants of the Lanai's unique early 20th Century history of commerce, industry, government, and labor relations which are significant to Maui County and to the State of Hawaii. At one time, the district was the home of some 3,000 former plantation workers and their families. It remains a home to their descendants still residing on Lanai.

The Lanai Community Health Center project site is located on the southwestern edge of the historic district. The Draft National Register form identifies the three existing buildings (334 Sixth Street; 622 Gay Street, and 624 Houston Street) on the project site as non-contributing buildings, which were constructed in 1965, or 45 years ago, as among a total of 9 dormitories built by Plantation Housing Ltd.

The former dormitory buildings are single-pile in depth with side facing gable roofs, feature plywood panel and batten, tongue and groove exterior finishes, and are fenestrated with louvered windows and solid core wood doors. Each building consisted of three living units with each unit consisting of three rooms, a kitchen/living area, one bedroom, and bathroom with sink, toilet, and shower. The kitchen stoves were electric and propane gas supplied from tanks was used for hot water heating. Each building is about 72 feet long by 24 feet wide, or approximately 1,728 square feet.

2. PROJECT DESCRIPTION

2.1 Background

The Lanai Community Health Center (LCHC), a Federally Qualified Health Center (FQHC) since September 2007, mission is to care for the community of Lanai. The Health Center takes care of the community with a focus on physical, mental, emotional, intellectual and spiritual welfare and by enriching and empowering lives to help build healthy families in a supportive environment.

The Health Center carries out its mission in three ways:

1. Directly providing health services (primary care, dental, and behavioral health) to the community;
2. Providing activities and services through partnerships with local organizations as well as the many off-island organizations reaching out to Lanai by serving as coordinator, advocate, resource, initiator, and convener; and
3. Working collaboratively to provide space for partners who can provide needed services for Lanai.

Due to the difficulty of locating providers on Lanai, the Health Center employs Honolulu and Neighbor Island nurse practitioners, a Honolulu Psychology fellow, a Maui nutritionist and a Honolulu registered dietitian to come to Lanai to provide medical services to Health Center patients. To maximize effort and minimize cost, each nurse practitioner is scheduled for at least two days at a time. The Health Center currently rents a house for their overnight stay. The nurse practitioners also provide telephone coverage on a 24-hour basis to handle patient calls when the Health Center is closed.

The Health Center is currently governed by a 10 member Board of Directors who each has substantial experience developing and administering appropriate systems necessary for effective health and social services.

2.2 Purpose and Need

The existing Lanai Community Health Center consists of two sites in Lanai City which are about 0.6 miles apart. The existing Health Center clinical facility is located on Lauhala Place in a converted former one-story plantation home north of Dole Park. The existing Health Center contains a reception area and three examination/counseling rooms for clinical services or confidential counseling. The converted home, probably

constructed in the 1920's, encompasses about 900 square feet and was not designed to provide medical services and lacks sufficient space and supporting facilities to properly serve the residents of Lanai. The administrative office on Houston Street is a converted dormitory.

The purpose of the Lanai Community Health Center project is to construct a replacement health care facility designed for current medical-dental practices and procedures. The facility will be designed with sufficient space and supporting facilities to treat patients for primary medical care, dental care, behavioral health services, prenatal, family planning, nutrition and preventive health education services. These services will be open to the low- and moderate-income, uninsured, and underserved residents of Lanai.

The Health Center target population consists of those with incomes below 200% of the Federal poverty level, currently nearly 40% of the island's population, or 1,288 individuals. No one is turned away by the Health Center due to lack of funds for necessary care. The Health Center serves individuals of all ages, ethnicity, gender, and residency - old timers, part-timers, and newcomers.

2.3 Proposed Improvements

2.3.1 Site Improvements

The project site improvements will include two access driveways, two parking areas, walkways, emergency generator and landscaping constructed for the Health Center facility. Accessible ramps will be provided from the visitor parking area to the main front entrance of the Health Center which will face west to Sixth Street. A pedestrian walkway along the west side of the building will connect the parking area to the main front entrance. Figure 2.1 at the end of this section shows the project site plan.

The main public access to the Health Center facility will be on the west from Sixth Street which will have a two-way 24-foot wide driveway leading to a 12 stall at grade parking lot for visitors. A 6 stall at grade parking lot with a loading zone for staff personnel/visitors will be located east of the new building and will use two-way 24-foot wide driveway access from Gay Street. The driveways and parking areas will be constructed of asphaltic concrete pavement. The stalls will be 18 feet deep by 8-1/2 feet wide with 24 feet wide aisles. Wheel stops will be provided at all stalls. Accessible stalls will comply

with handicap parking requirements, including the required pavement slopes, and signage. Landscaping will be provided to screen the parking from the street and canopy trees will also be used to shade and screen the parking. See Figure 2.1.

An emergency generator will be placed on the northeastern corner of the project site. The generator will provide electrical power for emergency lighting, the mini laboratory and computers during power outages.

The County of Maui Code parking requirement is 1 space per 300 square feet for a medical facility. The total parking required is 18 spaces based on a 6,800–square foot building, exclusive of circulation areas. It is expected that many of the patients, as well as staff, would walk to the Health Center. Public parking along Dole Park is within 200 feet from the eastern end of the project site.

The design plans show no curbs or sidewalks will be constructed along the three streets (Sixth, Houston, and Gay) adjacent to the project site. Also, there will be no changes to the existing street plan. This will be consistent with the existing conditions on these streets and April 1997 County of Maui Lanai City Design Guidelines.

The site plan shows the front entry porch on the west side of the building will be set back about 41 feet from the property line on Sixth Street. The north and south walls of the building are set back approximately 11 feet from property lines on Houston and Gay Streets. Landscaping will be planted on the west, north and south sides of the Health Center building. These setbacks and the landscaping plantings follow the Lanai City Design Guidelines.

2.3.2 Health Center Building

The replacement Lanai Community Health Center will contain about 6,800 square feet of space in a “C” shaped single story structure which contain spaces for medical examination rooms, consultation rooms, a mini laboratory, and offices on one side; and dental specialty/examination rooms, X-ray area, mini laboratory and offices on the other. The facility will also contain space for administrative functions, conference and reception rooms, staff lounge, storage, and an activity multipurpose room which can be used for flu clinics, women, infants and children (WIC) program activities, health education events, Lanai Art Center activities and general activities. Figure 2.2 at the end of this section shows the floor plan.

The main entry to the building will be on the west facing Sixth Street. A handicap accessible ramp and stairway lead to the waiting room, which will have an open truss or open vaulted ceiling with ceiling fans (no air conditioning). A covered lanai at the entrance will also provide additional waiting space. The waiting room will have a secondary entrance from the courtyard that is adjacent to the eastern or rear parking lot. The reception area is centrally located and open to the waiting room and adjacent conference rooms.

The south wing (along Gay Street) will contain the medical examination rooms, procedure room, laboratories, provider offices, and other medical support spaces. The north wing (along Houston Street) will contain the dental specialty rooms, administration area, and an activity/multipurpose room. The waiting room, north and south wings will open to lanai that overlooks a landscaped courtyard.

The medical and dental/specialty departments will share the waiting, reception and support areas and will each have a medical assistant staging area and mini laboratory to share with their examination rooms.

The activity/multipurpose room will be located at the end of the north wing and will have a separate exterior entrance. The activity/multipurpose room will not have an interior connection to the remainder of the north wing. The room will be used for a variety of uses related to the Health Center, including for teaching, demonstrations, women, infant and children programs, and art therapy programs.

2.3.3 Design Features

Lanai City, developed in the 1920's, is still an intact plantation town, not found on any of the other Hawaiian Islands. Most buildings in the proposed historic Business Country Town (BCT) district are plantation vernacular dwellings. The Health Center will be designed in keeping with the plantation vernacular and the April 1997 County of Maui Lanai City Community Design Guidelines.

Some of the architectural vocabulary for the Health Center is a hipped roof with 2-3 feet deep overhangs, raised floor, lanais on at least two facades for outdoor seating, and wood framed double hung windows.

The preliminary design shows the building will have exterior simulated wood or wooden siding with wooden posts and railings, wood window frames and muntins, and standing seam or corrugated metal roofing. The highest point on the roof will be about 25 feet above grade. The facility will be designed to be compatible with the "plantation home style" and existing buildings on the surrounding parcels and town buildings. The entire west side will be an open lanai and serve as the main entrance. Figures 2.3 and 2.4 at the end of this section show the building elevations.

2.3.4 Site Infrastructure

There are existing Lanai Water Company water mains running along Houston, Sixth and Gay Street. There are four 5/8-inch existing water meters servicing the site along Houston Street as well as four 5/8-inch existing water meters servicing the project site along Gay Street. The existing water meter servicing will be utilized of the Health Center.

Based on the fixture count, the anticipated water demand for the Health Center will be approximately 1,600 gallons per day.

There are four existing fire hydrants around the project site for fire protection. These hydrants should be adequate for fire protection.

Potable water and fire protection laterals will be connected to Lanai Water Company lines. The location of the connections will be determined during the design of the facility.

There is an existing 8-inch sewer main along Houston Street, an existing 8-inch sewer main along Sixth Street, and an existing 8-inch sewer main along Gay Street. Where possible the existing sewer laterals on the project site will be utilized for sewer services to the Health Center. The sewer system within the building would likely utilize a gravity sewer system.

Based on the anticipated water demand for the Health Center, the sewer demand will be approximately 1,600 gallons per day.

The wastewater will be routed to the Lanai Wastewater Reclamation Facility (LWRF) for treatment and disposal of the effluent. The LWRF is currently owned and operated by the County of Maui.

Currently, drainage sheet flows from Houston Street to Gay Street in a south-westerly direction to the corner of Gay and Sixth Streets. Other than surface runoff and roadway swales there are no existing drainage systems around the project site. The design drawings show the intent is to maintain the existing drainage patterns and drainage discharge points off the project site. Drainage will generally sheet flow from Houston Street towards Gay Street. The increased drainage from the project site will be detained on-site, utilizing landscaped areas along Gay Street as detention basins and swales within the site. The swales and basins would also function as bio-swales, which will capture the runoff and allow percolation to the subsurface. Use of bio-swales and basins would act to retain surface flows within the project site.

2.3.5 Leadership in Energy & Environmental Design

Leadership in Energy & Environmental Design (LEED) is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

Developed by the US Green Building Council (USGBC), LEED provides building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

The Health Center project will be submitted to the USGBC for LEED certification under Building Design & Construction. A primary goal of the Health Center project is to create a healthy environment for patients and staff. Sustainable design practices such as minimizing use of potable water through low flow plumbing fixtures, solar water heating, landscaping with native and adapted plantings, storm water control through bioswales and underground retention system, use of Forest Stewardship Council Certified wood, promoting use of alternative transportation, using materials with recycled content, using regional materials, maximizing daylight and views, all lighting on sensor control, naturally ventilated rooms where appropriate, use of low emitting materials such as

paints, adhesives, sealants, individual air condition controls for thermal comfort, enhanced building commissioning, green housekeeping products, and purchasing of EnergyStar medical, dental and office equipment, are some of the practices to be implemented for the Health Center.

2.4 Health Center Services

Services currently include primary care and preventive health services, communicable disease testing, dental, mental health services, pre-natal services, counseling and treatment, insurance eligibility, and medical "enabling" services, such as outreach, case management, and language interpretation. The Health Center has also implemented a contract with a 340B pharmacy that provides Center patients with their prescribed medications at very low cost, especially important to diabetes mellitus and cardiovascular disease patients due to the many and continuing medicines required to treat these diseases.

The Health Center has taken a leadership role in the provision of Women, Infants and Children (WIC) services for the residents of Lanai. The WIC program provides needed nutritional food supplements for pregnant women, newborns, post-partum mothers and children under the age of 5 in a culturally and linguistically appropriate manner for eligible clients in Lanai. WIC services are provided six times a month, and include:

- Nutritional education and counseling;
- Breastfeeding instruction and support; and
- Food instrument issuance.

Other nutritional services for WIC clients include:

- Weight control reduction
- Assessment and counseling to reduce the risks of diabetes, high blood pressure, and heart disease.

WIC clients will also receive comprehensive assessment and referrals for other health related issues to other community providers, including:

- Domestic violence
- Substance abuse
- Smoking cessation
- Transport services within the Health Center service area
- Translation assistance

WIC clients are income eligible pregnant, breastfeeding and non-breastfeeding post partum women, infants and children under five years of age who are found to be at nutritional risk. The Health Center program currently is serving approximately 100 clients per month.

2.5 Health Center Operations

The Health Center will have a total of 23 full time and part time employees who will be employed by the Center. Generally, on a daily basis, a total of 10 employees will be at the Health Center, including nurse practitioners, medical assistants, other medical/dental specialists, and related administrative personnel. The Health Center has developed a network of nurse practitioners, a nutritionist and a registered dietitian, and psychologists and a dentist to provide their services. The employees will include Lanai residents and those who will commute from other off-Lanai islands.

The Health Center anticipates about 8,500 patient visits per years, or approximately 20 to 30 patient visits per day.

2.6 Project Hours

The Health Center will be open 6 days per week, or total of 56.5 hours per week, with the following hours:

Monday-Wednesday-Friday	9:00 am to 7:30 pm;	10.5 hours per day
Tuesday-Thursday	8:00 am to 5:00 pm	9 hours per day
Saturday	8:00 am to 3:00 pm	7 hours per day

2.7 Project Schedule and Cost

Construction of the Health Center would start in early 2011 and require approximately 9-12 months to complete the construction.

The preliminary construction cost for the Health Center is approximately \$4.8 million.



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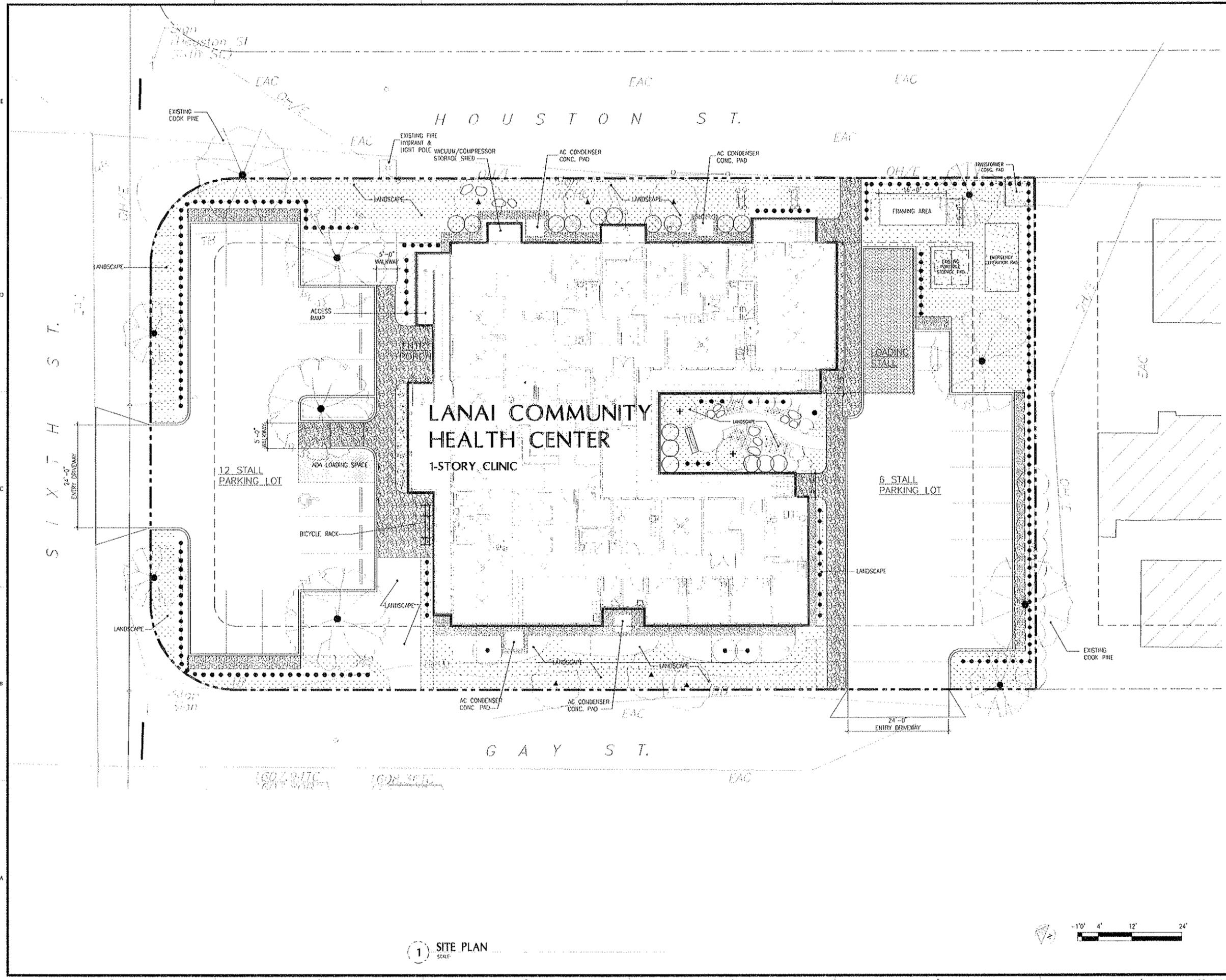
LANAI COMMUNITY HEALTH CENTER
 624-A HOUSTON STREET
 LANAI CITY, HAWAII

SITE PLAN
 N.T.S.

This work was prepared by the architect under the supervision and control of the architect. The architect is not responsible for the accuracy of the information or opinions of third parties or the laws, regulations, codes, ordinances, engineering standards, specifications, and other documents referred to herein.

DATE: 02/10/10
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 PROJECT NO. 5833.001
 SHEET NO. AS-101 SF
 DATE: MAR, 02, 2010

FIGURE 2.1



1 SITE PLAN
 SCALE



NAME: 082234.dwg DATE: NOV 10, 2003



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LANAI COMMUNITY HEALTH CENTER

624-A HOUSTON STREET
LANAI CITY, HAWAII

FLOOR PLAN

1/4"=1'-0"

This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

Signature: _____
Title: _____
Date: _____

GENERAL NOTES:

1. FOR INTERIOR ELEVATIONS, SEE SHEET 401, 402, & 403
2. FOR WALL PARTITION, SEE SH. 501
3. FOR DOOR/WINDOW TYPES AND WINDOW SCHED. SEE SH. 601
3. FOR ROOM FINISH SCHEDULE, SEE SH. 604
4. FOR MATERIAL AND COLOR FINISHES, SEE SH. 605

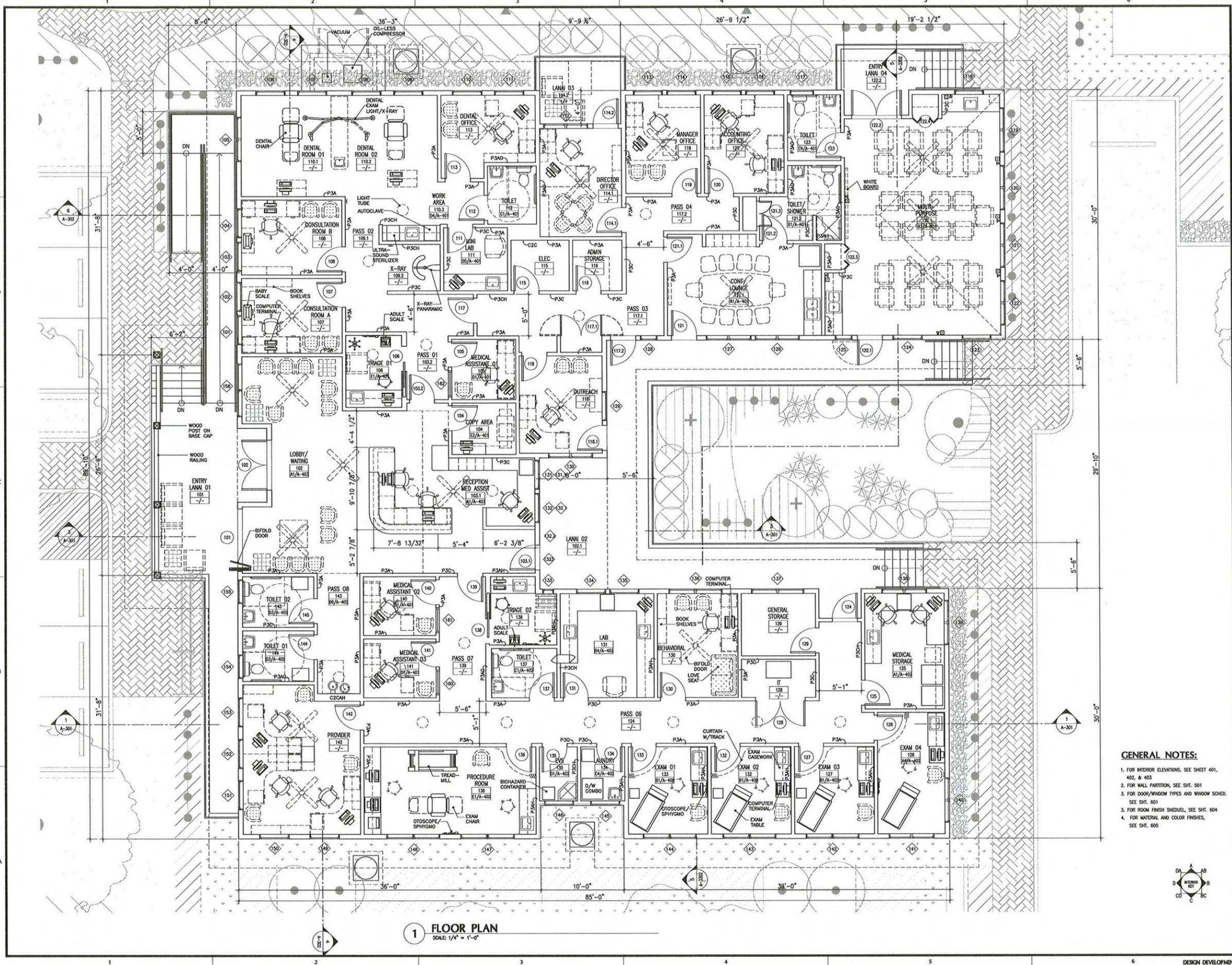
PROJECT NO:	5933.001
CAD DWG FILE:	A-101
DRAWN BY:	
DATE:	MAR. 02, 2010
DRAWING NO:	

FIGURE 2.2

of _____ Sheets



1 FLOOR PLAN
SCALE: 1/4" = 1'-0"



NAME: 042234.dwg DATE: NOV 10, 2003

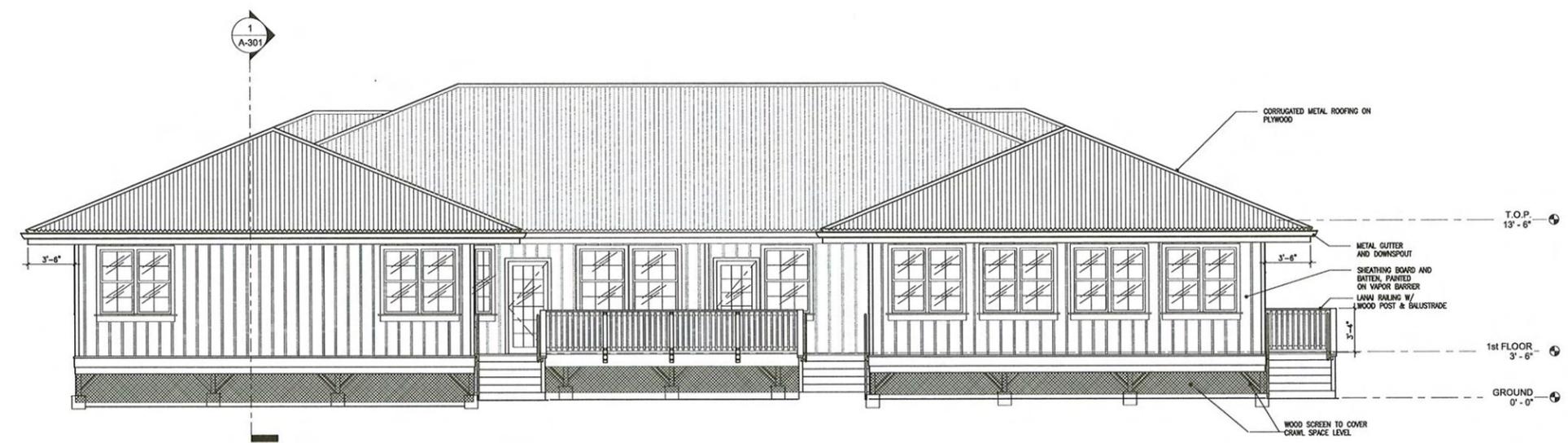


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**LANAI
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624-A HOUSTON STREET
LANAI CITY, HAWAII



1 WEST ELEVATION
SCALE: 1/4" = 1'-0"



2 EAST ELEVATION
SCALE: 1/4" = 1'-0"

ELEVATIONS
1/4"=1'-0"

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Signature: _____
Date: _____

PROJECT NO: 5933.001
CAD DWG FILE: A-201
DRAWN BY:
DATE: MAR. 02, 2010
DRAWING NO

FIGURE 2.3

of Sheets



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**LANAI
COMMUNITY
HEALTH CENTER**
624-A HOUSTON STREET
LANAI CITY, HAWAII

ELEVATIONS

1/4"=1'-0"

This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1, Definitions of the Hawaii Administrative Rules "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

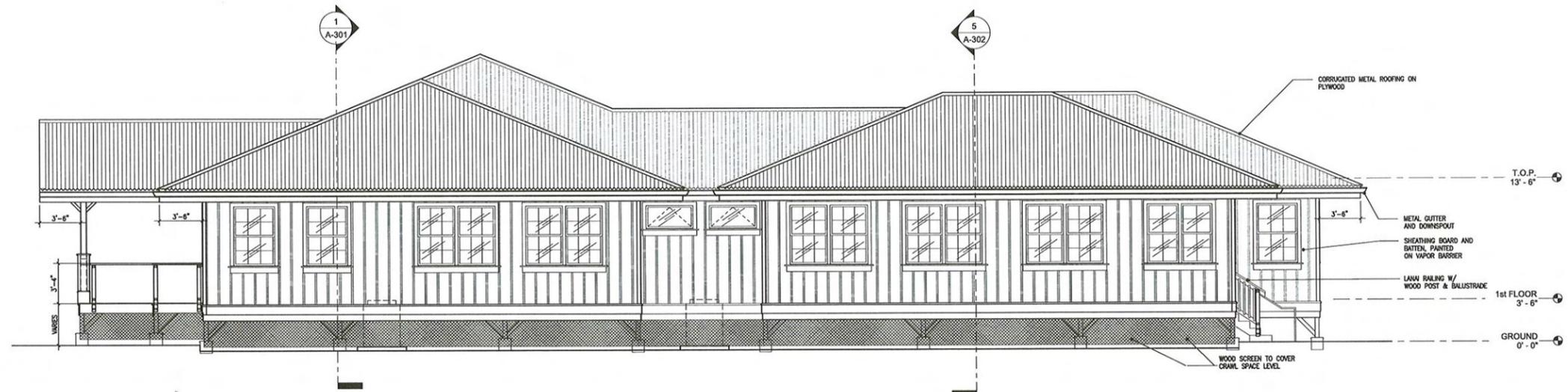
Signature: _____ Date: _____
NOTE: Contractor to check and verify all dimensions at job before proceeding with work.

PROJECT NO: 5933.001
CAD DWG FILE: A-202
DRAWN BY: _____
DATE: MAR. 02, 2010
DRAWING NO

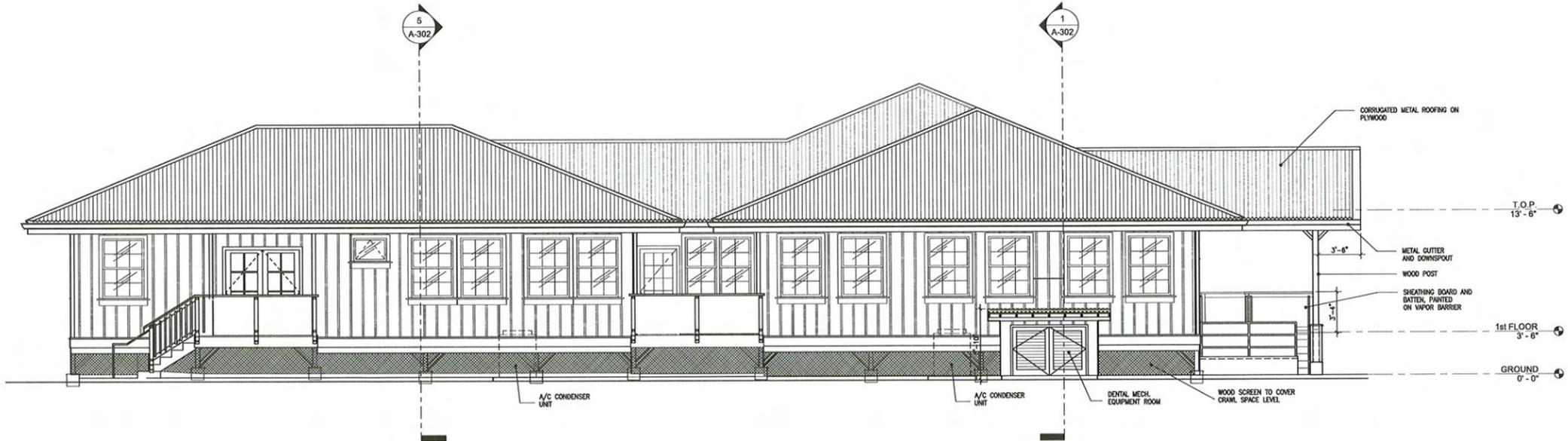
FIGURE 2.4

of _____ Sheets

NAME: 082214.dwg DATE: NOV 10, 2003



1 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



2 NORTH ELEVATION
SCALE: 1/4" = 1'-0"

3. DESCRIPTION of EXISTING ENVIRONMENT, IMPACTS and MITIGATION MEASURES

3.1 Geology and Topography

Lanai is a shield volcano built by eruptions at the summit and along three rift zones more than 1.20 to 1.46 million years ago. The principal rift zone trends northwestward as a broad ridge, and is responsible for the conspicuous elongation of the island in that direction. A less conspicuous bulge on the southern side of the island is a result of building on the southwest rift zone. The summit of the shield collapsed to form a caldera from which a shallow graben, bordered by an echelon of step faults, extends south-southeast toward Manele Bay. Numerous dikes exposed in the sea cliff indicate that this Manele graben lies along another rift zone.

The caldera was largely, but not completely filled by lava flows, and the present Palawai Basin is a remnant of the caldera. Just to the west, Miki Basin (with an average diameter of about 0.9 miles) is a nearly filled pit crater. The top of the ridge between them is about 140 feet above the floor of the Palawai Basin. On the south side, the floor of Palawai Basin merges with that of the Manele graben, through which the last lava flows in the caldera overflowed onto the outer slope of the volcano. On the northeastern side, Palawai Basin is bordered by a steep slope about 492 feet high, beyond which lies a nearly level bench of about 0.9 miles wide. The thick, massive character of the lava flows in this bench indicates that it is a part of the floor of the filled caldera. Beyond the bench, another steep slope rises to Lanaihale Summit (3,316 feet altitude). Southwest of the Lanaihale Summit, at an elevation of 1,000 to 2,000 feet, is the Central Plateau of Lanai.

Impacts and Mitigation Measures

No significant impact on the geology or overall topography of the project site is anticipated during the construction of the Health Center facilities. Construction of the Health Center project will require grading activities and excavation for building foundations and utilities. This will disturb surface and subsurface soils and displace the soils with on-grade slab foundation and footings. However, this disturbance will typically be to depths of 3 to 3½ feet or less which will not adversely affect the soils and geology of the project site and surrounding area. Graded and excavated areas will be built over, paved over, or backfilled and landscaped. To achieve required elevations for proper drainage, grading within the project slight will slightly alter the existing topography.

Over the years various codes have been developed to provide standards related to design of structures to prevent damage during earthquake events. These codes now include international codes addressing the design and installation of building systems through requirements emphasizing performance. This has resulted in issuance the *International Building Code* which is designed to meet these needs through model code regulations that safeguard the public health and safety in all communities, large and small. This comprehensive building code establishes minimum regulations for building systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new building designs.

The first draft of the *International Building Code (IBC)* was prepared in 1997. Since then, there have been revisions to the IBC. The County of Maui currently uses the 2006 version of the IBC.

The IBC states, every structure, and portion thereof, shall as a minimum be designed and constructed to resist the effects of earthquake motions and assigned a Seismic Design Category. Seismic design categories are used to determine permissible structural systems, limitations on height and irregularity, those components of the structure that must be designed for seismic resistance, and the types of lateral force analysis that must be performed.

Each structure shall be assigned a seismic use group and a corresponding occupancy importance factor. The Health Center would be classified as Seismic Use Group II defined as structures the failure of which would result in a substantial public hazard due to occupancy or use.

The Lanai Health Center will be designed and constructed to meet the requirements of latest version of the IBC. This will ensure that Lanai Health Center can meet the seismic loadings established by the IBC and that the geological conditions at the project site do not adversely affect the building and facilities.

3.2 Soils

The *Soil Survey of Islands of Kauai, Oahu, Maui, Lanai, and Molokai* prepared by the U.S. Department of Agriculture Soil Conservation Service (now Natural Resources Conservation Service) shows the soils on the project site consist of solely of Waihuna

clay, 0 to 3 percent slopes (WoA), the most extensive soil in the Waihuna series. This soil consists of well drained and moderately well drained soils on alluvial fans and in depressions on the Islands of Lanai and Molokai. These soils formed in old, fine-textured alluvium. They are nearly level to moderately steep. Elevations are mainly between 1,000 and 2,000 feet, but they range from 400 to 2,000 feet.

In a representative profile the surface layer, about 18 inches thick, is dark-brown, very sticky and very plastic clay. The next layer, 40 to more than 50 inches thick is dark-brown, very sticky and very plastic clay and silty clay that has subangular blocky structure. Permeability is moderately slow. Runoff is slow and the erosion hazard is no more than slight. The available water capacity is about 1.8 inches per foot of soil.

Impacts and Mitigation Measures

Excavation and grading activities associated with construction at the project site will be regulated by the County of Maui's grading ordinance. Typical mitigation measures include use of silt fences and sediment rolls around the perimeter of the project site, appropriate stockpiling of materials on-site to prevent runoff; and, establishing landscaping as early as possible on completed areas. These measures affect a relatively small area of soil disturbance will minimize the potential for siltation of drainage facilities.

No significant impacts on soils at the project site are anticipated with the construction and operation of the Health Center project.

3.3 Slope and Erosion

As previously discussed, soils on the project site show permeability is moderately slow. Runoff is slow and the erosion hazard is no more than slight. The topographic survey of the project site shows Houston Street on the north lies at an elevation of about 1610 feet mean sea level (msl) and Gay Street on the south lies at about 1608 feet msl, or about 2 feet lower than Houston Street.

Impacts and Mitigation Measure

The relatively slight slope or gradient (2 feet) of the project site shows erosion can be controlled during construction and after development of the Health Center. During construction, erosion at the project site will be controlled through the use of silt fences

and sediment rolls around the perimeter. This will act to contain surface flows and minimize erosion at off site areas.

The design drawings show the intent is to maintain the existing drainage patterns and drainage discharge points off the project site. The Health Center drainage will generally sheet flow from Houston Street towards Gay Street. The increased drainage from the project site will be detained on-site, utilizing landscaped areas along Gay Street as detention basins and swales within the site. The swales and basins would also function as bio-swales which will capture the runoff and allow percolation to the subsurface. Use of bio-swales and basins would act to retain surface flows within the project site. These measures will minimize erosion at surrounding areas.

3.4 Hydrology

3.4.1 Surface Waters

According to the U.S. Department of the Interior Geological Survey (USGS) topographic map, there are no natural surface water resources traversing the project site. In addition, the project site and surrounding areas have been cleared and improved for residential and other urban uses and show no evidence of a wetlands.

The closest streams are Iwiolo/Paliamano Gulch located approximately 0.3 miles to the north and Kapano Gulch Stream located about 0.72 miles to the south. In addition, irrigation channels are located approximately 0.25 miles west and southwest of the project site.

Impacts and Mitigation Measures

There are no natural surface water sources on the project site. During construction, silt fences will be erected so there will be no discharges from the project site directed to waters of the U.S. or waters of the State of Hawaii. Further, as the project site and surrounding areas are not identified as wetlands, there would be no affect on wetlands.

No significant impacts to surface waters located near in the vicinity of the project site are anticipated as a result of the Health Center project. Storm runoff from the project site during site preparation will be controlled in compliance with Chapter 20.08 of the Maui County Code regarding Soil Erosion and Sedimentation Control. Grading operations will also comply with HAR, Title 11, Chapter 54 and 55 regarding Water Quality Standards

and Water Pollution Control, respectively. Temporary erosion control measures will be used during construction to prevent runoff to nearby areas. These mitigation measures include placement of a silt fence around the perimeter of the construction area to prevent surface runoff into adjacent areas. These measures will contain surface flows within the project site during the construction period. In addition, the contract specifications state that the contractor needs to implement best management practices during the construction to minimize runoff from the project site.

The area of soil disturbance within the project site will be less than 1-acre. Discharge of stormwater from the project site is controlled by National Pollutant Discharge Elimination System (NPDES) permit administered by the State of Hawaii Department of Health.

Although the closest stream to the project site is Iwiolo/Paliamano Gulch located approximately 0.3 miles to the north, topographic maps show the area around Lanai City slopes to the southwest. A tributary of Iwiolo/Paliamano Gulch is located about 6,000 feet (1.13 miles) southwest at an elevation of approximately 1,510 feet msl, or about 100 below the elevation of the project site.

The inland streams on Lanai are classified as Class 2 Inland on the Water Quality Standards Map of the Islands of Molokai, Lanai, and Kahoolawe, October 1967 issued by the Office of Environmental Planning, Hawaii Department of Health. At this time, a NPDES permit does not appear warranted.

Dewatering and hydrotesting are controlled by separate NPDES permits, should they be needed.

3.4.2 Groundwater

The Health Center project site overlies the Central Aquifer Sector and is within the Leeward Aquifer System (50102). The total sustainable yield of the Central Aquifer Sector is 6 million gallons per day (MGD) and 3 MGD for the Leeward Aquifer (CWRM Map, 2008). Groundwater in the Leeward aquifer is high level fresh water in dike compartments. Based on its groundwater status code, the aquifer is currently used as a source of drinking water, irreplaceable and highly vulnerable to contamination (Mink and Lau, 1993).

The project site is located mauka of the underground injection control (UIC) line (DOH Map, 1999). Aquifers mauka of the UIC are considered a drinking water source. The State of Hawaii Department of Health Safe Drinking Water Branch administers the Underground Injection Control (UIC) program which serves to protect the quality of Hawaii's underground sources of drinking water from chemical, physical, radioactive, and biological contamination that could originate from injection well activity.

In addition, the island of Lanai is not designated as a groundwater management area (CWRM Map, 2005).

As part of the pre-assessment consultation for this Draft EA, on March 9, 2010, the County of Maui Department of Water Supply (DWS) indicated that the Lanai Water Company Leeward Well 8 and Windward Well 6 as the water sources for the Health Center project. Appendix A shows the DWS letter.

Impacts and Mitigation Measures

Construction of the Health Center will include trenching for the underground utility lines and excavation for the footing and foundation of the building. The subsurface disturbance for these activities should not extend lower than 3 to 5 feet below the surrounding grade. This should not create significant adverse impacts to groundwater underlying the project site during construction of the facility. Construction activities are not likely to introduce to, nor release materials which could adversely affect groundwater, including groundwater sources for domestic use.

Based on fixture count in the building, the anticipated water demand for the Health Center will be approximately 1,600 gallons per day. This level of usage will not create an adverse impact to the groundwater sources on Lanai.

3.4.3 Coastal Waters

The project site is centrally located on the island of Lanai. The coastal waters surrounding Lanai are classified as "AA marine waters" by the State DOH Administrative Rules, Title 11, Chapter 54 Water Quality Standards. Class AA marine waters are recognized by the State DOH with the objective that "these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions. To the extent practicable, the wilderness character of these areas shall be protected."

According to U.S. Fish & Wildlife Service John H. Chaffee Coastal Barrier Resources System website, Hawaii has no areas within the Coastal Barrier Resources System.

Impacts and Mitigation Measures

During construction, storm runoff has the potential to carry sediment into nearby streams due to erosion of exposed soils. Storm runoff from the project site will be controlled in compliance with the County of Maui's grading and erosion control ordinance and the State of Hawaii Department of Health rules related to NPDES. Excavation and grading activities associated with construction at the project site will be regulated by the County's grading and ordinance. Typical mitigation measures include: silt fences or sediment fiber rolls along the perimeter of the project site; appropriately stockpiling materials on-site to prevent runoff; building over, or establishing landscaping as early as possible on disturbed soils to minimize length of exposure.

The grading and erosion control plans will be submitted to the County of Maui Department of Public Works as part of the building permit approval. The plans will include best management practices (BMPs) such as use of silt fences and sediment fiber rolls around the project site to contain runoff. Since the contractor will employ approved measures to prevent silt runoff from construction areas along with complying with other related permit conditions, impacts on coastal waters and water quality should not be significant.

The project site is located in Lanai City and lies about 24,000 feet (4.5 miles) from the nearest coast line. The coastal waters surrounding Lanai are classified as marine "AA". According to State of Hawaii Department of Health Title 11 Hawaii Administrative Rules Chapter 54 Water Quality Standards class AA waters are that the waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions. Based on the distance of the coast and the measures to control surface runoff, no significant impacts on coastal waters are anticipated as a result of the Health Center project.

3.5 Flood Hazard

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). Community Panel Number 1500030500E (revised September 25, 2009) the project site is within Zone X, "other areas determined to be outside the 0.2% annual chance floodplain" (See Appendix D-1). There are no flood hazards associated

with the Health Center project site. Further, the project site is not located in the area designated as a tsunami evacuation zone.

As part of the pre-assessment consultation for this Draft EA, on February 9, 2010, the State of Hawaii Department of Land and Natural Resources (DLNR) Engineering Division confirmed the project site is located in Zone X and that the Flood Insurance Program does not have any regulations for developments in Zone X. Appendix A shows the DLNR letter.

Impacts and Mitigation Measures

The preliminary plans show the finished floor for the Health Center will be at elevation 1615 feet mean sea level (msl). As previously discussed, the elevations on the project site range from about 1610 msl on the north to approximately 1608 feet msl on the south. Thus, the floor of the building will be about 5 to 6 feet above the elevation of the site. This would ensure surface flows from storm events will not create a flood hazard to the Health Center.

Further, as discussed, drainage on the project site will generally sheet flow from Houston Street towards Gay Street. The increased drainage from the project site will be detained on-site, utilizing landscaped areas along Gay Street as detention basins and swales within the project site. The swales and basins would also function as bio-swales. Based on this, no significant impacts related to flooding are anticipated.

3.6 Flora and Fauna

No Federally protected, threatened or endangered species of plants or animals are known to inhabit the project site or immediate vicinity. Existing flora within the project site includes non native species of pine trees, grass, hibiscus, and weeds generally found in Lanai City.

Vegetation within Lanai City is dominated by plantings of Cook pine trees and Norfolk pine trees. These trees were introduced in the 1920's by naturalist George Munro, when the Palawai Basin began to be cultivated in pineapple and the master plan for housing the pineapple plantation laborers involved the layout for Lanai City (Cultural Surveys Hawaii, April 2010). Most all other vegetation in the region is imported landscape and ornamental, with various non-native plant species.

Faunal species that may be present at the project site include common introduced bird species such as sparrows, doves, mynah, and cardinal; introduced domestic mammals such as dogs, cats, rats, and mice; and common introduced lizards and insect species.

Impacts and Mitigation Measures

Construction of the Health Center project will require removal of the surface vegetation from the project site and grading for construction of the Health Center facility. Removal of the surface vegetation will not create an adverse impact to the flora of the project site. Redevelopment of the project site will replace existing landscaping with new landscaping.

The grasses on the project site does not include habitat normally used by birds. Nor do the grasses produce seeds which would serve as food for birds. Thus, the project site does not serve as a feeding and foraging habitat to attract birds. Thus, loss of vegetation would not adversely affect the bird population in the area of the project site or any USFWS or DLNR listed or candidate threatened or endangered species.

The project site contains no listed or candidate threatened or endangered botanical species as set forth by the USFWS. Thus, construction of the Lanai Health Center will not have an adverse impact to threatened or endangered botanical species.

3.7 Traffic and Parking

The roadway system in Lanai City is a grid layout. Roadways oriented in an east/west direction are generally identified by a numerical designation, while roadways oriented in a north/south direction are identified by place names. The project site is located at bounded by Houston Street, Gay Street, Seventh Street and Sixth Street. Streets are maintained by the County of Maui Department of Public Works and Environmental Management.

The main public access to the new facility will be from Sixth Street which will have two-way driveway leading to a 12 stall parking lot for visitors. A 6 stall parking lot with a loading zone for staff personnel/visitors will be located east of the new building and will use access from Gay Street.

Impacts and Mitigation Measures

Traffic impacts related to construction activities will occur while equipment and materials are moved to the project site. However, this traffic will be short-term occurring during the 9 to 12 month construction period. This should not create long-term adverse effects to traffic on adjacent roadways.

In August 2009, the Lanai High and Elementary School Master Plan Environmental Assessment (EA) was issued. As part of the EA, a traffic analysis was conducted on nearby streets. The traffic analysis was conducted based on current enrollment of 640 students and project enrollment of 780 students 2034.

The August 2009 report states field investigations were conducted on October 1-2, 2008, and consisted of manual turning movement count surveys along Fraser Avenue and 5th Street in the vicinity of the High and Elementary School. The manual turning movement count surveys were conducted between the morning commuter peak hours of 6:30 am to 8:30 am, and the afternoon commuter peak hours of 3:30 pm and 5:30 pm at 7 intersections, which included Fraser Avenue and Sixth Street and Fraser Avenue and Seventh Street.

The August 2009 report showed the highway capacity analysis was performed based upon procedures presented in the "Highway Capacity Manual", Transportation Research Board, 2000, and the "Highway Capacity Software", developed by the Federal Highway Administration. The analysis is based on the concept of Level of Service (LOS). LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F"; LOS "A" representing ideal or free-flow traffic operating conditions and LOS "F" unacceptable or potentially congested traffic operating conditions.

The traffic analysis showed peak hour of traffic in the vicinity the high and elementary school occurs between 7:00 am and 8:00 am and in the afternoon, the PM commuter peak hour of traffic generally between the hours of 3:30 pm and 4:30 pm at 7 intersections, including at the intersection of Fraser Avenue and Sixth Street, the location closest to the Health Center.

The traffic analysis was based on these peak hour time periods to identify the traffic impacts resulting from the High and Elementary School project. At the intersection with

Sixth Street, Fraser Avenue carries 47 vehicles northbound and 104 vehicles southbound during the AM peak hour of traffic. During the PM peak hour, traffic volumes are higher with 145 vehicles traveling northbound and 124 vehicles traveling southbound. The critical traffic movement on the Fraser Avenue approach is the southbound left-turn and through traffic movements which operate at LOS "A" during the morning peak period. The afternoon peak hour also operated at LOS "A" at this intersection.

The traffic analysis also included future conditions, or after the High and Elementary School enrollment had increased from 640 to 780 students. This future condition showed the Fraser Avenue and Sixth Street intersection would continue to operate at LOS "A".

Once construction has been completed, traffic in the area will be affected by vehicle trips to Health Center. As previously discussed, the Health Center anticipates about 20 to 30 patient visits per day and about 10 employees traveling to the project site. Since many of these trips would not be occurring in the peak traffic periods and the nearby streets would continue to operate at LOS "A", the Health Center would not create an adverse effect to traffic on nearby streets.

In December 2009, the County of Maui Department of Housing and Human Concerns issued the Final Environmental Assessment for the Lanai Senior Center project located on Seventh Street and Gay Street. The County is proposing to construct a replacement facility on the same site as the existing facility at Seventh and Gay Streets. This location places the western boundary of the Senior Center at the eastern boundary of Health Center on Gay Street.

The Senior Center Final EA stated, a variance to the County's off-street parking requirements will be requested. Since there is no off-street parking currently provided on-site for the existing Senior Center, there should be no change to exiting conditions when the Senior Center is completed. Thus, traffic from the Senior Center will not conflict with the Health Center.

The County of Maui Department of Transportation does not operate the Maui Bus on Lanai. However social services transportation is provided on Lanai through Maui

Economic Opportunity (MEO). The Health Center will work with MEO to identify a suitable bus stop which could be used by users of the Health Center.

3.8 Noise Quality

The County of Maui zoning for project site is B-CT Business Country Town District. Based on State of Hawaii Department of Health, Title 11, Hawaii Administrative Rules (HAR), Chapter 46 Community Noise Control, the project site would be considered zoning district Class B in which the maximum permissible sound level is 60 dBA between the hours of 7:00 am and 10:00 pm. The project site is bordered by single family housing and commercial/business uses. Predominant sources of noise include vehicles traveling along nearby roadways.

Impacts and Mitigation Measures

Construction-related activities will temporarily increase ambient noise levels within the vicinity of the work area. Actual noise levels produced would depend on the methods employed throughout construction. Earthmoving equipment such as bulldozers and diesel-powered trucks would probably be the loudest equipment used during construction. Typical ranges of construction equipment noise vary between 70 and 95 dBA.

Noise from construction will be unavoidable during the entire construction period. The various construction phases of the project may generate significant amounts of noise, which may impact nearby residences and businesses.

Construction noise impacts will be mitigated somewhat by compliance with provisions of the State Department of Health (DOH) Administrative Rules, Title 11, Chapter 46, "Community Noise Control". Heavy vehicles required for construction must comply with Title 11, Chapter 42 and "Vehicular Noise Control for Oahu". It shall be the contractor's responsibility to minimize noise by properly maintaining noise mufflers and other noise-attenuating equipment, and to maintain noise levels within regulator limits. Typically, the construction work would occur during daytime hours (7:00 am to 3:30 pm) Mondays through Fridays. If the construction work is expected to cause excessive noise, the contractor will be responsible for obtaining a noise variance according to Chapter 46 and complying with conditions attached to the permit.

In the long-term the Health Center project will not generate significant noise nor additional traffic as discussed in Section 3.7. Hence, any increase in traffic-related noise will also not be significant.

3.9 Air Quality

The Department of Health, Clean Air Branch, monitors ambient air in the State of Hawaii for various gaseous and particulate pollutants. The U.S. Environmental Protection Agency (EPA) has set national ambient air quality standards (NAAQS) for six criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, ozone, and particulate matter (PM10 and PM2.5). Hawaii has also established a state ambient air standard for hydrogen sulfide. The DOH maintains fourteen (14) monitoring stations throughout the State. The purpose of the statewide monitoring network is to measure ambient air concentrations of these pollutants and ensure that these air quality standards are met.

The State Department of Health (DOH) does not have an air monitoring station on the island of Lanai. Air quality in the general area is considered good. There are no significant sources of industrial pollution and agricultural activities that would generate airborne pollutants. Fugitive dust is a common source of pollution in areas undergoing construction or awaiting constructions without maintenance of any kind. While there is no air quality monitoring station on the Lanai, air quality is assumed to be in compliance with state and federal standards. The State Department of Health prepares an annual report containing five-year trends based on annual averages for particulates, sulfur dioxide and nitrogen dioxide and annual averages of daily maximum 1-hour and 8-hour values recorded for carbon monoxide, and annual averages for daily maximum 8-hour values recorded for ozone concentrations. The 2008 Annual Summary Hawaii Air Quality Data (August 2009), reported averages were well below both federal standard, as well as the more stringent state standards (see Appendix D-2). In 2008, the State of Hawaii was in attainment of all NAAQS (DOH, August 2009).

Impacts and Mitigation Measures

Potential short-term adverse air-quality impacts during the construction phase include: 1) generation of fugitive dust from vehicle movements and soil excavation; and 2) exhaust emissions from on-site construction equipment and from construction workers' vehicles traveling to and from the project site. These adverse impacts will be short-term during the period of construction.

During construction, activities such as clearing, grubbing, grading, and excavation at the project site will generate dust while vehicles and equipment will produce exhaust emissions. Dust control measures stipulated by Department of Health Administrative Rules, Title 11, Chapter 60, "Air Pollution Control" regulations will be employed, as appropriate, during construction and may include:

- Planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing on-site vehicular traffic routes, and locate potentially dusty equipment in areas of least impact;
- Providing an adequate water source at the site prior to start-up of construction activities;
- Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- Controlling of dust from shoulders, and access roads;
- Providing adequate dust control measure during weekends, after hours, and prior to start-up of construction activities;
- Controlling of dust from debris being hauled away from project site;
- Limiting the areas that are disturbed at any given time;
- Applying chemical soil stabilizers, mulching, or using wind screens;
- Establishing a road cleaning or tire washing program to reduce fugitive dust emissions from trucks using paved roadways in or around the project site; and
- Establishing landscaping early in the construction schedule to control dust.

Emissions from construction equipment, trucks and commuting construction workers are not anticipated to significantly impact ambient air quality. No air pollutants that may be generated at the project site are anticipated to exceed federal or State ambient air quality standards in the vicinity. Slow-moving construction vehicles, however, can disrupt peak hour traffic, increasing congestion and resulting in vehicular emissions. Traffic congestion and resulting emissions will be mitigated by transporting slower construction equipment during off-peak traffic hours.

In the long-term, operation of the Health Center will have no significant impact on air quality in the vicinity of the project site because there are no activities or other point sources associated with the Health Center that would be emitting significant air pollutants. The Health Center project will not generate significant additional traffic, as

discussed in Section 3.7. Hence, any increase in traffic-related emissions will also not be significant.

Lastly, national trends show substantial overall reductions in emissions due to stricter engine and fuel regulations issued by U.S. Environmental Protection Agency. The stricter engine regulation and the higher mileage requirement for vehicles and the resultant reduction in emissions has resulted in an improvement in air quality in most areas.

3.10 Archaeological and Historical Resources

Cultural Surveys Hawaii (CSH) conducted an archaeological literature review and field inspection of the project site. The report is included as Appendix B.

A review of the historic documentation indicates that Lanai City, in Kamoku Ahupuaa, was extensively developed for residential use and commercial pineapple cultivation beginning in the early 1920's. Construction of utility installation would have been contributed to the high level of disturbance of this current project area. Construction would have included roads, driveways, water line and sewer line installation. In addition, gardening and landscaping also contributed to the surface disturbance of the project area. The high level of disturbance in this area has probably obliterated any surface evidence that the native Hawaiian inhabitants of these upland slopes might have left behind.

However, based on the number of traditional cultural historic properties previously recorded in the upper basin and upper plateau region, in addition to historic properties identified in the region of Kihamanienie and Koele, it is possible that excavation and construction in the project site will occur in an area where subsurface traditional pre-contact or historic cultural deposits and buried structure remnants may be present.

The project site is located within the original layout of Lanai City. It appears from a review of historic photographs that, it was not previously cultivated in pineapple. Soil stratigraphy in such areas may consist of modern fill material overlaying undisturbed regional soils, indicating that undisturbed cultural deposits may exist in scattered pockets. Such subsurface deposits may include indigenous and post-contact cultural material remains, remnants of structural remains, and, possibly human burials.

The three small multi-family housing units on the project site were built in 1965, or 45 years ago. The three buildings were among a total of 9 dormitories built by Plantation Housing Ltd. At present, two of the buildings have been abandoned and the third is currently being used for the Lanai Community Health Center administration office and for the Lanai Art Center. The buildings were renovated in the past but the specific time periods were not known. The three existing buildings on the project site are “non-contributing” features or structures within the context of the proposed historic district of Lanai City Business Country Town. These structures will be removed to construct the new Lanai Community Health Center.

During the field survey, no other surface indications of historic-era constructions or traditional cultural material remains were observed during the present field inspection.

On February 25, 2010, as part of the pre-assessment consultation for this Draft EA, the State of Hawaii Department of Land and Natural Resources (DLNR) State Historic Preservation Division (SHPD) (LOG NO: 2010.0427/DOC NO: 1002PC008) replied that the project site has been previously disturbed and as such the History and Culture Branch does not anticipate any burials or other related sites in the area. Further, the SHPD noted that there is probably be no impact to traditional Hawaiian cultural practices for at least since Lanai City was built in the 1920’s.

The SHPD also stated the project site is located in Lanai Town Square and its boundaries are currently under consideration and review for nomination to the National Historic Register.

Impacts and Mitigation Measures

Based on the historic records and surface field inspection, it is recommended that precautionary monitoring during grading of the project and excavation for foundations and footings of the planned facility and utility connections. Subsurface deposits may include indigenous and post contact cultural material remains, and remnants of structural remains, and possibly human burials.

The construction documents will include that in the event historic properties, including iwi kupuna are encountered during construction, work will stop in the immediate area, the location secured, and SHPD contacted for further directions.

3.11 Cultural Impact Assessment

House Bill No. 2895 H.D.1 was approved by the Governor on April 26, 2000 as Act 50 which amended Chapter 343 Hawaii Revised Statutes to require a cultural impact assessment be included in the preparation of an Environmental Assessment.

Impacts and Mitigation Measures

A Cultural Impact Assessment/Study (CIS) was undertaken to gather information about traditional cultural practices, ethnic cultural practices, and pre-historic and historic cultural remains that might be affected by the Health Center project. Appendix C shows a summary of the Cultural Impact study. The complete report is on file with the County of Maui CBDG office, the State Historic Preservation Division office, and the Office of Environmental Quality Control.

The Cultural Impact Assessment indicated, throughout the consultation process the Lanai community identified their need for and support of the Lanai Community Health Center. The new location and facilities were viewed as necessary improvements to the islands overall health care services. There will be no adverse impacts to cultural resources or traditional cultural practices by the Health Center project, to the contrary, the project is viewed as an enhancement this community.

The Cultural Impact Assessment recommended that the Lanai community remain informed about the status and timelines regarding construction of the Health Center.

3.12 Socio-Economic Characteristics

According to the 2000 census, the island of Lanai had a resident population of 3,164 people, an increase of 31.8% from the 1990 census. In 2000, there were approximately 1,584 people in the labor force for the island of Lanai. The average per capita income for the island is \$18,668, compared to the State average of \$21,525. Approximately 661 or 43.9% of the total jobs are in the service industry. Of these, approximately 6.6% are accounted for in the construction and manufacturing industries (See Table 3-1).

Impacts and Mitigation Measures

In the short term, the construction expenditures will confer some positive benefits to the local economy. This would include creation of some construction and construction support jobs, and State and County Tax revenue associated with construction expenditures. Residents or businesses will not be permanently displaced by construction of Health Center. The Lanai Art Center will use the activity room on the

north wing of the Health Center for their needs. This will ensure that the Lanai Art Center will not be adversely affected.

Lanai Health Center (7th Street/Lanai Street) and Lanai Public Library (Fraser Street) are located less than a quarter mile from the project site. The Health Center will not impact these services.

In the long-term, the Health Center will address the growing need for medical and social services on Lanai, especially for the population which is uninsured and underinsured.

3.13 Public Services and Facilities

3.13.1 Police

The Lanai Police Station is located at the intersection of Eighth Street and Fraser Avenue. Approximately nine (9) officers are assigned to the station. One to two officers are assigned to patrol during the day (Gerald Park, August 2009).

Impacts and Mitigation Measures

In the short-term, the Health Center project will have construction-related impacts such as dust emissions, noise, and construction-related traffic that may elicit complaints received by the Police Department. In the long-term, the Health Center will increase the demand for police services due to the marginal increase related to patient residents visits.

On February 28, 2010, as part of the pre-assessment consultation for this Draft EA, the Maui Police Department noted no adverse impacts were noted for the Health Center. See Appendix A.

3.13.2 Fire

The Lanai Fire Station is located at on Fraser Avenue. The station is staffed with approximately 21 men and 7 personnel are on duty 24 hours a day. The station is equipped with a fire apparatus and a tanker. A second apparatus is posted to the station for back up should an off-island fire company be summoned to Lanai (Gerald Park, August 2009).

TABLE 3-1: DEMOGRAPHIC CHARACTERISTICS: 2000

Subject	Lanai City CDP*		State of Hawaii	
	Number	Percent	Number	Percent
Total population	3,164	100	1,211,537	100
AGE				
Under 5 Years	220	7.0	78,163	6.5
5 – 19 years	725	22.9	249,088	20.6
20 – 64 years	1,762	55.7	723,685	59.7
65 years and over	457	14.4	160,601	13.3
Median age (years)	36.7	--	36.2	--
RACE				
White	419	13.2	294,102	24.3
Black or African American	4	0.1	22,003	1.8
American Indian and Alaska Native	12	0.4	3,535	0.3
Asian	1,838	58.1	503,868	41.6
Native Hawaiian and other Pacific Islander	222	7.0	113,539	9.4
Two or more races	659	20.8	259,343	21.4
Other	10	0.3	15,147	1.3
HOUSEHOLD (BY TYPE)				
Total Households	1,148	100	403,240	100
Family households (families)	797	69.4	287,068	71.2
With own children under 18 years	401	34.9	129,322	32.1
Married-couple family	617	53.7	216,077	53.6
With own children under 18 years	288	25.1	96,758	24.0
Female householder, no husband present	114	9.9	49,923	12.4
With own children under 18 years	67	5.8	23,619	5.9
Non – families households	351	30.6	116,172	28.8
Householder living alone	295	25.7	88,153	21.9
Householder 65 years and over	101	8.8	28,565	7.1
Average persons per household	2.75	--	2.92	--
HOUSING OCCUPANCY AND TENURE				
Total Housing Units	1,343	100	460,542	100
Occupied units	1,148	85.5	403,240	87.6
By owner	571	49.7	227,888	56.5
By renter	577	50.3	175,352	43.5
Vacant units	195	14.5	57,302	12.4
Homeownership rate (%)	49.7	--	56.5	--
SOCIAL CHARACTERISTICS				
Population 25 years and over	2,061	100	802,477	100
High school graduate or higher	1,430	69.4	687,666	84.6
Bachelor's degree or higher	340	16.5	210,041	26.2
Civilian veterans (civilian pop. 18 yrs. & older)	229	9.9	120,587	13.7
Disability status (pop. 21 to 64 years)	329	19.2	118,555	17.7
Foreign born	982	30.8	212,229	17.5

Subject	Lanai City CDP*		State of Hawaii	
	Number	Percent	Number	Percent
Total population	3,164	100	1,211,537	100
ECONOMIC CHARACTERISTICS (1999)				
In labor force (pop. 16 & over)	1,584	65.9	612,831	64.5
Median household income (dollars)	43,271	--	49,820	--
Median family income (dollars)	49,209	--	56,961	--
Per capita income (dollars)	18,668	--	21,525	--
Families below poverty level	68	8.5	22,101	7.6
Individuals below poverty level	300	9.5	126,154	10.7

Source: U.S. Census Bureau *Census Designated Place

Firefighters provide first response to emergency calls but not ambulance service. Ambulance service is provided by American Medial Response from their office on 13th Street.

Impacts and Mitigation Measures

By including installation of a fire sprinkler system in the Health Center facility to meet current building codes, the project is anticipated to improve fire protection within the project site and reduce potential demand for fire fighting services.

3.13.3 Medical

Lanai Community Hospital, a State hospital, is the only major medical facility on the island. It is located near Seventh Street north of Lanai Avenue in Lanai City. The 14-bed facility contains 4 acute care and 10 long-term care bed and provides acute and long-term medical care, as well as 24-hour emergency medical service.

In addition, Straub Clinic, a for-profit facility, operates a clinic adjacent to the Hospital. There are two resident Straub Clinic and Hospital physicians who serve both facilities. The hospital staff consists of a nursing director, X-ray technician, laboratory technician, and six registered nurses. Straub Clinic services include:

- Diagnosis and treatment of illness and injury for infants, children, adolescents, and adults
- Periodic physical examinations and preventive health maintenance
- Pre-marital and gynecological examinations

- Minor surgical procedure
- Well-baby and well-child services
- Selected specialty consultations available in: cardiology, dermatology, obstetrics/gynecology, ophthalmology, orthopedics, pediatrics, physical therapy, and nephrology

Impacts and Mitigation Measures

As previously discussed, the Health Center services will include primary care and preventive health services, communicable disease testing, dental, mental health services, pre-natal services, counseling and treatment, insurance eligibility, and medical "enabling" services, such as outreach, case management, and language interpretation. Pharmacy services are contracted through a Molokai pharmacy to provide patients with their prescribed medications at very low cost, especially important to diabetes mellitus and cardiovascular disease patients due to the many and continuing medicines required to treat these diseases.

The Health Center will not be providing services which compete with Lanai Community Hospital or Straub Clinic. Based on this, the Health Center will not have adverse effects on the other medical services on Lanai. Further, since the Health Center is intended to provide services related to include primary care and preventive health services, communicable disease testing, dental, mental health services, pre-natal services, counseling and treatment, insurance eligibility, and medical "enabling" services, such as outreach, case management, and language interpretation. The Health Center will not create need for additional services.

3.13.4 Schools

Lanai High and Elementary School is one of four public schools comprising the Hana-Lahainaluna-Lanai-Molokai Complex Area. Enrollment for the 2008–2009 school year was 559 students (Hawaii DOE, November 2009). Staffing includes a principal, vice-principal, counselors, athletic director, and 46 full time teachers.

Impacts and Mitigation Measures

The Health Center employees will continue to be either residents of Lanai or residents of other islands who travel to Lanai to provide medical services. The children of these Lanai employees are likely already enrolled at the school. Thus, no significant impacts

on educational services or facilities are anticipated as a result of the Health Center project.

3.13.5 Recreation

Public parks and recreational facilities in the County of Maui are administered and maintained by the Department of Parks and Recreation (DPR). DPR parks and facilities in Lanai City include the Lanai Community Center, the Lanai Gym and Tennis Courts, the Lanai Little League Field, Lanai Park and Tennis Courts, and Lanai Softball Field (County of Maui website, May 21, 2010).

Dole Park is a privately owned and maintained recreational facility located nearby the project site. Dole Park, also known as Lanai City Commercial Square, was built when the plantation village was established and serves as the center of recreational activities with a pavilion, picnic tables, and community center.

Impacts and Mitigation Measures

In the short-term, the Health Center project will have construction-related impacts such as dust emissions, noise, and construction-related traffic that may impact nearby recreational facilities. In the long-term, no significant impacts on recreational facilities are anticipated as a result of the Health Center. In addition, since the Health Center will provide services to existing residents on Lanai, operation of the Health Center will not create additional need or adverse impacts to recreational facilities on Lanai.

3.14 Infrastructure

3.14.1 Water

The Lanai Water Company, Inc. privately owns the domestic water system servicing Lanai City, including the project site. The water for Lanai City is primarily drawn from Well 6 and stored in a 2 million gallon reservoir. From the reservoir, water gravity flows through a system of various sized water mains.

Potable water and fire protection laterals will be connected to Lanai Water Company lines located in Houston, Sixth, and Gay Streets. The location of the connections will be determined during the design of the facility.

Impacts and Mitigation Measures

During design and construction, close coordination will be maintained with the County Department of Water and the Lanai Water Company to ensure that the water system will not be adversely impacted and to minimize interruption of water service to adjacent areas.

Based on the fixture count, the anticipated water demand for the Health Center will be approximately 1,600 gallons per day. This level of demand should not create adverse impacts to the potable water system or to the water sources.

3.14.2 Drainage

Currently, drainage sheet flows from Houston Street to Gay Street in a south-westerly direction to the corner of Gay and Sixth Streets. Other than surface runoff and roadway swales there are no existing drainage systems around the project site.

Impacts and Mitigation Measures

The design drawings show the intent is to maintain the existing drainage patterns and drainage discharge points off the project site. The Health Center drainage will generally sheet flow from Houston Street towards Gay Street. The increased drainage from the project site will be detained on-site, utilizing landscaped areas along Gay Street as detention basins and swales within the site. The swales and basins would also function as bio-swales which will capture the runoff and allow percolation to the subsurface. Use of bio-swales and basins would act to retain surface flows within the project site.

3.14.3 Wastewater

The project site is serviced by the Lanai Wastewater Reclamation Facility (WWRF), which is owned and operated by the County of Maui, Department of Environmental Management. Existing 8-inch wastewater lines are located along Houston Street, Gay Street, Sixth Street and Seventh Street. The wastewater laterals from the project site will be connected the County's wastewater lines.

Impacts and Mitigation Measures

During design and construction, close coordination will be maintained with the County to ensure that the wastewater system will not be adversely impacted and minimize interruption of wastewater service to adjacent areas. Based on the anticipated water

demand for the Health Center, the sewer demand will be approximately 1,600 gallons per day.

On April 12, 2010, as part of the pre-assessment consultation for this Draft EA, the County of Maui Department of Environmental Management, stated although wastewater system capacity is currently available, the wastewater system capacity cannot be ensured until issuance of the building permit. See Appendix A.

3.14.4 Electrical and Communication

Electrical and communication services are provided by Maui Electric Company (MECO), Hawaiian Telecom and Time Warner Cable.

Impacts and Mitigation Measures

Electrical and communication services will continue to be provided by MECO, Hawaiian Telecom and Time Warner Cable, respectively. Improvements to the electrical distribution system along the adjacent roadways and within the project site will be required and coordinated with MECO.

3.14.5 Solid Waste

Refuse services for residential uses are provided by the County of Maui. A private service collects and disposes of solid waste for commercial uses. Currently, the existing Health Center disposes solid waste in on-site refuse containers which are picked once a week by the private service. Typically, the Health Center disposes about one or two 35-gallon containers each week. The Health Center takes bio-hazardous materials to the Lanai Community Hospital for pick up and disposal.

Solid waste is disposed in the County of Maui Lanai Landfill located about 4 miles southwest of Lanai City. In February 2009, the County of Maui issued the *Integrated Solid Waste Management Plan ("ISWMP")* to provide a comprehensive plan for solid waste management in the County. As part to the ISWMP, information on solid waste collection and disposal for Lanai shows that, in 2005, a total of 6,439 tons of solid waste was generated, 1,401 tons (21.8%) was recycled, and 5,038 tons was disposed at the landfill.

Impacts and Mitigation Measures

The Health Center contract documents will include that the contractor should undertake waste reduction and recycle of construction related waste including foundation and slab framing materials, all types of construction material packaging and packing materials.

The design drawings also show areas of the Health Center building have been designed to include spaces to hold solid waste materials which can be recycled.

The County ISWMP shows solid waste generation rate factors for residential and commercial users and total municipal solid waste and solid waste disposed in landfills. For Lanai, the ISWMP shows commercial waste generation of 1.63 tons per employee per year including recycled material. Based on about 10 full time employees at the replacement Health Center, a total of about 16.3 tons per year of solid waste would be generated and about 3.26 tons recycled leaving about 13.04 tons per year to be disposed in the landfill. This would represent about 0.26% of the total of 5,038 tons estimated for disposal in the Lanai landfill in 2015. The ISWMP also states the typical office worker would probably generate about 50% of the total commercial generation factor. Based on this analysis, the Health Center would generate between 6.25 to 13.04 tons per year, or about 0.13% to 0.26% of the solid waste disposed in the Lanai landfill. Thus, the Health Center would not create an adverse impact to solid waste on Lanai.

3.15 Visual Quality

As previously discussed, Lanai City is the last extant example of "Garden City" and "Village" planning standards remaining in Maui County and is one of only two remaining in the State of Hawaii. The residential structures in Lanai City are typically three-bay, three- to four-pile, one-story buildings with side-gabled roofs, rear shed additions, and full-length front porches or "lanai" which were enclosed on the ends by wood side walls and fenestrated with windows. Use of the porch appears to have been exclusive to Lanai and employed to reduce the effects of the trade winds.

This visual character of the buildings and the grid street pattern absence of curbs and sidewalks in most areas provide Lanai City with unique visual quality and character not found in other areas of Hawaii. This character is found in the uses surrounding the project site, except for the modern two-story multi-family complex on the south side of the project site adjacent on Gay Street.

Impacts and Mitigation Measures

As previously discussed, the preliminary design shows the single story Health Center building will have exterior simulated wood or wooden siding with wooden posts and railings, wood window frames and muntins, and standing seam or corrugated metal roofing. The highest point on the roof will be about 25 feet above grade. The facility will be designed to be compatible with the “plantation home style” and existing buildings on the surrounding parcels and town buildings. The entire west side of the building will be an open lanai.

These design characteristics, including use of the lanai, will ensure the building blends with the existing buildings in Lanai City and fits within the surrounding built environment of Lanai City. The absence of curbs and sidewalks along the perimeter of the Health Center will also ensure the facility is compatible with other areas of Lanai City and with Lanai City design guide.

3.16 Scenic and Open Space Resources

The project site is currently occupied with three existing former dormitory buildings which will be removed for construction of the Health Center. The surrounding lands are also occupied by existing uses, including single family residences, a two-story multi-family complex, and a community college facility serving Lanai. The project site and surrounding area would not be considered part of a scenic view corridor.

The Dole Park, the main open space area of Lanai City, is located about 200 east of the project site. The Maui Community College facilities are located between the Health Center and Dole Park.

Impacts and Mitigation Measures

As previously discussed, the preliminary design shows the single story building will have exterior simulated wood or wooden siding with wooden posts and railings, wood window frames and muntins, and standing seam or corrugated metal roofing. The highest point on the roof will be about 25 feet above grade. The facility will be designed to be compatible with the “plantation home style” and existing buildings on the surrounding parcels and town buildings. The Health Center will not have significant impacts on scenic and open space resources.

The Health Center is intended to service existing residents of Lanai. Thus, the Health Center would not create a need to provide open space resources.

3.17 Federal Environmental Clearances

The Health Center will use funds provided by US Department of Housing and Urban Development (HUD) through the County of Maui Office of the Mayor Community Development Block Grant program. The following sub-sections address the Health Center's relationship to other Federal authorities.

3.17.1 Archaeological and Historic Preservation Act of 1974 (16 USC Section 461)

The declaration of national policy set forth in 16 USC 461 states, "It is declared that it is a national policy to preserve for public use historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States. "

Based on the historic records and surface field inspection it is recommended that precautionary monitoring during grading of the project and excavation for foundations and footings of the planned facility and utility connections. Subsurface deposits may include indigenous and post contact cultural material remains, and remnants of structural remains, and possibly human burials. Refer to section 3.10 for additional information.

The Health Center design and contract documents will include, in the event that human remains are identified during the course of excavation, all work in the immediate area should be stopped, the location secured, and the State of Hawaii Department of Land and Natural Resources State Historic Preservation Division (SHPD) contacted for further directions.

3.17.2 Clean Air Act (42 USC § 7506 (C))

Among the purposes of the Clean Air Act was (1) to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population; (2) to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution; (3) to provide technical and financial assistance to State and local governments in connection with the development and execution of their air pollution prevention and control

programs; and (4) to encourage and assist the development and operation of regional air pollution prevention and control programs.

As discussed in Section 3.9, air quality in the project area is characterized by low level of residential and business/commercial development and industrial facilities. In 2008, the State of Hawaii was in attainment of all NAAQS (DOH, August 2009). See Appendix D-2.

Grading and excavation will be required for construction and construction activities must comply with the Department of Health Air Pollution Control rules with respect to fugitive dust during construction.

Emissions from the construction vehicles will slightly degrade air quality for the short period of time they are in operation. However, all applicable emission and ambient air quality standards will continue to be met. Consequently, no adverse health effects from this source are anticipated.

3.17.3 Coastal Barrier Resources Act, (16 USC 1451)

In 1982, the US Congress passed the Coastal Barrier Resources Act (CBRA) (16 USC 3501) which established the John H. Chafee Coastal Barrier Resources System (CBRS), comprised of undeveloped coastal barriers along the Atlantic, Gulf, and Great Lakes coasts. The law encourages the conservation of hurricane prone, biologically rich coastal barriers by restricting Federal expenditures that encourage development, such as Federal flood insurance through the National Flood Insurance Program.

The Coastal Barrier Resources Reauthorization Act of 2000 reauthorized the Coastal Barrier Resources Act (CBRA) and directed the U.S. Fish and Wildlife Service to complete a Digital Mapping Pilot Project that includes digitally produced draft maps for up to 75 John H. Chafee Coastal Barrier Resources System (CBRS) areas and a report to Congress that describes the feasibility and costs for completing digital maps for all CBRS areas.

The purpose of the CBRA is to minimize the loss of human life, wasteful expenditure of Federal revenues, and the damage to fish, wildlife, and other natural resources associated with the coastal barriers along the Atlantic and Gulf coasts and along the

Great Lakes by restricting future Federal expenditures and financial assistance which have the effect of encouraging development along coastal barriers.

According to U.S. Fish & Wildlife Service John H. Chaffee Coastal Barrier Resources System website, Hawaii has no areas within the Coastal Barrier Resources System.

3.17.4 Coastal Zone Management Act (16 USC § 1456(C)(1))

In 1972, the U.S. Congress enacted the Federal Coastal Zone Management Act to ensure that each Federal agency undertaking an activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs. Each Federal agency carrying out an activity subject to the Act shall provide a consistency determination to the relevant State agency designated under section 1455(d)(6) of this title at the earliest practicable time.

In 1977, Hawaii enacted Chapter 205A, HRS, Hawaii Coastal Zone Management (CZM) Program. The CZM area encompasses the entire state, including all marine waters seaward to the extent of the state's police power and management authority, including the 12-mile U.S. territorial sea and all archipelagic waters.

The Health Center project site is centrally located on the island of Lanai, in Lanai City. The Health Center project is not located within the County SMA and will not significantly impact shoreline and coastal resources. The Health Center project is consistent with CZM objectives and is further discussed in Section 4.2.4.

On June 24, 2004, the State of Hawaii Department of Business and Economic Development & Tourism Office of Planning notified the US Department of Housing and Urban Development (HUD), Hawaii State Field Office (Ref No. P-10520), that the Office of Planning will no longer review any HUD assistance programs, including Community Development Block Grants and that applicants for HUD assistance are no longer required to obtain CZM federal consistency approval for HUD assisted activities.

3.17.5 Sole Source Aquifers (40 CFR 149)

The EPA's Sole Source Aquifer (SSA) Program was established under Section 1424(e) of the Safe Drinking Water Act (SDWA). Since 1977, it has been used to help prevent contamination of groundwater from federally-funded projects.

Sole source aquifers have been identified for only the islands of Oahu and Molokai. The Island of Lanai and the project site are not located within the EPA-designated sole source aquifer (see Appendix D-3).

3.17.6 Endangered Species Act (16 USC 1536(A)(2) and (4))

The Endangered Species Act (16 USC Section 1531-1544, as amended) provides broad protection for species of fish, wildlife, and plants that are listed as threatened or endangered in the U.S. or elsewhere. The Act mandates that Federal agencies seek to conserve endangered and threatened species and use their authorities in furtherance of the Act's purposes. Provisions are made for listing species, as well as for recovery plans and the designation of critical habitat for listed species.

16 USC Section 1536, Interagency Cooperation, states each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (an "agency action") is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical, unless such agency has been granted an exemption for such action.

As discussed in Section 3.6, there are no plant or animal species currently listed or proposed for listing as endangered or threatened species at the project site. According to the US Fish and Wildlife Service, there are four areas identified as critical habitat for threatened plant species on the island of Lanai. The critical habitats are located outside of Lanai City, several miles north and south of Lanai City.

3.17.7 Environmental Justice, Executive Order 12898

Executive Order 12898, Environmental Justice, was signed on February 11, 1994. The intent of Executive Order 12898 (full title Federal Actions to Address Environmental Justice to Minority and Low Income Populations) is to avoid disproportionately high adverse human health or environmental effects of projects on minority and low income

populations. Executive Order 12898 also requires Federal agencies ensure that minority and low income communities have adequate access to public information related to health and the environment.

The lands and properties surrounding the Health Center project site will not be subject to adverse environmental effects during construction or operation of the Health Center. Thus, based on these considerations, the Health Center project will not result in a disproportionately high adverse human health or environmental effect on minority and low income populations.

3.17.8 Floodplain Management, Executive Order 11988 as amended by Executive Order 12148

Executive Order 11988, Floodplain Management, dated May 24, 1977 requires Federal agencies to take action to reduce the risk of flood loss, restore the natural and beneficial values of floodplains, and minimize the impacts of floods on human safety, health, and welfare. Executive Order 12148, July 20, 1979, amended Executive Order 11988. The main feature of the amendment added that agencies with responsibilities for Federal real estate properties and facilities shall, at a minimum, require the construction of Federal structures and facilities to be in accordance with the criteria of the National Flood Insurance Program.

As discussed in Section 3.5, there are no flood hazards associated with the Health Center project site. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). Community Panel Number 1500030500E (revised September 25, 2009) the project site is within Zone X, "other areas determined to be outside the 0.2% annual chance floodplain" (see Appendix D-1). There are no flood hazards associated with the Health Center project site. Further, the project site is not located in the area designated as a tsunami evacuation zone.

As part of the pre-assessment consultation for this Draft EA, on February 9, 2010, the State of Hawaii Department of Land and Natural Resources (DLNR) Engineering Division confirmed the project site is located in Zone X and that the Flood Insurance Program does not have any regulations for developments in Zone X. Appendix A shows the DLNR letter.

3.17.9 Protection of Wetlands Executive Order 11990

Executive Order 11990, Protection of Wetlands, dated 1977 requires Federal agencies to avoid, preserve, or mitigate effects of new construction projects on lands which have been designated wetlands.

The project site has been used for urban purposes, housing, since the 1920s and currently contains two abandoned structures which were dormitories and a third former dormitory currently used as an administration building by the Lanai Community Health Center and for the Lanai Art Center. The remaining portion of the project site has planted and naturally occurring grass. The project site shows no potential wetland characteristics related to vegetation, and contains no hydrology indicators (occasional flooding), and no hydric soils.

As discussed in Section 3.4, there are no surface water resources on the project site nor any characteristics related to wetlands

3.17.10 Farmland Protection Policy Act (7 USC § 4202(8))

The U.S. Congress adopted the Farmland Protection Policy Act (FPPA) (Public Law 97-98) on December 22, 1981. The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) has national leadership for administering the FPPA. The effective date of the FPPA rule (part 658 of Title 7 of the Code of Federal Regulations) is August 6, 1984.

The stated purposes of the FPPA are to:

- Minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses.
- Assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with State, unit of local government, and private programs and policies to protect farmland.

“Farmland”, as used in the FPPA, includes prime farmland, unique farmland, and land of statewide or local importance. “Farmland” subject to FPPA requirements does not have to be currently used for cropland.

As discussed in Section 3.1, the Health Center project site is classified as "existing urban development". Since the Health Center project site is not classified as "prime" agricultural lands, the Health Center project is in compliance with the FPPA.

3.17.11 Fish and Wildlife Coordination Act (16 USC § 661-666)

The Fish and Wildlife Coordination Act, as amended, authorizes the Secretaries of Agriculture and Commerce to require consultation with the Fish and Wildlife Service and the fish and wildlife agencies of States where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted... or otherwise controlled or modified" by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of "preventing loss of and damage to wildlife resources."

As documented in Section 3.4, the Health Center project site does not contain surface water resources. Thus, construction of the Lanai Health Center will not result in a diversion of any water body and will not result in impacts on fish or wildlife resources.

3.17.12 National Historic Preservation Act of 1966 (16 USC § 470 (F))

Section 106 of the National Historic Preservation Act of 1966 (PL 89-665, codified as 16 USC 470f) requires that Federal agencies consider the effects of their projects on historic properties and allow the Advisory Council on Historic Preservation a reasonable opportunity to comment on such projects. The Section 106 review regulations are set forth in CFR 800. In most cases, the State of Hawaii Department of Land and Natural Resources Historic Preservation Division (SHPD) acts for the Advisory Council to undertake this review process. The SHPD must concur that the Health Center project will have "no effect" on historic properties.

Based on the historic records and surface field inspection, it is recommended that precautionary monitoring during grading of the project site and excavation for foundations and footings of the planned facility and utility connections. Subsurface deposits may include indigenous and post contact cultural material remains, and remnants of structural remains, and possibly human burials. Refer to section 3.10 for additional information.

In the event that human remains are identified during the course of excavation, all work in the immediate area should be stopped, the location secured, and SHPD contacted for further directions.

On February 25, 2010, as part of the pre-assessment consultation for this Draft EA, the State of Hawaii Department of Land and Natural Resources (DLNR) State Historic Preservation Division (SHPD) (LOG NO: 2010.0427/DOC NO: 1002PC008) replied that the project site has been previously disturbed and as such the History and Culture Branch does not anticipate any burials or other related sites in the area. Further, the SHPD noted that there is probably no impact to traditional Hawaiian cultural practices for at least since Lanai City was built in the 1920's. Appendix shows the SPHD letter.

The SHPD also stated the project site is located in Lanai Town Square and its boundaries are currently under consideration and review for nomination to the National Historic Register.

3.17.13 Wild and Scenic Rivers Act (16 USC 1271-1287)

The Wild and Scenic Rivers Act was first passed in October 1968 and has been amended a number of times. (16 U.S.C. §§ 1271-1287, October 2, 1968, as amended 1972, 1974-1976, 1978-1980, 1984, 1986-1994 and 1996.)

This Act established a National Wild and Scenic Rivers System for the protection of rivers with important scenic, recreational, fish and wildlife, and other values. Rivers are classified as wild, scenic or recreational. The Act also designated specific rivers for inclusion in the System and prescribes the methods and standards by which additional rivers may be added. The Act contains procedures and limitations for control of lands in federally administered components of the System and for disposition of lands and minerals under Federal ownership. Hunting and fishing are permitted in components of the System under applicable federal and state laws.

The purpose of this act, as stated in Section (b) of its preamble is as follows:

It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments

shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.

There are no rivers in Hawaii designated as wild and scenic as part of the Wild and Scenic Rivers Act (see Appendix D-4).

As discussed Section 3.4, there are no surface water resources on the Health Center project site. Development of the Health Center does not have the potential to affect the hydrology, water quality, or aquatic resources. Thus, the Health Center project is consistent with the provisions of the Wild and Scenic Rivers Act.

3.17.14 Fishery Conservation and Management, Magnuson-Stevens Fishery Conservation and Management Act (16 USC Sec. 1801)

The Congress found and declared the following:

(1) The fish off the coasts of the United States, the highly migratory species of the high seas, the species which dwell on or in the Continental Shelf appertaining to the United States, and the anadromous species which spawn in United States rivers or estuaries, constitute valuable and renewable natural resources. (2) Certain stocks of fish have declined to the point where their survival is threatened, and other stocks of fish have been so substantially reduced in number that they could become similarly threatened (3) Commercial and recreational fishing constitutes a major source of employment and contributes significantly to the economy of the Nation. (4) International fishery agreements have not been effective in preventing or terminating the overfishing of these valuable fishery resources. (5) Fishery resources are finite but renewable. If placed under sound management before overfishing has caused irreversible effects, the fisheries can be conserved and maintained so as to provide optimum yields on a continuing basis. (6) A national program for the conservation and management of the fishery resources of the United

States is necessary to prevent overfishing, to rebuild overfished stocks, to insure conservation, to facilitate long-term protection of essential fish habitats, and to realize the full potential of the Nation's fishery resources. (7) A national program for the development of fisheries which are underutilized or not utilized by the United States fishing industry, including bottom fish off Alaska, is necessary to assure that our citizens benefit from the employment, food supply, and revenue which could be generated thereby. (8) The collection of reliable data is essential to the effective conservation, management, and scientific understanding of the fishery resources of the United States. (9) One of the greatest long-term threats to the viability of commercial and recreational fisheries is the continuing loss of marine, estuarine, and other aquatic habitats. (10) Pacific Insular Areas contain unique historical, cultural, legal, political, and geographical circumstances which make fisheries resources important in sustaining their economic growth.

The project site does not include water resources which supports fishery resources. Thus, the Health Center project will not have an adverse effect on fishery resources.

3.17.15 U.S. Department of Transportation Act Section 4 (F); (49 USC Section 303)

The Department of Transportation (DOT) Act of 1966 Section 4(f) included specific provisions providing special protection to publicly owned parks, recreational areas, wildlife and waterfowl refuges, and all historic sites. In 1983, the DOT Act was codified and Section 4(f) became 49 USC Section 303. (Note, some documents still use the term Section 4(f) when referring to this issue.) Under Section 303, the DOT may approve a project requiring the use of publicly owned land of a park, recreation area, or wildlife and waterfowl refuges, or historic site, only if there is no prudent and feasible alternative to using that land, and the project includes all possible planning to minimize harm to the park, recreation area, wildlife refuge, or historic site.

The Health Center project site is not located on public property under the jurisdictional authority of 49 USC Section 303.

3.17.16 Department of Army Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Federal Water Pollution Control Act (33 USC 1341)

The Department of the Army Corps of Engineers (COE) regulates activities in the nation's waters. Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from the COE. (Navigable waters of the U.S. means those waters that are subject to the ebb and flow of the tide shoreward of the mean high water mark and/or presently used, or have been used in the past or may be susceptible to use to transport interstate or foreign commerce.)

Section 404 of the Federal Water Pollution Control Act (33 USC 1341), commonly called the Clean Water Act, prohibits the discharge of dredged or fill material into waters of the U.S. without a permit from the COE. (Waters of the U.S. is a broader term than navigable waters of the U.S. Waters of the U.S. includes adjacent wetlands and tributaries to navigable waters and other waters where degradation or destruction of which could affect interstate or foreign commerce.) A structure is considered fill material along with other fill or dredged materials placed in the waters of the U.S. COE permits continue in effect until they automatically expire or are modified, suspended, or revoked. The permit will specify time limits for completing the work and may also specify a date by which the work must be started.

As discussed Section 3.4, there are no surface water resources on the Health Center project site. Development of the Health Center project site does not have the potential to affect the waters of the U.S.

3.17.17 Airport Runway Clear Zone Disclosure (Section 58.6(d))

Lanai Airport, the only aviation facility serving Lanai with scheduled aircraft operations, is operated by the State of Hawaii Department of Transportation and contains a single 5000-foot long runway (Runway 3-21). The project site is 15,800 linear feet (LF) northeast from the end of Runway 21 at Lanai Airport and 14,600 LF northeast from the end of the Runway Protection Zone (formerly Clear Zone) (see Appendix D-5).

According to 24 Code of Federal Regulations (CFR) 51, Subpart D, HUD assistance for construction or major rehabilitation of any property located on a clear zone site is prohibited if located within 2,500 feet of the end of a civil airport runway or 8,000 feet of the end of a military airfield runway.

The US Department of Transportation Federal Aviation Administration (FAA) sets forth criteria and guidelines regarding air space at and around airports. FAA Advisory Circular No. 150/5300-13 Change 7 (Oct 1, 2002) and 150/5300-13 Change 11 (Mar 28, 2007) identifies the Runway Protection Zone (RPZ) as trapezoidal shaped and centered on the extended runway centerline. The RPZ for Runway 21 begins 200 LF from end of the runway and extends for 1,000 LF. The total width of the RPZ is 700 LF from the extended centerline of Runway 21.

Lanai Airport is not designated as a Department of Defense airfield.

The project site is not within the Lanai Airport Runway Protection Zone (Clear Zone) as defined by Section 151.9, Federal Aviation Regulations and FAA Advisory Circular No. 150/5300-13 Change 7 (Oct 1, 2002) and 150/5300-13 Change 11 (Mar 28, 2007).

4. RELATIONSHIP TO PLANS, POLICIES AND CONTROLS

4.1 Hawaii State Plan

The Hawaii State Plan, adopted in 1978 and revised in 1988, establishes the overall theme, goals, objectives, and priority guidelines to guide the future long-range development of the State. The Health Center project supports and is consistent with the following State Plan objectives and policies:

Section 226-6 Objectives and policies for the economy - in general.

(b)(6) *Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.*

Comment: The Health Center project will involve construction of replacement facilities at a new site. The Health Center project will increase the level of construction activity on Lanai during the period of construction which will enhance the state's growth objectives.

Section 226-20 Objectives and policies for socio-cultural advancement – health

(a)(1) *Fulfillment of basic individual health needs of the general public.*

(b)(1) *Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.*

(b)(2) *Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.*

(b)(5) *Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.*

Comment: The Health Center will provide accessible primary medical care, dental care, behavioral health services, prenatal, family planning, nutrition and preventive health education services open to the low- and moderate-income, uninsured, and underserved residents of Lanai.

4.1.1 State Land Use District

The Hawaii Land Use Law of Chapter 205, Hawaii Revised Statutes, Land Use Commission, classifies all land in the State into four land use districts: Urban, Agriculture, Conservation, and Rural. The project site and Lanai City lie within the Urban District, which includes “lands characterized by city-like concentrations of people, structures, streets, urban level of services and other related uses.” The Health Center land use is consistent with the Urban classification.

4.2 County of Maui

4.2.1 County General Plan

Maui County's General Plan was adopted under Ordinance No. 1052 in 1980 and updated in 1990. The Plan is the guiding document for the long-range development of the County. The Plan provides policy statements in the form of goals, directions and strategies for meeting the long-term social, economic, environmental and land use needs for the general welfare and prosperity of the people through multi-level government action.

Maui County is currently updating the General Plan, with a planning horizon of 2030. As part of the 2030 General Plan Update, the County issued a Draft Countywide Policy Plan in January 2008. Until the 2030 General Plan Update is completed and adopted, the 1990 General Plan remains in effect.

The 1990 General Plan emphasizes five (5) major themes that focus on the overall goals of the Plan. The Health Center project is consistent with the following General Plan objectives and policies relating to health and family.

V. Social Infrastructure

A. Access to Human Services

Objective 1: To coordinate through the Maui County Department of Human Concerns the establishment of quick and reliable access to human services.

Policy 2: Coordinate the services of government (Federal, State, and County) and private non-profit agencies, in order to insure the quickest and most reliable access.

C. *Health and Family*

Objective 1: To meet the health needs of all residents and visitors.

Policy 3: Encourage the expansion and improvement of our hospitals and our public and private medical facilities.

Objective 2: To focus on the quality of family life including the young, the elderly, and the handicapped as the basic building block of community well-being

Policy 1: Establish community based family support programs.

4.2.2 Lanai Community Plan

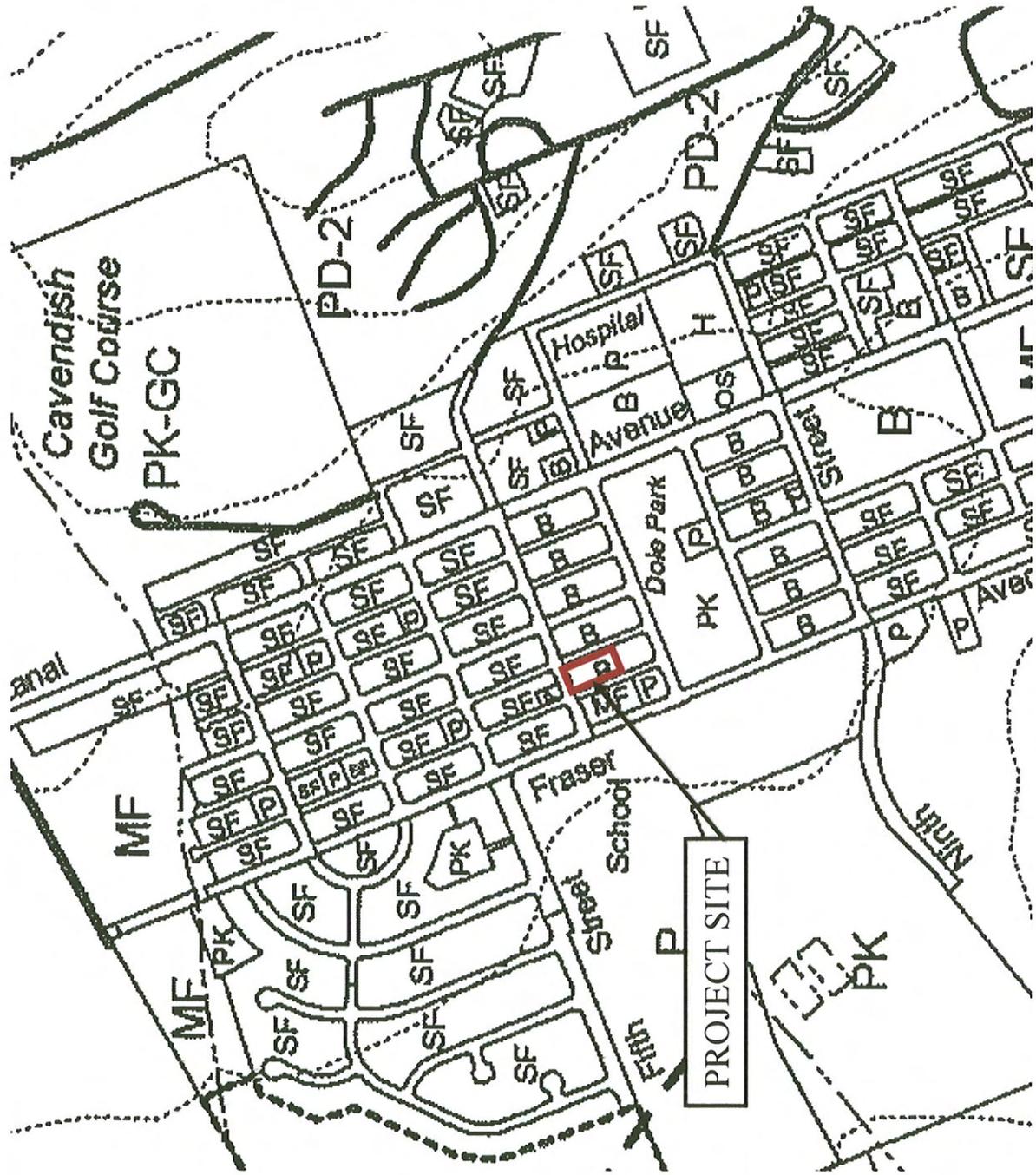
The Health Center project site is located in the Lanai Community Plan region, one (1) of nine (9) Community Plan regions established in the County of Maui. Planning for each region is guided by the respective Community Plans, which are designed to implement the Maui County General Plan. Each Community Plan has been adopted for each region to set forth desired land use patterns, goals, objectives, policies, and implementation actions for a number of functional areas, including land use, environment, economic activity, cultural resources, housing, urban design, infrastructure, social infrastructure, and government.

According to the Lanai Community Plan Land Use Map, the Health Center project site is designated for “commercial use” (see Figure 4.1). The Community Plan also identifies lack of social services and public services and facilities as major issues on Lanai.

The Lanai Community Plan (1998 Update) sets forth goals, objectives and policies which are statements identifying preferred future conditions. Goals, objectives and policies associated with the Health Center project include the following:

LEGEND

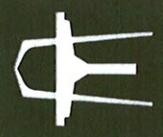
SF	Single Family
MF	Multi-family
H	Hotel
B	Commercial
BMF	Business Multi-family
BI	Business/Industrial
SBR	Service Business/Residential
LI	Light Industrial
HI	Heavy Industrial
A	Airport
AG	Agriculture
AG15	AG/Act15
R	Rural
PD	Project District
OS	Open Space
C	Conservation
P	Public/Quasi-public
PK	Park
PK GC	Park/Golf Course
- - -	50 ft Contour



Source: Lanai Community Plan, County of Maui, 1998

FIGURE
4.1

Lanai Community Health Center
Lanai City, Lanai, Hawaii CBDG Project No. 08-04
Lanai Community Plan Land Use Map



Urban Design

Goal: Preserve and enhance the unique urban design character of Lanai through consideration of planning, land use and design standards which respect the island's rural plantation history.

Objectives and Policies:

1. *Establish design standards in the commercial/civic center area of Lanai City, to provide special treatment in the maintenance and/or enhancement of the unique visual and physical identity of the town. Design standards should be based on the following guidelines:*
 - *Maintain existing scale and street layout pattern of Lanai City.*
 - *Develop off-street parking as part of expanded commercial facilities.*
 - *Promote an architectural style within the commercial/civic center areas that is consistent with existing buildings and neighborhood character.*
 - *Preserve Dole Park as the focal point of Lanai City.*
2. *Provide additional landscaping to Lanai City, to enhance the environment, utilizing native and non-invasive climate-adapted plants appropriate for the region.*
4. *Encourage the use of wood construction for residential and commercial projects.*

Physical Infrastructure

Goal: Provide adequate, reliable and well-designed public infrastructure systems in a timely fashion to meet the social, economic and public safety and welfare needs of the Lanai community.

Social Infrastructure

Goal: Provide public facilities and services system which is responsive to the needs of Lanai's rural island environment and lifestyle.

Health and Public Safety Objectives and Policies:

1. *Improve accessibility to medical and dental care by increasing professional or para-professional full-time staff*
2. *Expand public health programs, services and facilities which support family planning and the special needs of children, elderly and immigrants.*

3. *Ensure the long-term integrity of medical and emergency medical facilities and services with appropriate allocation of capital improvements funding and staff positions, adequate provision of supporting programs and facilities, and ready access to state-of-the art medical technologies.*

Planning Standards

The following planning standards are specific guidelines or measures for development and design. These standards are essential in clarifying the intent of the land use and town design objectives and policies and the Land Use Map.

2. *Building Height*

Limit building heights to two stories or 30 feet above grade except as follows:

- *Buildings within business/commercial areas surrounding Dole Park shall not exceed one story in height.*

4. *Building Design: All commercial buildings and government or private infrastructure improvements shall be designed in accordance with design guidelines developed for Lanai City.*

The Lanai Health Center will provide a health care facility designed for current medical-dental practices and procedures and will be open to the low- and moderate-income, uninsured, and underserved residents of Lanai. In addition, the design of Lanai Health Center will be in concurrence with the Lanai City Community Design Guidelines.

4.2.3 Lanai City Community Design Guidelines

The purpose of the *Lanai City Community Design Guidelines* (April 1997) is to document existing conditions and to establish an identifiable and unified urban design theme to be retained and carried on within Lanai City. The Lanai Design Guidelines specifically address the commercial uses within Lanai City. The guidelines also conform to policies identified in the Lanai Community Plan, as discussed in the previous section.

The proposed project is located within Lanai City and will be compatible with the existing structures in the surrounding area. In addition, the design of the Lanai Health Center will be in concurrence with the Lanai City Community Design Guidelines.

4.2.4 County of Maui Zoning

The zoning for the project site is “BCT” (Business Country Town) (see Figure 4.2).

4.2.5 Coastal Zone Management Objectives and Policies

Pursuant to the Hawaii Coastal Zone Management Act (Chapter 205A, HRS) all counties have enacted ordinances establishing Special Management Areas (SMA). The project site is not located within the County’s SMA.

This section addresses the project’s relationship to applicable coastal zone management considerations.

Recreational Resources

Objective: Provide coastal recreational opportunities accessible to the public.

Comment: The Health Center project will not affect access to the shoreline as it is not a shoreline property, nor is it in the vicinity of the island’s shoreline.

Historic Resources

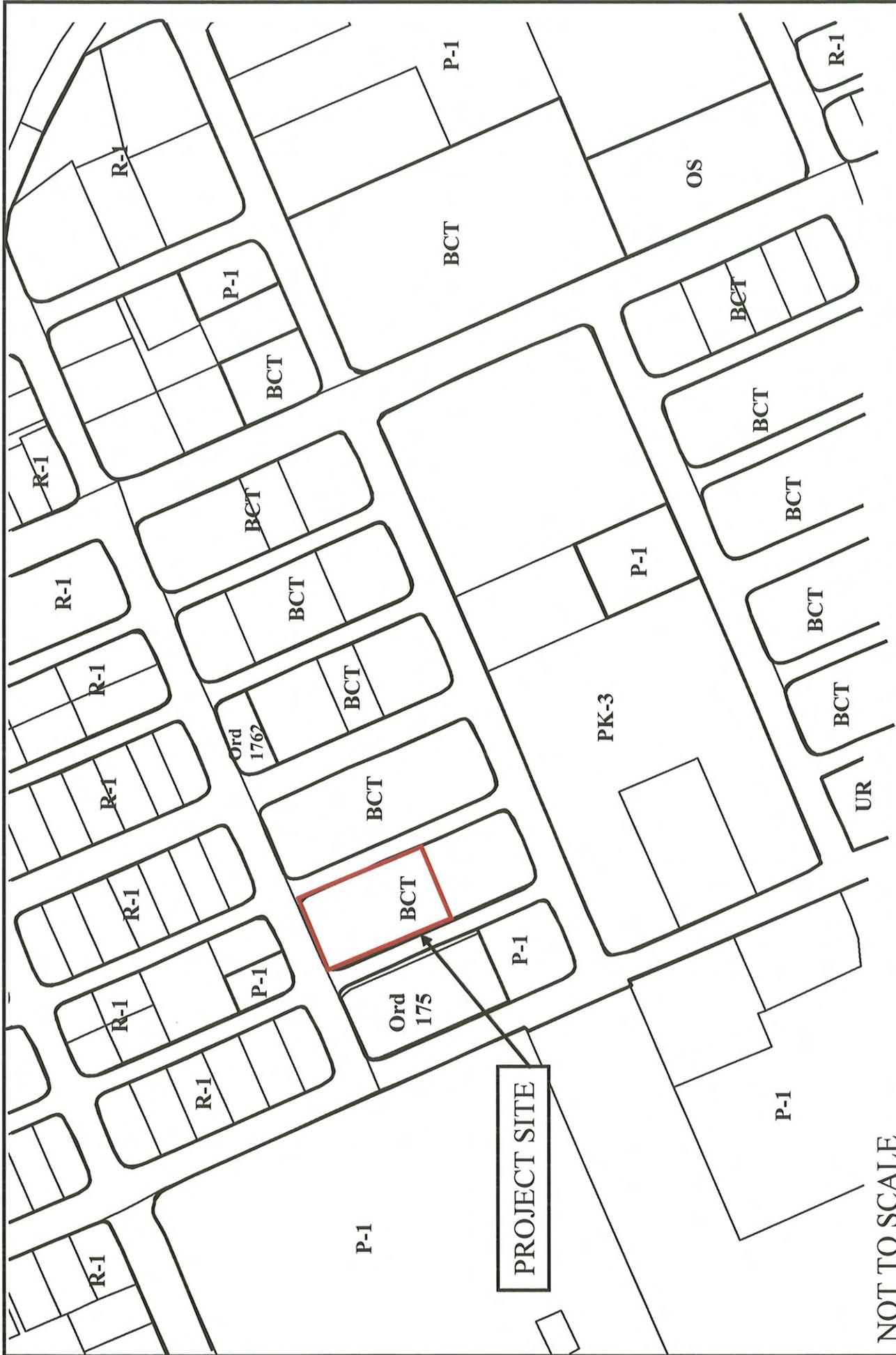
Objective: Protect, preserve, and where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone.

Comment: Based on the historic records and surface field inspection it is recommended that precautionary monitoring during grading of the project and excavation for foundations and footings of the planned facility and utility connections. Subsurface deposits may include indigenous and post contact cultural material remains, and remnants of structural remains, and possibly human burials.

In the event that human remains are identified during the course of excavation, all work in the immediate area should be stopped, the location secured, and SHPD contacted for further directions.

Scenic and Open Space Resources

Objective: Protect, preserve, and where desirable, restore or improve the quality of coastal and scenic and open space resources.



Lanai Community Health Center
 Lanai City, Lanai, Hawaii CBDG Project No. 08-04

FIGURE

4.2

COUNTY OF MAUI ZONING MAP



Comment: The Health Center project will be developed to ensure visual compatibility with the surrounding environment. The Health Center project is not located along the shoreline and is not anticipated to negatively impact coastal and scenic and open space resources.

Coastal Ecosystems

Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Comment: The Health Center project site is not located along the shoreline and will impact coastal ecosystems.

Economic Uses

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Comment: The Health Center project is located in Lanai City and is not a coastal dependent development.

Coastal Hazards

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Comment: The Health Center project is not located in a tsunami, flood, erosion or subsidence area. Appropriate mitigation measures will be implemented to mitigate storm water runoff associated the Health Center project.

Managing Development

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Comment: Opportunities for public review of the Health Center project is provided through the Environmental Assessment public comment process.

Public Participation

Objective: Stimulate public awareness, education, and participation in coastal management.

Comment: Opportunities for public review of the Health Center project is provided through the EA process.

Beach Protection

Objective: Protect beaches for public use and recreation.

Comment: The Health Center project is located inland in Lanai City at an elevation of about 1,600 feet mean sea level. No significant impacts on beaches are anticipated.

Marine Resources

Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Comment: The Health Center project is not located on or near the shoreline and is not anticipated to significantly impact marine resources.

5. ALTERNATIVES TO THE PROPOSED ACTION

5.1 No Action Alternative

The “no action” alternative would not result in the construction of the Lanai Community Health Center. The “no action” alternative would preclude short- and long-term beneficial and impacts described in this EA.

5.2 Alternative Sites

The Lanai Community Health Center considered an alternative site north of Dole Park near the existing Lanai Community Hospital and Straub Clinic. The alternative site is located on the one-way access loop road which also provides access to the Hospital and Clinic.

There were several drawbacks to the alternative site. The one-way access loop was not an ideal traffic pattern for access to the Health Center, especially given the presence of the other existing medical facilities. The alternative site has a slope which meant cutting or retaining walls would be needed to provide a level building pad. Lastly, the alternative site also had 6 to 10 large Northfolk pine trees which would have to been removed to construct the facility. Based on these considerations, the alternative site was not selected.

5.3 Alternative Development Concepts

An alternative building concept was considered for the Health Center. This alternative considered a “T” configuration for the building. This “T” concept would retain Sixth Street as the main entrance and use two parking areas, one with 9 stalls in one lot for visitors and one with 11 in the other for visitors and staff. The building would have a central waiting area accessible from both parking areas.

The alternative building would be designed with both the medical and dental/ specialty areas would be located on the south side along Gay Street adjacent to each other. The administrative and multi-purpose room would be located on the north or opposite side of the building along Houston Street.

Although this alternative concept would contain the same floor area, the building would have resulted in a single long corridor for the various treatment/examination rooms and would not have provided the separation of functions as the selected concept. Also, the

building would not have provided the same opportunities for using natural ventilation as the selected concept.

6. DETERMINATION

Short-term construction impacts include disruption to the Health Center project site and surrounding areas during construction, decline in air quality from construction activities, and increase in noise levels. Once construction has been completed, the short-term adverse impacts will no longer occur.

Based on analysis of the anticipated impacts, a Finding of No Significant Impact (FONSI) is anticipated for the Lanai Community Health Center. The significance criteria to make this determination are set forth below and in Hawaii Administrative Rules Title 11, State of Hawaii Department of Health, Chapter 200, Environmental Impact Statement Rules.

- 1) *Involve an irrevocable commitment to loss or destruction of any natural or cultural resources;*

The project site was previously developed in the 1920's and redeveloped in 1965. These previous uses have removed natural resources which may have been present at one time. Reuse or redevelopment of this previously developed site will not result in loss of natural resources.

Based on the historic records and surface field inspection, it is recommended that precautionary monitoring during grading of the project and excavation for foundations and footings of the planned facility and utility connections. Subsurface deposits may include indigenous and post contact cultural material remains, and remnants of structural remains, and possibly human burials.

In the event that human remains are identified during the course of excavation, all work in the immediate area should be stopped, the location secured, and SHPD contacted for further directions.

- 2) *Curtail the range of beneficial uses of the environment;*

The Health Center will use lands which were once used for single family houses and then later redeveloped into three dormitories in the mid 1960's. The Health Center will use an area of about 25,067.07 square feet (about 0.575 acres) which is a minor portion

of the Lanai City lands near Dole Park. Thus, the Health Center will not curtail the beneficial uses of the environment.

- 3) *Conflict with the State's long-term environmental policies or goals as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;*

The Health Center will not involve actions or activities which would adversely affect natural resources of the project site. The Health Center will be consistent with the guidelines of Chapter 344, HRS, as it will provide a facility to support medical and social service functions. As such, the Lanai Community Health Center will not conflict with the State's long-term environmental policies or goals as expressed in Chapter 344, HRS.

- 4) *Substantially affect the economic or social welfare of the community or state;*

The Health Center would provide short-term economic benefits in the form of construction jobs as well as employment associated with the operation of the Health Center. The Health Center will positively impact the social welfare of the community and the State by providing needed medical and social services.

- 5) *Substantially affect public health;*

The Health Center is anticipated to have a positive impact on public health by providing medical and social services to the residents of Lanai, especially to the uninsured and underinsured residents. The facility will be designed to provide sufficient space for residents of Lanai to seek proper and preventative medical and dental services and supporting services. The Health Center should improve overall public health of the community.

- 6) *Involve substantial secondary impacts, such as population changes or effects on public facilities;*

The Health Center will replace the existing facility and provide adequate facilities and systems to accommodate the medical and social services needs of those on Lanai who are uninsured and underinsured. The Health Center will not significantly increase demand for public facilities, services, and infrastructure. The Health Center will have a

total of 23 full time and part time employees, including about one-half who are residents of Lanai. Thus, there would not be secondary impacts related to population changes or the need for additional public facilities on Lanai to support operation of the Health Center.

7) *Involve a substantial degradation of environmental quality;*

Construction activities associated with the Health Center are anticipated to result in short-term impacts to noise, air quality, water quality, and traffic in the immediate project area. With the incorporation of mitigation measures during the construction period, the Health Center project will not result in long-term degradation of environmental quality.

8) *Have a cumulative effect upon the environment or involves a commitment for larger actions;*

The Health Center project will replace the existing facility and provide sufficient space to accommodate medical and social services for the residents of Lanai. The Health Center project is consistent with the County General Plan and zoning and is not anticipated to have a cumulative effect upon the environment.

9) *Affect a rare, threatened or endangered species;*

There are no known Federally protected, threatened or endangered species of plants or animals known to inhabit the project site or immediate vicinity.

10) *Detrimentially affect air or water quality or ambient noise levels;*

Operation of construction equipment would increase noise and exhaust emission levels in the immediate vicinity of the Health Center project site during the construction period. Once operational, the Lanai Community Health Center will not contribute significant additional noise or air emissions to the area.

11) *Affects or likely to suffer damage by being located in an environmentally sensitive area such as a floodplain, tsunami zone, beach, erosion-prone area, geographically hazardous land, estuary, fresh water or coastal water;*

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). Community Panel Number 1500030500E (revised September 25, 2009) shows the project site is within Zone X, "other areas determined to be outside the 0.2% annual chance floodplain". There are no flood hazards associated with the Health Center project site. Further, the project site is not located in the area designated as a tsunami evacuation zone. The project site is at elevation 1,610 feet mean sea level and not located in a coastal area.

- 12) *Substantially affect scenic vistas and viewplanes identified in county or state plans or studies;*

The Health Center project will replace a previously developed area. The Health Center project will be designed to be consistent with the Lanai City Community Design Guidelines and the character of the area. The Health Center project will not affect any scenic vistas or view planes identified in County or State plans or studies.

- 13) *Require substantial energy consumption.*

The Health Center will use natural ventilation in most areas of the building, except for medical examination rooms. The Health Center project will be submitted to the US Green Building Council for Leadership in Energy & Environmental Design (LEED) certification under Building Design & Construction. Features will be incorporated in the design of the building to the minimize energy consumption.

Based on these findings and the assessment of potential impacts from the Health Center project, a Finding of No Significant Impact (FONSI) is anticipated. Further, based on Hawaii Administrative Rules Title 11, State of Hawaii Department of Health, Chapter 200, Environmental Impact Statement Rules, Subchapter 6, Section 11-200-9 (4), construction of the Health Center does not warrant the preparation of an environmental impact statement preparation notice.

7. Permit and Approvals

County of Maui

- Building Permit
- Grading Permit
- Sewer Connection

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8. CONSULTED PARTIES

8.1 Pre-Assessment Consultation

The following agencies were consulted during the pre-assessment phase of the Draft Environmental Assessment. Each agency was sent a copy of a project summary and a request for their written comments on the project. Of those you formally replied, some had no comments, while others provided substantive comments as indicated by the ✓ and ✓✓ respectively. All written comments and responses are reproduced in Appendix A.

Federal

Department of the Army

U.S. Fish and Wildlife Service

National Resources Conservation Services, U.S. Dept. of Agriculture

U.S. Environmental Protection Agency

State of Hawaii

Department of Hawaiian Home Lands

Department of Health ✓✓

Department of Health, Maui District Office ✓✓

Department of Land and Natural Resources (DLNR)

 Division of Aquatic Resources ✓

 Engineering Division ✓

 Land Division ✓

Historic Preservation Division, Department of Land and Natural Resources (DLNR) ✓✓

Lanai Burial Council, DLNR

Office of Hawaiian Affairs ✓✓

County of Maui

Department of Fire and Public Safety

Department of Environmental Management ✓✓

Department of Parks & Recreation ✓

Planning Department ✓✓

Police Department ✓

Department of Public Works ✓✓

Department of Transportation ✓

Department of Water Supply ✓✓

Other

Alu Like, Inc.

Castle & Cooke Resorts, LLC ✓

Maui Electric Company Ltd. ✓

8.2 Agencies and Organizations to be Consulted on the Draft EA

The following is a list of agencies and organizations that will be consulted during the preparation of the Draft Environmental Assessment.

Federal

Department of the Army, US Army Engineer District, Honolulu

U.S. Fish and Wildlife Service

U.S. Dept. of Agriculture National Resources Conservation Services

U.S. Environmental Protection Agency

State

Department of Agriculture

Department of Business, Economic Development and Tourism, Office of Planning

Department of Hawaiian Home Lands

Department of Health

Department of Health, Office of Environmental Quality Control

Department of Land and Natural Resources (DLNR)

Historic Preservation Division, DLNR

Office of Hawaiian Affairs

County of Maui

Department of Fire and Public Safety

Department of Environmental Management

Department of Parks & Recreation

Planning Department

Police Department

Department of Public Works

Department of Transportation

Department of Water Supply

Officials

Senator J. Kalani English, 6th District

Representative Mele Carroll, 13th District

Councilmember Sol P. Kahoohalahala

Other

Maui Electric Company

Hawaiian Telcom

Oceanic Time Warner Cable

Alu Like, Inc.

Castle & Cooke Resorts, LLC

Lanai Public Library

This page intentionally left blank.

9. REFERENCES

County of Maui. *Lanai Community Plan*. January 1998.

County of Maui. *Lanai City Community Design Guidelines*. April 1997

County of Maui Department of Housing and Human Concerns. *Lanai Senior Center. Final Environmental Assessment*. December 2009.

County of Maui Department of Environmental Management. *Integrated Solid Waste Management*. February 2009.

Federal Emergency Management Agency Flood Insurance Rate Map Community Panel Number 1500030500E. Revised September 25, 2009

International Code Council, Inc. *International Building Code*. March 2000.

State of Hawaii Department of Agriculture. *Agricultural Lands of Importance to the State of Hawaii, Island of Molokai*. January 1977.

The Hawaii State Plan Chapter 226, Hawaii Revised Statutes. Office of the Governor Office of State Planning. 1988.

Title 11 Hawaii Administrative Rules State of Hawaii Department of Health Chapter 46 Community Noise Control. September 23, 1996.

State of Hawaii Department of Education. *Lanai High and Elementary School, School Status and Improvement Report Grades K-12 School Year 2008-2009*. November 2009.

State of Hawaii Department of Education. *Lanai High and Elementary School Master Plan Draft Environmental Assessment*. August 2009.

State of Hawaii Department of Transportation Airports Division. *Lanai Airport Master Plan Update*, June 1999.

State of Hawaii Department of Health Office of Environmental Planning. *Water Quality Standards Map of the Islands of Molokai, Lanai, and Kahoolawe*. October 1967

State of Hawaii Department of Health. *Title 11 Hawaii Administrative Rules Chapter 54 Water Quality Standards*. August 31, 2004

State of Hawaii Department of Health, *Title 11, Hawaii Administrative Rules Chapter 46 Community Noise Control*. September 23, 1996

State of Hawaii Department of Business and Economic Development & Tourism Office of Planning. Letter to US Department of Housing and Urban Development (HUD), Hawaii State Field Office (Ref No. P-10520). June 24, 2004,

US Department of Agriculture Soil Conservation Service. *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*. Issued August 1972.

U.S. Fish & Wildlife Service John H. Chaffee Coastal Barrier Resources System Website. http://www.fws.gov/habitatconservation/coastal_barrier.html Website access March 29, 2010.

U.S, Department of Transportation Federal Aviation Administration. Advisory Circular No. 150/5300-13 Change 7, Oct 1, 2002, and 150/5300-13 Change 11, Mar 28, 2007.

Appendix A

Consultation Letters

CHARMAINE TAVARES
Mayor
CHERYL K. OKUMA, Esq.
Director
GREGG KRESSE
Deputy Director



TRACY TAKAMINE, P.E.
Solid Waste Division
DAVID TAYLOR, P.E.
Wastewater Reclamation
Division

7453-01

4/15/10

JS
cc: ATH/Jem

COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2200 MAIN STREET, SUITE 100
WAILUKU, MAUI, HAWAII 96793

April 12, 2010

RECEIVED
APR 14 2010

WILSON OKAMOTO CORPORATION

Mr. John Sakaguchi
Wilson Okamoto Corporation
1907 South Beretania Street
Artesian Plaza, Suite 400
Honolulu, Hawaii 96826

SUBJECT: LANAI COMMUNITY HEALTH CENTER
DRAFT EA PRE-ASSESSMENT NOTICE
TMK (2) 4-9-006:011, LANAI CITY, LANAI

We reviewed the subject project as a pre-application consultation and have the following comments:

1. Solid Waste Division comments:
 - a. Discuss options for construction waste recycling, reuse, disposal.
2. Wastewater Reclamation Division (WWRD) comments:
 - a. Although wastewater system capacity is currently available as of 4/12/2010, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
 - b. Wastewater contribution calculations are required before building permit is issued.
 - c. Developer is not required to pay assessment fees for this area at the current time.
 - d. Plans shall show the existing property sewer service manhole near the property line. If a property sewer service manhole does not exist, one shall be installed.
 - e. Commercial kitchen facilities and medical related discharges within the proposed project shall comply with pre-treatment requirements (including grease interceptors, sample boxes, screens etc.)

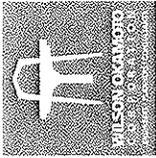
Mr. John Sakaguchi
April 12, 2010
Page 2

f. Non-contact cooling water and condensate should not drain to the wastewater system.

If you have any questions regarding this memorandum, please contact Gregg Kresge at 270-8230.

Sincerely,

Cheryl K. Okuma, Director



7953-01
May 17, 2010

1001 South Piikoi Street, Suite 200
Honolulu, HI 96814
Phone: 808-955-1119
Fax: 808-955-1119
www.wilsonokamoto.com

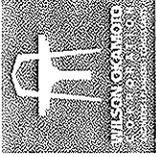
Ms. Cheryl Okuma, Director
County of Maui
Department of Environmental Management
200 South High Street
Wailuku, Hawaii 96793

Subject: Draft Environmental Assessment, Pre-Assessment Notice;
Lanai Community Health Center, CBDG Project No. 08-04
Lanai City, Lanai, Hawaii; TMK: 4-9-006:011
Response to Comment

Dear Ms. Okuma:

Thank you for your letter dated April 12, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice; for the Lanai Community Health Center, CBDG Project No. 08-04 project. Our responses follow:

1. Solid Waste Division
 - a. The Draft EA will include a discussion of solid waste issues related to the project.
2. Wastewater Reclamation Division
 - a. The Draft EA will note, although wastewater system capacity is currently available, the wastewater capacity cannot be confirmed until issuance of the building permit.
 - b. The Draft EA will include wastewater calculations used in design of the facility.
 - c. The Draft EA will state that the Health Center will not be required to pay assessment fees at this time.
 - d. The Draft EA will include a site plan. The information regarding the sewer manholes will be provided to the designer.
 - e. The information regarding the sewer design requirements will be provided to the designer.
 - f. The Draft EA will state that non-contact cooling water and condensate will not drain to the wastewater system.



7953-01
Letter to Ms. Cheryl Okuma
Page 2
May 17, 2010

We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murdock, AHL
D. Shaw, LCHC

CHARMAINE TAVARES
Mayor



DEPARTMENT OF PARKS & RECREATION
Planning & Development Division
700 Halia Nakoa Street, Unit 2, Wailuku, Hawaii 96793

February 17, 2010

John L. Sakaguchi, Senior Planner
Wilson Okamoto Corporation
1907 South Bereiania Street, Suite 400
Honolulu, Hawaii 96826

RE: Draft Environmental Assessment, Pre-Assessment Notice
Lanai Community Health Center, CDBG Project No. 08-04
Lanai City, Lanai, Hawaii; TMK: (2) 4-9-006:011
Request for Comment

Dear Mr. Sakaguchi:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment, Pre-Assessment documents for the Lanai Community Health Center on the Island of Lanai.

At this time we have no comment to offer regarding this proposed development. We would, however, appreciate the opportunity to review the project design as it further develops.

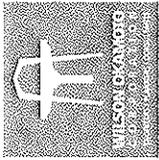
Should you have any questions, please feel free to call me, or Patrick Matsui, Chief of Parks Planning & Development at 808-270-7931.

Sincerely,


TAMARA HORCAJO
Director of Parks and Recreation

cc: Patrick Matsui, Chief of Parks Planning & Development

TH:PTM:rh



7953-01
May 17, 2010

Ms. Tamara Horcajo, Director
Department of Parks and Recreation
County of Maui
700 Halia Nakoa Street, Unit 2
Wailuku, HI 96793

Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CDBG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment

Dear Ms. Horcajo:

Thank you for your letter dated February 17, 2010 in the Draft Environmental Assessment (EA), Pre-Assessment Notice; for the Lanai Community Health Center, CDBG Project No. 08-04 project.

The Draft EA will include that the County of Maui Department of Parks and Recreation had no comments to offer at this time.

We appreciate your participation in the Draft EA review process.

Sincerely,



John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murdock, AHL
D. Shaw, LCHC

CHARMAINE TAVARES
Mayor
JEFFREY S. HUNT
Director
KATHLEEN ROSS AOKI
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

April 15, 2010

RECEIVED
APR 15 2010

WILSON BRADSHAW CORPORATION

Mr. John Sakaguchi, AICP
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826

Dear Mr. Sakaguchi:

SUBJECT: COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT (EA) PRE-ASSESSMENT NOTICE FOR THE PROPOSED LANAI HEALTH CENTER, LOCATED IN LANAI CITY, LANAI, HAWAII; TMK: (2) 4-9-006:011 (POR.) (EAC 2010/0002)

The Department of Planning (Department) is in receipt of the above-referenced request for comments on the Lanai Health Center prior to the development of a Draft EA. The Department understands the proposed action includes the following:

- Demolition of three (3) one-story apartment buildings that were formerly used for plantation worker housing.
- The subdivision of TMK: (2) 4-9-006:011
- The development and operation of a new Lanai Health Center building and associated parking lot.

Based on the foregoing, the Department provides the following comments on the Draft EA:

1. The Land Use Designations for the project are assumed to be as follows:
 - a. State Land Use: Urban
 - b. Lanai Community Plan: Business
 - c. County Zoning: Business Country Town
 - d. Other: As stated, the site is within the proposed Lanai City Business Country Town Historic district for the National Register of Historic Places.

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793
MAIN LINE (808) 270-7735; FACSIMILE (808) 270-7824
CURRENT DIVISION (808) 270-8206; LONG RANGE DIVISION (808) 270-7214; ZONING DIVISION (808) 270-7253

Mr. John Sakaguchi
April 15, 2010
Page 2

2. The Department could not determine who would be the Accepting Authority for the Draft EA. Please clarify.
3. The age and condition of the three (3) one-story apartment buildings was not described in the pre-assessment letter. In the draft EA, please provide a description of the history and use of the buildings, along with a description of their condition.
4. Please also include an assessment of the impacts the project will have on the activities and programs of the Lanai Art Center. The Lanai Art Center provides a number of programs to the Lanai community that enhances the quality of life of Lanai residents. Please take this into consideration in the evaluation of impacts.
5. Finally, please indicate how the building will aesthetically impact the Business Country Town district.

Thank you for the opportunity to comment. Should you require further clarification, please contact Erin Wade, Small Town Planner at erin.wade@mauicounty.gov or at 270-5517.

Sincerely,


CLAYTON I. YOSHIDA, AICP
Planning Program Administrator
for JEFFREY S. HUNT, AICP
Planning Director

XC: Erin Wade, AICP, Small Town Planner
Jocelyn Pereira, Tri-Isle Main Street Resource Center
Kwan Law, Architects Hawaii Limited
2010 EAC File
General File
JSH:CY:EKW:haq
K:\WP_DOCS\PLANNING\EAC\2010\0002_LanaiHealthCtr\CommentLtr.doc



7953-01
May 17, 2010

Ms. Kathleen Ross Aoki, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

Subject: Draft Environmental Assessment, Pre-Assessment Notice,
Lanai Community Health Center, CBDG, Project No. 08-04
Lanai City, Lanai, Hawaii; TMK: 4-9-006:011
Response to Comment

Dear Ms. Aoki:

Thank you for your letter dated April 15, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice, for the Lanai Community Health Center, CBDG Project No. 08-04 project. Our responses follow:

1. The land use designations for the project site will be included in the Draft EA.
2. The County of Maui, Office of the Mayor through the US Department of Housing and Urban Development (HUD) Community Development Block Grant (CDBG) program has issued a grant to the Lanai Community Health Center, a non-profit agency, to plan and design, and potentially to construct, the Lanai Community Health Center. In Maui, the CDBG office is within the Office of the Mayor which will be the accepting agency for the Draft and Final EA.
3. Information regarding the existing structures on the project site will be included in the Draft EA.
4. The Draft EA will include information about the activities and programs of the Lanai Art Center.
5. The Draft EA will provide information about the design characteristics of the Health Center.

We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi
John L. Sakaguchi, AICP, Senior Planner
cc: H. Matsumoto, CBDG
M. Murdock, AHL
D. Shaw, LCHC



Maui Police Department
55 Mahalani Street
Wailuku, HI 96793

7953-01
2/10/10

FACSIMILE TRANSMISSION COVER SHEET

DATE : 02 - 18 - 2010

cc: AHL
COM/lem

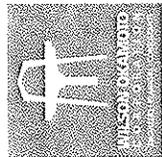
TO :	John L. Sakaguchi, AICP, Senior Planner
AGENCY NAME :	Wilson Okamoto Corporation
OFFICE PHONE NO. :	(808) 946-2277
FAX PHONE NO. :	(808) 946-2253

FROM :	Gary Yabuta
DIVISION/SECTION :	Chief of Police
OFFICE PHONE NO. :	(808) 244-6300
FAX PHONE NO. :	(808) 244-6411

This fax consists of 1 pages (including cover sheet). If there are any problems with this transmission, please contact the sender.

Contents :

Comments : No adverse impacts noted by Officer Fyland, Lanai Patrol
re Lanai Community Health Center, CBDG Proj #08-04
Therefore no comments from MPD



7953-01
May 17, 2010

Chief Gary Yabuta, Chief of Police
Police Department
County of Maui
55 Mahalani Street
Wailuku, HI 96793

Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CBDG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment

Dear Chief Yabuta:

Thank you for your facsimile dated February 18, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice; for the Lanai Community Health Center, CBDG Project No. 08-04 project. The Draft EA will state no adverse impacts have been noted by the Maui Police Department.

We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murdock, AHL
D. Shaw, LCHC

CHASIMANE TAVARES
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7555



COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET, ROOM NO. 434
WAILUKU, MAUI, HAWAII 96793

February 24, 2010

Mr. John L. Sakaguchi, A.I.C.P., Senior Planner
WILSON OKAMOTO CORPORATION
1907 South Beretania Street
Artesian Plaza, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

**SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, PRE-ASSESSMENT
NOTICE; LANAI COMMUNITY HEALTH CENTER, CDBG
PROJECT NO. 08-04; LANAI CITY, LANAI, HAWAII;
TMK: (2) 4-9-006:011**

We reviewed the subject application and have the following comments:

1. Landscaping along roadways shall be provided with root barriers to prevent roots from uplifting roads, curbs/gutters, and sidewalks.
2. Ensure that adequate sight distance exists for vehicles entering/exiting the parking lot's driveway(s).
3. One (1) open permit No. 93-1142 requires final inspection.

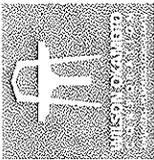
Please call Michael Miyamoto at (808) 270-7845 if you have any questions regarding this letter.

Sincerely,

Milton M. Arakawa
MILTON M. ARAKAWA, A.I.C.P.
Director of Public Works

MMA:MMM:ls
xc: Highways Division
Engineering Division

S:\LUCAS\MML\lanai_Comm_HHW_Ctr_dea_pa_49066011_ls.wpd



7953-01
May 17, 2010

17953-01
Development Services Administration
Engineering Division
Highways Division
2/24/10
MS

Mr. Milton M. Arakawa, Director
Department of Public Works
County of Maui
200 South High Street, Room 434
Wailuku, HI 96793

**Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CDBG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment**

Dear Mr. Arakawa:

Thank you for your letter dated February 24, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice, for the Lanai Community Health Center, CDBG Project No. 08-04 project. Our responses follow:

1. The Draft EA will state that landscaping plans will be developed to ensure landscaping along roadways do not affect adjacent roads, curbs/gutters and sidewalks.
2. The Draft EA will include a site plan showing access driveways to the visitor and staff parking lots. Site improvements, including plantings, will be sited to ensure adequate site distance will be provided for vehicles entering/exiting the driveways.
3. Based on discussions with Mike Miyamoto, Open Permit No 93-1142 is for work located at the intersection of Queen and Seventh Streets. The Health Center project site is at the intersection of Sixth, Houston, and Gay Streets. Thus, the open permit is not applicable to this project.

We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi
John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murdock, AHL
D. Shaw, LCHC

CHARMAYNE JAVARES
Mayor



DEPARTMENT OF TRANSPORTATION

COUNTY OF MAUI
200 South High Street
Wailuku, Hawaii, USA 96793-2155

February 9, 2010

Mr. John L. Sakaguchi, AICP, Senior Planner
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

SUBJECT: LANAI COMMUNITY HEALTH CENTER

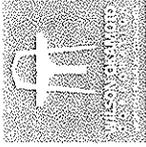
Thank you for opportunity to comment on this important project.

The County Department of Transportation does not operate the Maui Bus on Lanai. However, we do operate social service transportation through Maui Economic Opportunity (MEO). As such, we recommend that provisions be made for a bus stop or bus stop area at the health center. We foresee MEO disembarking a fair amount of passengers there.

Please do not hesitate to contact me if the Department may be of any further assistance or clarification.

Sincerely,

DON MEDEIROS
Director of Transportation



7953-01
May 20, 2010

Mr. Don Medeiros, Director
Department of Transportation
County of Maui
200 South High Street
Wailuku, HI 96793

Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CDBG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment

Dear Mr. Medeiros:

Thank you for your letter dated February 9, 2010. Our responses follow:

The Draft EA will include that the County Department of Transportation does not operate the Maui Bus on Lanai, however social services transportation is provided on Lanai through Maui Economic Opportunity (MEO).

The Draft EA will include the Health Center will work with MEO to identify a suitable bus stop.

We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murdock, AHL
D. Shaw, LCHC

CHARMAINE TAVARES
Mayor



DEPARTMENT OF WATER SUPPLY

COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

JEFFREY K. ENG
Director
ERIC H. YAMASHIGE, P.E., L.S.
Deputy Director

Handwritten initials: JSK

cc: AHL
AWK
MKL

RECEIVED
MAR 16 2010

WILSON OKAMOTO CORPORATION

March 9, 2010

Mr. John Sakaguchi, Sr. Planner
Wilson Okamoto Corporation
1907 S Beretania Street
Honolulu, Hawaii 96826

Re: TMK: (2) 4-9-006:011
Project Name: Lanai Community Health Center, CBDG Project No. 08-04
Draft Environmental Assessment, Pre-Assessment Notice

Dear Mr. Sakaguchi:

Thank you for the opportunity to comment on this Draft Environmental Assessment (DEA) pre-assessment notice.

Source Availability, Consumption and System Infrastructure

The EA should identify sources and potable and non-potable demand for the proposed Lanai Community Health Center project. Potable water service to the subject lot is provided by the Lanai Water Company's Leeward Well 8 and Windward Well 6. 8-inch water lines run along Houston, Sixth and Gay Streets. Fire flow, domestic and irrigation calculations will be reviewed during the building permit process in accordance to system standards. Anticipated demand using system standards, would be approximately 5,880 gallons per day.

Conservation

To mitigate demand on Lanai resources, please find attached our checklist of Water Conservation Ideas for Commercial Buildings. We recommend that the following conservation measures be included in the project design and noted in the DEA:

Use Climate-adapted Plants: We recommend limiting turf areas and using native climate-adapted plants for all landscaping. The project is located in Plant Zones 3 and 5. Native plants adapted to the natural climate and rainfall of the area conserve water and protect the watershed from degradation due to invasive alien species. Please find attached our planting brochure.

"By Water All Things Find Life"

The Department of Water Supply is an Equal Opportunity provider and employer. To file a complaint of discrimination, write: USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410. Or call (202) 720-5964 (voice and TDD)

Printed on recycled paper

Proposed Lanai Community Health Center
Page 2

Eliminate Single-Pass Cooling: Single-pass, water-cooled systems should be eliminated per Maui County Code Subsection 14.21.20. Although prohibited by code, single-pass water cooling is still manufactured into some models of air conditioners, freezers, and commercial refrigerators. **Maintain Fixtures to Prevent Leaks:** A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day. The applicant should establish a regular maintenance program.

Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20A.680 requires the use of low-flow water fixtures and devices in faucets, showerheads, water closets, and hose bibs. **Prevent Over-Watering By Automated Systems:** Provide rain-sensors on all automated irrigation controllers. Check and reset controllers at least once a month to reflect the monthly changes in evapo-transpiration rates at the site. As an alternative, provide the more automated, soil-moisture sensors on controllers.

Pollution Prevention

In order to protect ground and surface water sources, please find enclosed Best Management Practices (BMPs) for medical facilities and BMPs designed to minimize infiltration and runoff from construction. The mitigation measures below should be noted in the EA and implemented during construction:

- Prevent cement products, oil, fuel and other toxic substances from leaching into the ground.
- Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work.
- Retain ground cover until the last possible date.
- Stabilize denuded areas by sodding or planting as soon as possible. Replanting should include soil amendments and temporary irrigation. Use high seeding rates to ensure rapid stand establishment.
- Avoid fertilizers and biocides, or apply only during periods of low rainfall to minimize chemical run-off.
- Keep run-off on site.

Should you have any questions, please contact our Water Resources and Planning Division at 808-244-8550.

Sincerely,

Jeffrey K. Eng, Director

mhb
cc: consultant, engineering division
Attachments: "Saving Water in the Yard"; "Checklist of Water Conservations for Commercial Buildings"; BMPs for Medical Facilities

Best Management Practices for Medical Facilities

LAND USE: Medical Facilities

CONCERN: Laboratory chemicals, cold sterilization, pharmaceuticals

GOAL: Wastewater Control

SUGGESTED PRACTICES:

Pollution prevention for mercury and silver:

Silver containing wastes: The major sources of silver is from x-ray and photographic equipment. Another source of silver is silver nitrate solutions used to treat burns. Solutions with high concentrations of silver should be collected and disposed of as hazardous waste.

Mercury: The primary sources of mercury in medical facilities are equipment, such as measurement devices, lamps and electrical equipment. Proper handling and disposal of mercury-containing equipment should prevent mercury from entering the sanitary sewer. In most cases, alternative products that do not contain mercury are available. (Terrene Institute). Mercury thermometers and manometers can be replaced by equipment with electronic sensors. Cantor tubes can often be replaced by Anderson tubes which contain no mercury. Electrical equipment containing mercury can be replaced by solid state devices and fiber optic equipment. Batteries can be replaced by lithium, zinc air or alkaline batteries. There are no effective substitutes for high energy fluorescent lights, but technology is reducing the volume of mercury required in such lights.

Mercury is also present in some laboratory chemicals and pharmaceutical preparations. The amount of mercury in antiseptics, diuretics, and skin preparations is low making these compounds unlikely to be significant sources. For other mercury-containing chemicals however, there are alternatives available.

Cold Sterilization: Formaldehyde and glutaraldehyde solutions must be treated and detoxified prior to discharge to the sewer. In certain cases, these solutions may be replaced with peracetic acid.

Laboratories: Wet chemistry methods may be replaced with automated chemical analyzers. Cyanide-free solutions may be available for cell sorting and counting analyzers. Alternatives, such as naphtha isoparaffinic hydrocarbons, may be used in place of xylenes. If xylenes must be used, spent solutions should be recycled and not discharged to the sanitary sewer.

Pharmacy: Neither medicines containing significant levels of metals nor expired medicines should be discharged to the sewer. Chemicals should be clearly labeled.

Utilities and Maintenance: Use automatic injection for laundry and boiler chemicals. Replace single pass cooling systems with recirculating systems. Avoid use of cooling water additives containing tributyltin or copper. Use latex paints instead of oil-based paints. Replace solvents with detergent-based cleaning agents. Replace phenolic disinfectants with quaternary amine disinfectants.

REFERENCE: Residential & Commercial Source Control Programs. WERF 1998

A Checklist of Water Conservation Ideas For

Commercial Buildings

This checklist provides water conservation tips successfully implemented by industrial and commercial users. This list has been revised from the original copy first published and distributed by the Los Angeles Department of Water and Power.

General suggestions

Increase employee awareness of water conservation.

Install signs encouraging water conservation in employee and customer restrooms.

When cleaning with water is necessary, use budgeted amounts.

Determine the quantity and purpose of water being used.

Read water meter weekly to monitor success of water conservation efforts.

Assign an employee to monitor water use and waste.

Seek employee suggestions on water conservation; put suggestion boxes in prominent areas.

Determine other methods of water conservation.

Building maintenance

Check water supply for leaks.

Turn off any unnecessary flows.

Repair dripping faucets and showers and continuously running or leaking toilets.

Install faucet aerators where possible.

Reduce toilet water use by adjusting flush valves or installing dams and flapper mechanisms.

As appliances or fixtures wear out, replace them with water-saving models.

Shut off water supply to equipment rooms not in use.

Minimize the water used in cooling equipment in accordance with manufacturers' recommendations. Shut off cooling units when not needed.



Cafeteria area

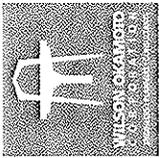
Turn off continuous flow used to clean the drain trays.

Turn off dishwasher when not in use. Wash full loads only.

Use water from steam tables to wash down cooking area.

Do not use running water to melt ice or frozen foods.

Use water-conserving ice makers.



7953-01
May 17, 2010

Wilson Okamoto
1775 Kalia Road, Suite 200
Honolulu, Hawaii 96815
Tel: 808-935-2777
Fax: 808-935-2773
www.wilsonokamoto.com

Mr. Jeffrey K. Eng, Director
Department of Water Supply
County of Maui
200 South High Street
Wailuku, HI 96793

Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CDBG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment

Dear Mr. Eng:

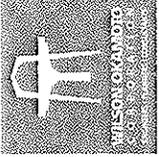
Thank you for your letter dated March 9, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice, for the Lanai Community Health Center, CDBG Project No. 08-04 project. Our responses follow:

Source Availability, Consumption and System Infrastructure: The Draft EA will state that the Lanai Water Company Leeward Well 8 and Windward Well 6 as the water sources for the project. The Draft EA will state 8-inch water lines are located along Houston, Sixth, and Gay Streets. The anticipated demand will be included in the Draft EA.

Conservation: The measures included in the checklist for Water Conservation Ideas for Commercial Buildings will be provided to the design team for consideration in the design of the project. At this time, the preliminary design drainage drawings show the intent is to maintain the existing drainage patterns and drainage discharge points off the site. Drainage will generally sheet flow from Houston Street towards Gay Street. The increased drainage from the proposed site will be detained on-site, utilizing landscaped areas along Gay Street as detention basins and swales within the site. The swales and basins would also function as bio-swales.

The Draft EA will also state that the Health Center will submit to the US Green Building Council for Leadership in Energy & Environmental Design certification under Building Design and Construction.

Pollution Prevention: The mitigation measures provided will be considered and implemented where appropriate.



7953-01
Letter to Mr. Jeffrey K. Eng
Page 2
May 17, 2010

We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murdock, AHL
D. Shaw, LCHC



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

Mr. John L. Sakiguchi, AICP
March 8, 2010
Page 2

03016PSS.10

03016PSS.10

March 8, 2010

RECEIVED
MAR 10 2010

Mr. John L. Sakiguchi, AICP
Senior Planner
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Subject: Draft Environmental Assessment, Pre-Assessment Notice for Lanai Community Health Center, CBDG Project No. 08-04 Lanai City, Island of Lanai, Hawaii
TMK: (2) 4-9-006-011

Dear Mr. Sakiguchi:

The Department of Health (DOH), Clean Water Branch (CWB), received your Request for Comment, dated February 12, 2010, and project summary sheet and location map for the subject project. The DOH-CWB has reviewed the document and offers these comments on your project. Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at <http://www.hawaii.gov/health/environmental/envy-planning/landuse/CWB-standardcomment.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters

(HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting the applicable Notice of Intent (NOI) form:

- a. Storm water associated with construction activities, including excavation, grading, clearing, demolition, uprooting of vegetation, equipment staging, and storage areas that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the start of the construction activities.
- b. Discharges of hydrotesting water.
- c. Discharges of construction activity dewatering.

You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.

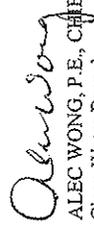
3. For types of wastewater discharges not covered by an NPDES general permit or discharges to Class AA or Class 1 State waters, you may need an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html>.
4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage is required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

Mr. John L. Sakiguchi, AICP
March 8, 2010
Page 2

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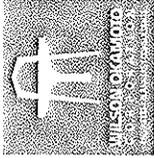
If you have any questions, please visit our website at
<http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>, or contact the
Engineering Section, CWB, at 586-4309.

Sincerely,


ALEC WONG, P.E., Chief
Clean Water Branch

SS:ml

c: Mr. Roland Asakura, CWB, Maui District Health Office [via e-mail only]
DOH-EPO #1-3057 [via email only]



7953-01
May 17, 2010

Mr. Alec Wong, P.E., Chief
Clean Water Branch
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CDBG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment

Dear Mr. Wong:

Thank you for your letter dated March 8, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice; for the Lanai Community Health Center, CDBG Project No. 08-04 project. Our responses follow:

1. The Draft EA will state that the proposed project will comply with HAR, Chapters 11-54 and 11-55, as applicable.
2. The Draft EA will include:
 - a. The project site will be less than 1.0-acre. Should the area of disturbance exceed 1.0-acre, a National Pollutant Discharge Elimination (NPDES) general permit coverage Notice of Intent (NOI) will be submitted prior to start of construction.
 - b. The Health Center project includes construction of water and fire protection lines. Should discharges of hydrotesting water be required, a NPDES permit for hydrotesting will be submitted.
 - c. The Health Center construction will include slab foundations and footings. Dewatering is not anticipated at this time. Should discharges of dewatering be required, a NPDES permit for dewatering will be submitted.
3. The Draft EA will state that the Health Center project site is approximately 0.575 acres and located at 1,600 feet mean sea level and about 4.5 miles from the shoreline. Nearby State waters are Class 2 Inland. An NPDES Individual permit is not anticipated.



7953-01
Mr. Alec Wong, P.E., Chief
Page 2
May 17, 2010

4. The Draft EA will state that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 Water Quality Certification are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

We appreciate your participation in the Draft EA review process.

Sincerely,

A handwritten signature in black ink, appearing to read 'John L. Sakaguchi'.

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murock, AHL
D. Shaw, LCHC



STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HUGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

February 23, 2010

Mr. John L. Sakaguchi
AICP, Senior Planner
Wilson Okamoto Corporation
1907 South Bertania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

**Subject: Draft Environmental Assessment, Pre-Assessment Notice for Lanai
Community Health Center, CBDG Project No. 08-04 Lanai City,
Lanai, Hawaii
TMK: 4-9-006:11**

Thank you for the opportunity to comment this project. The following comments are offered:

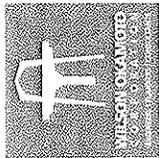
1. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules, Chapter 11-46 "Community Noise Control". A noise permit may be required and should be obtained before the commencement of this project.
2. The Department of Health supports the project to be connected to the Lanai Wastewater Reclamation Facility and Lanai Water Company.

Should you have any questions, please call me at 808 984-8230 or e-mail me at patricia.kitkowski@doh.hawaii.gov.

Sincerely,

Patricia Kitkowski

Patricia Kitkowski
Acting District Environmental Health Program Chief



1907 South Bertania Street
Honolulu, Hawaii 96826
Phone: 808-984-7777
Fax: 808-984-7234
www.doh.hawaii.gov

7953-01
May 17, 2010

Ms. Patti Kitkowski, Acting District Chief
State of Hawaii
Department of Health
Maui District Health Office
Environmental Health Program
54 High Street
Wailuku, HI 96793

**Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CBDG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment**

Dear Ms. Kitkowski:

Thank you for your letter dated February 23, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice, for the Lanai Community Health Center, CBDG Project No. 08-04 project. Our responses follow:

1. The Draft EA will include that construction of the Health Center will, most likely, occur during daytime working hours. However, should the contractor elect to work during other hours, a noise permit will be necessary.
2. The Draft EA will include that wastewater from the Health Center will connect to existing County lines and flows will be directed to the Lanai Wastewater Reclamation Facility. Water service will be from the Lanai Water Company.

We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murdock, AHL
D. Shaw, LCHC

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 1, 2010

RECEIVED

MAR 03 2010

WILSON OKAMOTO CORP.

Wilson Okamoto Corporation
1907 South Beretania Street Suite 400
Honolulu, Hawaii 96826

Attention: Mr. John L. Sakaguchi, AICP, Senior Planner

Ladies and Gentlemen:

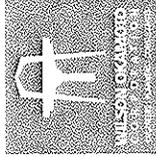
Subject: Pre-Assessment for Draft Environmental Assessment for Lanai
Community Health Center

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Division of Aquatic Resources, Engineering Division, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Morris M. Atta
for Morris M. Atta
Administrator



7953-01
May 17, 2010

Mr. Morris M. Atta, Administrator
Land Division
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, HI 96809

Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CDBG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment - Land Division

Dear Mr. Atta:

Thank you for your letter dated March 1, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice; for the Lanai Community Health Center, CDBG Project No. 08-04 project.

The Draft EA will include that the Land Division had no comments to offer at this time.

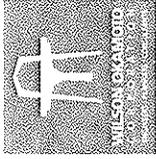
We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CDBG
M. Murdock, AHL
D. Shaw, LCHC



7953-01
May 17, 2010

Mr. Morris M. Atta, Administrator
Land Division
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, HI 96809

Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CDBG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment - Division of Aquatic Resources

Dear Mr. Atta:

Thank you for your letter dated March 1, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice, for the Lanai Community Health Center, CDBG Project No. 08-04 project.

The Draft EA will note that the Division of Aquatic Resources has no objections at this time.

We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murdock, AHL
D. Shaw, LCHC

LARRY D. THIELER
DIRECTOR OF LAND AND NATURAL RESOURCES
CHAIRMAN OF THE BOARD OF LAND AND NATURAL RESOURCES
COMMISSIONER OF WATER RESOURCES MANAGEMENT

AQUATIC RESOURCES: 2863	
DIRECTOR	
COMA FISH	
AQ RESEVY	
AQ REC	
PLANNER	
STAFF SVCS	
REG/HUH	
STATISTICS	
AFRGFD AID	
EDUCATION	
SECRETARY	
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DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII
P.O. BOX 621
HONOLULU, HAWAII 96809

February 9, 2010

MEMORANDUM

- TO: DLNR Agencies:
- Div. of Aquatic Resources
 - Div. of Boating & Ocean Recreation
 - Engineering Division
 - Div. of Forestry & Wildlife
 - Div. of State Parks
 - Commission on Water Resource Management
 - Office of Conservation & Coastal Lands
 - Land Division --
 - Historic Preservation



FROM: Morris M. Atta
SUBJECT: Pre-Assessment for draft environmental assessment for Lanai Community Health Center Project
LOCATION: Island of Lanai
APPLICANT: Wilson Okamoto Corporation

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by March 2, 2010.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- (X) We have no objections.
- () We have no comments.
- () Comments are attached.

Signed:
Date: 22 Feb 2010



DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/MorrisAUA
RE: PreAssessmentDEALanaiComHealthCenter
Maui-496

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 9, 2010

MEMORANDUM

TO: **DLNR Agencies:**
 Div. of Aquatic Resources
 Div. of Boating & Ocean Recreation
 Engineering Division
 Div. of Forestry & Wildlife
 Div. of State Parks
 Commission on Water Resource Management
 Office of Conservation & Coastal Lands
 Land Division -
 Historic Preservation

FROM: *Morris M. Atia*
SUBJECT: Pre-Assessment for draft environmental assessment for Lanai Community Health Center Project
LOCATION: Island of Lanai
APPLICANT: Wilson Okamoto Corporation

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by March 2, 2010.
If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

We have no objections.
 We have no comments.
 Comments are attached.
Signed: *[Signature]*
Date: *2/19/10*

COMMENTS

- We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone _____.
- Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone X. The Flood Insurance Program does not have any regulations for developments within Flood Zone X.
- Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is _____.
- Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.
- Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County/NFIP Coordinators below:
 - Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
 - Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.
 - Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
 - Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

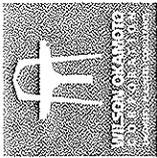
- The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
- The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

Additional Comments: _____
Other: _____

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed: *[Signature]*
Date: *2/19/10*
CAROL TYAU-BEAM, ACTING CHIEF ENGINEER

RECEIVED
LAND DIVISION
2010 FEB 22 P 2:50
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII



7953-01
May 17, 2010

Wilson Okamoto
Professional Services, Inc.
1000 Kalia Road, Suite 400
Honolulu, HI 96813
Tel: (808) 943-1111
Fax: (808) 943-1113
www.wilsonokamoto.com

Mr. Morris M. Atta, Administrator
Land Division
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, HI 96809

Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CDBG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment – Engineering Division

Dear Mr. Atta:

Thank you for your letter dated March 1, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice, for the Lanai Community Health Center, CDBG Project No. 08-04 project.

The Draft EA will note the proposed project is located within the Flood Insurance Rate Map (FIRM) Zone X and that the Flood Insurance Program does not have any regulations for developments in Zone X.

We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murrcock, AHL
D. Shaw, LCHC

PHONE (808) 594-1888



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPIOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

7553-01
3/15/10
FAX (808) 594-1885

JS
cc: ABC

March 02, 2010

HRD10-4825

Wilson Okamoto Corporation
Attn: John L. Sakaguchi, AICP, Senior Planner
1907 South Beretania Street, Suite 400
Honolulu, HI 96826

Re: Draft Environmental Assessment, Pre-Assessment Notice; Lana'i Community Health Center, CBDG Project No. 08-04; Lana'i City, Lana'i, Hawai'i; TMK: 4-9-006:011; Request for Comment

Aloha e Mr. Sakaguchi:

Thank you for the opportunity to comment on the above-referenced project.

The Office of Hawaiian Affairs (OHA) is in receipt of the above-referenced Draft Environmental Assessment (DEA), Pre-Assessment Notice. Applicant Lana'i Community Health Center (LCHC) is considering construction of a new health care facility in Lana'i City which will provide accessible primary medical care, dental care, behavioral health services, prenatal, family planning, nutrition and preventive health education services open to the low- and moderate-income, uninsured, and underserved residents of Lana'i, State of Hawai'i, and land leased from Center Castle & Cooke Resorts LLC, will be used for operation of the LCHC. OHA offers the following comments.

We look forward to reviewing the DEA's analysis and mitigation measures relating to the project's impact primarily on historic and cultural properties and/or resources. We note that in January 2009, the County of Maui Planning Department and the State of Hawai'i Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD) issued a Draft National Register of Historic Places Registration Form for Lana'i City Business Country Town historic district, a 17-block area located in the center of Lana'i City. We understand that the Draft Registration Form is still under review.

OHA further understands that the LCHC project is located on the southwestern edge of the historic district. The Draft Registration Form identifies three (3) existing buildings on the

Wilson Okamoto Corporation
Attn: John L. Sakaguchi, AICP, Senior Planner
March 02, 2010
Page 2 of 2

project site as non-contributing buildings, which were constructed in 1965 as among a total of 19 dormitories built by Plantation Housing Ltd. We anticipate more detailed elaboration on this matter in the completed DEA, as well as discussion on the historical context pertaining to this historic district and Lana'i island.

Lastly, in the event that historic properties, including Iwi Kūpuna (human burials), are encountered during construction work for the LCHC project, OHA requests to be informed and asks for applicant's compliance pursuant to Chapter 6E, HRS, and Section 13-300, HAR, as follows:

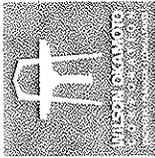
1. Stop all construction/disturbing activity in the immediate area.
2. Leave all remains in place.
3. Immediately notify the SHPD and the county police department.

Thank you again for the opportunity to comment on this project. Should you have any questions, please contact Jerome Yasuhara, Compliance Specialist III, at (808) 594-0239 or by email at jeromev@oha.org.

'O wau ifiro nō, me ka ha'aha'a,

Clyde W. Nāmu'o
Chief Executive Officer

c: Trustee Boyd P. Mossman
OHA, Maui/Lana'i Island—CRC



7953-01

May 17, 2010

Mr. Clyde W. Namuo, Chief Executive Officer
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CDBG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment

Dear Mr. Namuo:

Thank you for your letter dated March 2, 2010 (HRD10-4825) on the Draft Environmental Assessment (EA), Pre-Assessment Notice; for the Lanai Community Health Center, CDBG Project No. 08-04 project. Our responses follow.

1. The Draft EA will state the project site is located in Lanai City Business Country Town District and its boundaries are currently under consideration and review for nomination to the National Historic Register.
2. The Draft EA will include that the existing three buildings on the project site are identified as non-contributing buildings which were constructed in 1965, or 45 years ago. An archaeological literature review was prepared for the project site and findings will be included in the Draft EA.
3. The Draft EA and construction documents will include that in the event historic properties, including iwi kupuna are encountered during construction, work will stop in the immediate area and the appropriate agencies will be notified.

We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murdock, AHL
D. Shaw, LCHC

March 5, 2010

Mr. John L. Sakaguchi, AICP
Senior Planner
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826



RECEIVED
MAR 03 2010

WILSON OKAMOTO CORPORATION

Subject: Draft Environmental Assessment, Pre-Assessment Notice;
Lanai Community Health Center, CBDG Project No. 0804
Lanai City, Lanai, Hawaii; TMK: 4-9-006:011
Response Comments

Dear Mr. Sakaguchi,

Thank you for allowing Caslie & Cooke Resort, LLC (CCR) the opportunity to provide comment on your Pre-Assessment Notice, dated February 5, 2010.

Our comments are as follows:

1. The current zoning for the Lanai Community Health Center is Business Country Town (BCT) district. Any modification of new structures need to comply with the current BCT Design Guidelines. In addition, the County of Maui (COM) is in the process of updating the current BCT Design Guidelines, therefore be cognizant of the potential revisions.
2. The current structures on the parcel of the proposed Lanai Community Health Center (LCHC), are greater than 50 years old, and will come under the State of Hawaii State Historic Preservation Division review (SHPD). You will need to comply with guidelines for any proposed demolition and/or building replacement.
3. The statement concerning the "Lanai Wastewater Reclamation Facility (LWRF)" is incorrect. CCR does not own or operate this facility. The COM owns & operates this facility.
4. Your statement concerning the COM and SHPD issuance of a "Draft National Register of Historic Places Registration Form for the Lanai City Business Country Town historic district" needs to be updated, as there have been rulings since then. Please contact the COM, as they are the applicant.
5. Please conduct a thorough analysis on the potential impact of traffic circulation and parking demand for your project and the surrounding area. In mid 2010, a new Lanai Senior Center, at the corner of Sixth Street & Fraser Avenue will begin

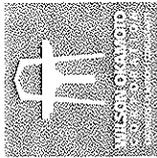
6. construction and is expected to be completed in one year. This new Senior Center will attract higher use, increased traffic, and offsite parking demand. Please conduct a thorough analysis of the surface drainage impact of your proposed facility to the current infrastructure. During rain periods, this area is prone to flooding.
7. Please explain the requirement for subdivision.
8. The application for the subdivision of the parcel will need to be coordinated with CCR, and an agreement will need to be prepared concerning the funding responsibilities of this process.

We look forward to reviewing the Draft Environmental Assessment. If you have any questions, please do not hesitate to call us.

Sincerely,


Steve Bumber, AIA
President - Lanai Operations


Clay R. Rumbaou, P.E.
Director of Engineering



7953-01
May 17, 2010

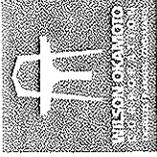
Mr. Clay R. Rumbaoa, P.E., Director of Engineering and
Mr. Steve Bumber, AIA, President, Lanai Operations
Castle & Cooke Resorts, LLC
P.O. Box 630310
Lanai City, Hawaii 96763

Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CDBG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment

Dear Mr. Rumbaoa and Mr. Bumber:

Thank you for your letter dated March 5, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice; for the Lanai Community Health Center, CDBG Project No. 08-04 project. Our responses follow:

1. The Draft EA will state that the project site is located within the Business Country Town (BCT) district. The Health Center design will need to comply with current BCT design guidelines to obtain necessary County permit approvals.
 2. Research indicates the existing three buildings on the project site were constructed in 1965, or 45 years ago. Further, the buildings have been determined to be non-contributing to the National Register Historic Places nomination currently under review. A demolition permit will be included in the design plans submitted for County permits.
 3. The Draft EA will state that the Lanai Wastewater Reclamation Facility is owned and operated by the County of Maui.
 4. The Draft EA will include current information regarding the National Register of Historic Places Nomination.
 5. The Draft EA will state that the project includes two parking lots, a lot with 12 visitor parking spaces with access to Sixth Street and a lot 8 parking spaces for staff with access to Gay Street. The Draft EA will also include the Health Center hours of operation will start at 8:00am and 9:00am.
- The traffic analysis conducted for the Lanai High and Elementary School project included manual counts at the Sixth Street and Fraser Avenue intersection and other the nearby streets shows the roadways operated at Level of Service A or B during the



7953-01
Letter to Mr. Clay R. Rumbaoa and Mr. Steve Bumber
Page 2
May 17, 2010

morning peak hour 7:00am to 8:00am and the afternoon peak from 3:30pm to 4:30pm. Note, the school project traffic analysis accounted for about 640 students and related personnel.

Further, in December 2009, the County of Maui Department of Housing and Human Concerns issued the Final Environmental Assessment for the Lanai Senior Center project located on Seventh Street and Gay Street. The Final EA stated, a variance to the County's off-street parking requirements will be requested. Since there is no off-street parking currently provided on-site, there should be no change to exiting conditions when the Senior Center is completed.

Based on these findings, a traffic impact analysis is not warranted for the Health Center. The Draft EA for the Health Center will provide additional information related to the Health Center access and parking.

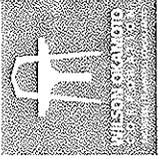
6. At this time, the preliminary design drainage drawings show, the intent is to maintain the existing drainage patterns and drainage discharge points off the site. Drainage will generally sheet flow from Houston Street towards Gay Street. The increased drainage from the proposed site will be detained on-site, utilizing landscaped areas along Gay Street as detention basins and swales within the site. The swales and basins would also function as bio-swales.
 7. Information related to the subdivision of the parcel will be included in the Draft EA.
 8. The application for the subdivision will need to be coordinated with Castle & Cooke, LLC.
- We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murdock, AHL
D. Shaw, LCHC

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461



7953-01
May 17, 2010

Mr. Ray Okazaki, Staff Engineer
Maui Electric Company, Ltd.
210 West Kamehameha Avenue
PO Box 398
Kahului, HI 96733-6898

Subject: Draft Environmental Assessment (EA) - Pre-Assessment Consultation
Lanai Community Health Center, CDBG Project No. 08-04
TMK: 4-9-006: 011; Lanai City, Lanai, Hawaii
Response to Comment

Dear Mr. Okazaki:

Thank you for your letter dated February 9, 2010 on the Draft Environmental Assessment (EA), Pre-Assessment Notice, for the Lanai Community Health Center, CDBG Project No. 08-04 project. The Draft EA will note Maui Electric has no objections to the proposed project at this time. The design team's electrical consultant will coordinate with MECO at the appropriate time.

We appreciate your participation in the Draft EA review process.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: H. Matsumoto, CBDG
M. Murdoch, AHL
D. Shaw, LCHC



February 9, 2010

Mr. John L. Sakaguchi, AICP, Senior Planner
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Oahu, Hawaii, 96826

Subject: Draft Environmental Assessment and Pre-Assessment Notice for the Lanai
Community Health Center
CDBG Project No. 08-04
Tax Map Key: (2) 4-9-006:011
Gay Street and Sixth Street
Lanai City, Lanai, Hawaii

Dear Mr. Sakaguchi,

Thank you for allowing us to comment on the Draft Environmental Assessment and Pre-Assessment Notice for the subject project.

In reviewing our records and the information received, Maui Electric Company has no objection to the subject project at this time. We highly encourage the customer's electrical consultant to submit the electrical demand requirements and a project time schedule with us as soon as practical so that any electric service can be provided on a timely basis.

Should you have any questions or concerns, please call me at 871-2340.

Sincerely,

Ray Okazaki
Staff Engineer

7953-01

cc: AHL
com/lem

FEB 16 2010
MAIL ROOM

Appendix B

Summary of Archaeological Literature Review and Field
Inspection Report for Proposed Lanai Health Center,
Cultural Surveys Hawaii, Inc.,
May2010

**AN ARCHAEOLOGICAL LITERATURE REVIEW
AND FIELD INSPECTION REPORT FOR A
PROPOSED LĀNA'I COMMUNITY HEALTH
CENTER IN LĀNA'I CITY, KAMOKU AHUPUA'A,
LAHAINA DISTRICT, LĀNA'I ISLAND
TMK: (2) 4-9-006: PORTION OF 011**

Prepared for
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826

Prepared by
Jonas K. Madeus, B.A.
Tanya Lee-Greig, M.A.
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai'i, Inc.
Waialuku, Hawai'i
(Job Code: KAMOKU-9)

May 2010

O'ahu Office
P.O. Box 1114
Kaihua, Hawai'i 96734
Ph.: (808) 262-9972
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1993 Main Street
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Fax: (808) 244-1994

www.culturalsurveys.com

Management Summary

Reference	An Archaeological Literature Review and Field Inspection Report for the proposed Lāna'i Community Health Center in Lāna'i City, Kamoku Ahupua'a, Lahaina District, Lāna'i Island [TMK: (2) 4-9-006: Portion of 011]
Date	April 2010
Project Number	Cultural Surveys Hawai'i Inc. (CSH) Job Code: KAMOKU-9
Investigation Permit Number	CSH completed the literature review and field inspection under state archaeological permit No. 0920 (2009) issued by the Department of Land & Natural Resources/ State Inventory of Historic Places (DLNR/ SIHP) per Hawai'i Administrative Rules (HAR) Chapter 13-13-282.
Project Location	The Lāna'i Community Health Center project site is located on a 42,857 square foot, (circa 0.98 acre) parcel bounded by Houston Street on the northeast, Seventh Street on the southeast, Gay Street on the southwest, and Sixth Street on the northwest. The Lāna'i Community Health Center will subdivide the parcel and use approximately 25,067.07 square feet or about 0.575 acres of the western parcel. It is on the southwestern edge of the historic district within the Kamoku Ahupua'a, Lahaina District, Lāna'i Island [TMK: (2) 4-9-006: Portion of 011]. This area is depicted on the 1992 Lanai City 7.5-minute USGS topographic quadrangle map.
Land Jurisdiction	Private: Castle & Cooke Resorts, LLC
Agencies	Maui County Department of Health and Human Services, State Historic Preservation Division (SHPD)
Project Description	CSH completed this archaeological literature review and field inspection investigation for the County of Maui, regarding a proposal to build a Lāna'i Community Health Center. There are three small multi-family housing units on the parcel which were built in 1965 or 45 years ago. Two of the three buildings have been abandoned. A portion of the third building serves as the current Lāna'i Community Health Center Administration offices and the other portion as the Lāna'i Art Center. These three existing buildings will be removed to construct the new Lāna'i Community Health Center. This facility is located on the southwestern edge of the recently nominated historic district for the Lāna'i City Business Country Town (LC-BCT). The draft Registration Form identifies the three buildings on the project site as non-contributing buildings.
Project Acreage	25,067.07 square feet, or 0.575 acres

<p>Area of Potential Effect (APE) and Survey Acreage</p>	<p>For this field inspection, the project's APE is defined as the entire 25,067.07-square-foot portion of TMK: (2) 4-9-006: 011. The project APE is a small portion of the proposed 9.77-acre BCT historic district of Lāna'i City consists of a thematic group of buildings which from the commercial core of the last intact plantation town in Maui County (Solamillo et al. 2009). However, the three buildings in the APE are proposed to be removed as APE are non-contributing features of the BCT.</p>
<p>Historic Preservation Regulatory Context</p>	<p>This archaeological literature review and field inspection study does not meet the requirements of an inventory-level survey, per HAR Chapter 13-276. However, the level of work is sufficient to address site types and locations, and to formulate future work recommendations. The literature review and field inspection report details research methods and findings. The goal is to identify, if possible, cultural resources and/or historic properties and provide recommendations related to the State of Hawai'i historic review process.</p>
<p>Fieldwork Effort</p>	<p>Fieldwork was accomplished on February 2, 2010 by Hallett, H. Hammat, Ph.D. with a follow up field check was carried out by Jonas K. Madsen, B.A. on March 30, 2010. The field effort included a general pedestrian inspection and photographs. The total time required to complete the fieldwork consisted of two days.</p>
<p>Results Summary</p>	<p>It has been previously determined by Solamillo and others (2009) that the three existing structures on the project parcel are "non-contributing" features or structures within the context of the proposed historic district of Lāna'i City Business Country Town. No other surface indications of historic-era constructions or traditional cultural material remains were observed during the present field inspection. The project area is located within the original layout of Lāna'i City. It appears from a review of historic photographs that, it was not previously cultivated in pineapple. Soil stratigraphy in such areas may consist of modern fill material overlying undisturbed regional soils, indicating that undisturbed cultural deposits may exist in scattered pockets. Such subsurface deposits may include indigenous and post-contact cultural material remains, remnants of structural remains, and, possibly, human burials. CSH recommends precautionary monitoring during grading of the project and excavation for foundations and footings of the planned facility for utility connections. In the event that human remains are identified during the course of excavation, all work in the immediate area should be stopped, the location secured, and the Cultural Historian from SHPD, Hinano Rodrigues, should be contacted for further direction.</p>

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Section 1 Introduction

1.1 Project Background

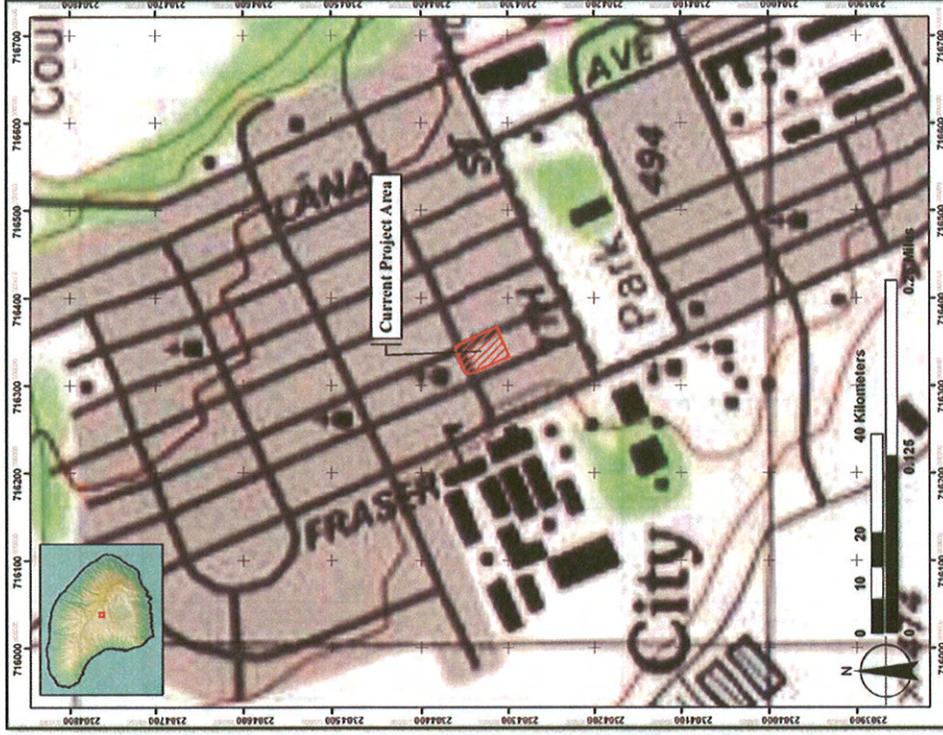
At the request of Wilson Okamoto Corporation, Cultural Surveys Hawaii, Inc. (CSH) conducted an archaeological literature review and field inspection for a 25,067.07-square foot, or 0.575 acre, parcel in Lāna'i City, located in Kamoku Ahupua'a, Lāhāna District, Lāna'i Island [TMK: (2) 4-9-006:por. 011] (Figure 1 through Figure 3). The County of Maui, Office of the Mayor through the Community Development Block Grant (CDBG) program has issued a grant to the Lāna'i Community Health Center, a non-profit agency, to plan and design, and potentially to construct, the Lāna'i Community Health Center. CDBG is a Federal program of the U.S. Department of Housing and Urban Development (HUD). It is the principal Federal program providing grants to state and local governments to devise innovative and constructive approaches to improve the physical economic and social conditions in their communities which will benefit persons of low and moderate income.

The Lāna'i Community Health Center project is located in Lāna'i City northwest of Dole Park on the northwestern portion of parcel (Tax Map Key: 4-9-006:011), bounded by Houston Street on the northeast, Seventh Street on the southeast, Gay Street on the southwest, and Sixth Street on the northwest and occupies an area of approximately 42,857 square feet, or about 0.98 acres (Figure 3). The Lāna'i Community Health Center will use the land under a lease agreement with Castle & Cooke Resorts LLC which will retain ownership of the parcel. The Lāna'i Community Health Center will subdivide the parcel and use approximately 25,067.07 square feet (about 0.575 acres) of the northwest portion of parcel 011 for the new facility. The southeastern portion of this parcel along Seventh Street contains an existing facility occupied by the Lāna'i Art Center and Maui Community College, which will remain without changes (Figure 2). In 1965, the project site was cleared and developed for three small multi-family housing units, two of which have been abandoned with the third building serving as the current Lāna'i Community Health Center and Lāna'i Art Center facility. These three existing buildings will be removed to construct the new facility (Figure 4 to Figure 5).

1.2 Scope of Work

The scope of work included:

- 1- Historical research to include study of archival sources, historic maps, Land Commission Awards and previous archaeological reports to construct a history of land use and to determine if archaeological sites have been recorded on or near this property.
- 2- Limited field inspection of the project area to identify any surface archaeological features and to investigate and assess the potential for impact to such sites. This assessment will identify any sensitive areas that may require further investigation or mitigation before the project proceeds.
- 3- Preparation of a report to include the results of the historical research and the limited fieldwork with an assessment of archaeological potential based on that research, with recommendations for further archaeological work, if appropriate. It will also provide mitigation recommendations if there are archaeologically sensitive areas that need to be taken into consideration.



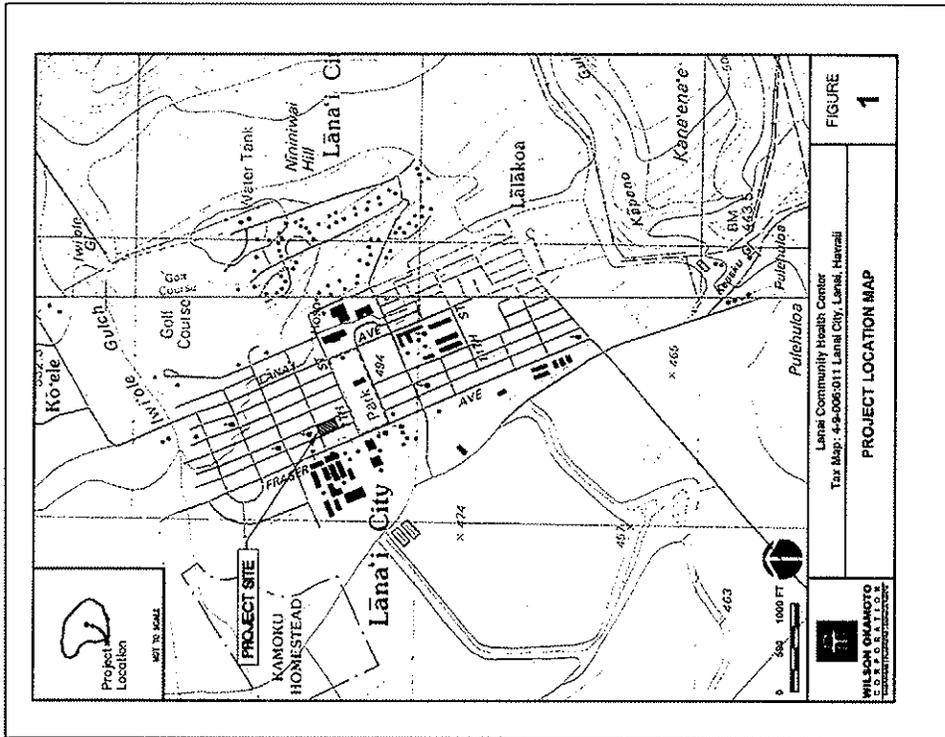


Figure 2. Map courtesy of Wilson Okamoto Corporation, showing the current project area

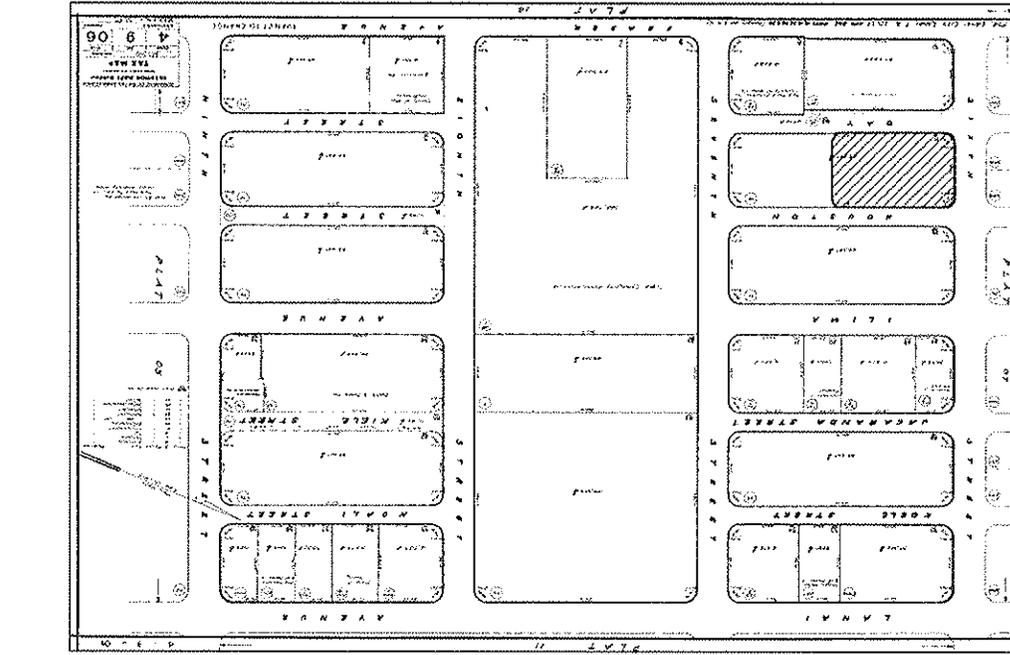


Figure 3. TMK map [TMK: (2) 4-9-006:011] showing portion of parcel 011; the project area is indicated by black hatching



Figure 4. View of the three former multi-family housing units on the project area, one of which is currently used for the Lana'i Community Health Center and the Lana'i Art Center, the green building in far left background; and the other two gray structures have been abandoned; view to the southeast

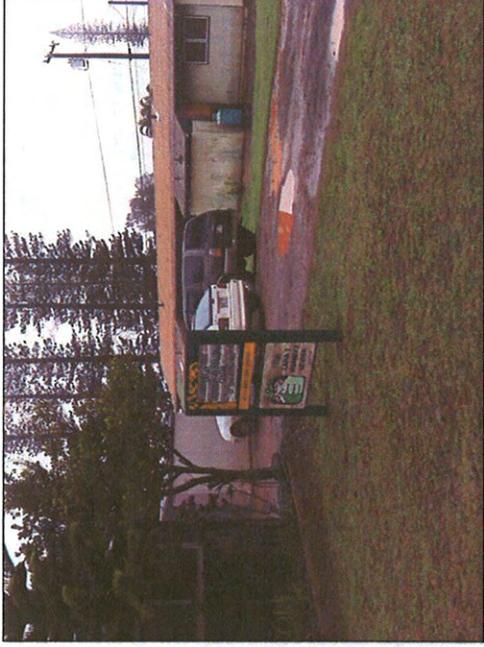


Figure 5. View of the central portion of the project area showing the signage for the Lana'i Community Health Center and the Lana'i Women's Center in middle portion of photo; view to the southwest

1.3 Environmental Setting

1.3.1 Natural Environment

The project area is situated within the central plateau region of Lāna'i Island, at an average elevation of 1,600 feet (488m) above mean sea level (amsl). Generally, the soils underlying Lāna'i City are deep, nearly level, well-drained soils of the Molokai-Lahaina Association (Figure 6). This soil association is noted for fine-textured soils of the upland regions. More specifically, the sediments within the project area are Lahaina silty clay (LaB), 3 to 7 percent slopes. In a representative profile, the surface layer is about 15 inches thick, consisting of dark reddish-brown silty clay. The subsoil is 45 inches thick, consisting of dusky-red and dark reddish-brown silty clay. The substratum is soft, weathered basic igneous rock (Foote et al.1972:78).

Lahaina silty clay (LaB) soils are characterized by slow runoff with a slight erosion hazard. Permeability is moderate with this soil type considered good for sugarcane and pineapple cultivation. Small acreages are used for truck crops, pasture, and home sites (Foote et al.1972:79).

Temperatures in this upland region range between 60° and 80° F. The average annual rainfall in the area ranges from 25-35 inches (699-800 mm) with the heaviest rains in January and the lightest in June. The entire island lies in the dry rain shadow of the West Maui Mountains on Maui, leaving it without a wet windward side. Winds are consistent northeasterly trades.

Vegetation within Lāna'i City is dominated by plantings of Cook pine trees (*Araucaria colitamaris*) and Norfolk Island pine trees (*Araucaria heterophylla*). These trees were introduced in the 1920's by naturalist George Munro, when the Palāwai Basin began to be cultivated in pineapple and the master plan for housing the pineapple plantation laborers involved the layout for Lāna'i City (Taylor 1976). Most all other vegetation in the region of Lāna'i City is imported landscape and ornamental, with various non-native plant species, such as *ti* (*Cordyline fruticosa*) evident in the yards of most retail establishments and residences.

The landscape of the project area has been heavily modified by historic industrial and residential subdivision construction and forest clearance to develop agricultural lands. Aside from the city-wide plantings of Norfolk Island pine trees, the northern slopes leading toward Kō'ele are also planted in introduced eucalyptus (*Eucalyptus robusta* being dominant), silver oak (*Grevillea robusta*), and various fruit trees, such as mango (*Mangifera indica*) and papaya (*Carica papaya*) (H.E.A.R. 2009). Small stands of native *hukui* (*Aleurites moluccana*) were observed near the project area during the present field inspection.

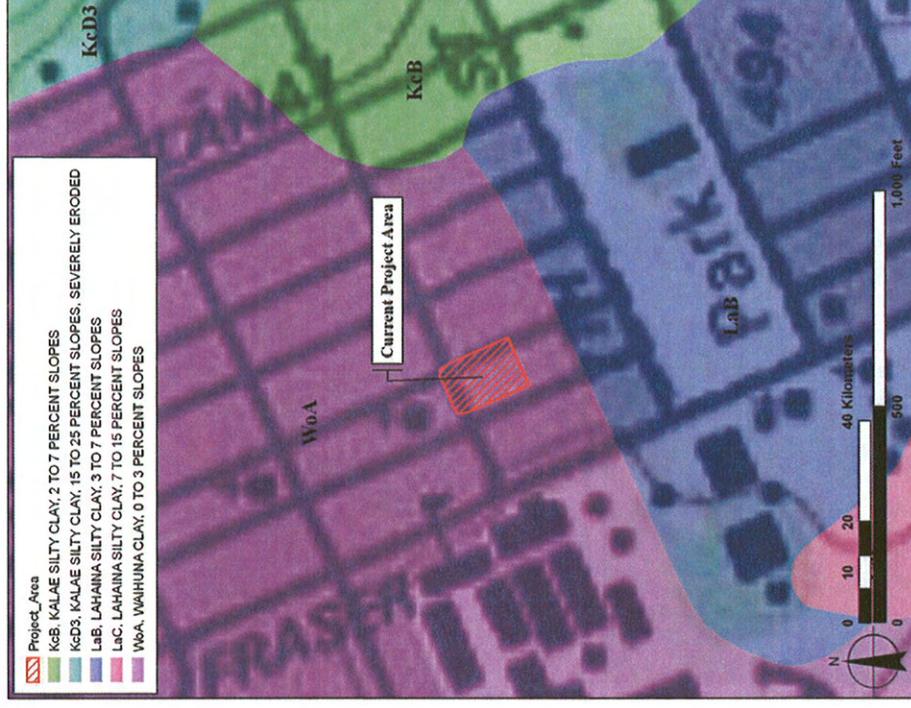


Figure 6. A portion of the 1998 South Lanai 7.5-minute USGS topographic quadrangle, showing the project area relative to the local soil series (U.S. Department of Agriculture, Natural Resources Conservation Service 2001)

1.3.2 Built Environment

Lāna'i City was constructed beginning in 1922, following the purchase of the island by James Drummond Dole to grow pineapple. The city of Lāna'i was constructed to provide laborer housing, stores, schools, a hospital, a library, a bank, social halls, a gymnasium, a movie house, warehouses and repair shops (Mackie 1939). The master-planned community was designed to expand as additional laborers were needed. The present project area is surrounded by other buildings which appear to be original to the period during which the original construction of Lāna'i City by the Hawaiian Pineapple Company occurred. According to the history of Castle & Cooke by Taylor and others (1976), most portions of the city had been completed by 1926. Three small multi-family homes on the parcel were built in 1965 (334 Sixth Street; 622 Gay Street, and 624 Houston Street) (Project Summary, Lāna'i Community Health Center, CBDG Project No. 08-04). There are paved roads, a water hydrant, water meters and electrical lines on and around the project area (Figure 7 through Figure 9).

The project area is located on the block that is bounded by Sixth Street on northwest, the Houston Street on the northeast, Gay Street on the southwest and the Seventh Street on the southeastern portion. This southeastern portion of this parcel along Seventh Street contains an existing facilities occupied by Maui Community College, which will remain without changes. The project area is also located north of the Dole Park and northeast from the Lāna'i Elementary, Intermediate and High School. The original character of the Dole Park region of Lāna'i City remains as it was constructed in the years before World War II, with very few modern changes visible.

With the switch from pineapple cultivation to resort hotel development in 1991, an expansion of outlying residential neighborhoods occurred, resulting in modern townhomes and single-family homes at the outer edges of present-day Lāna'i City.

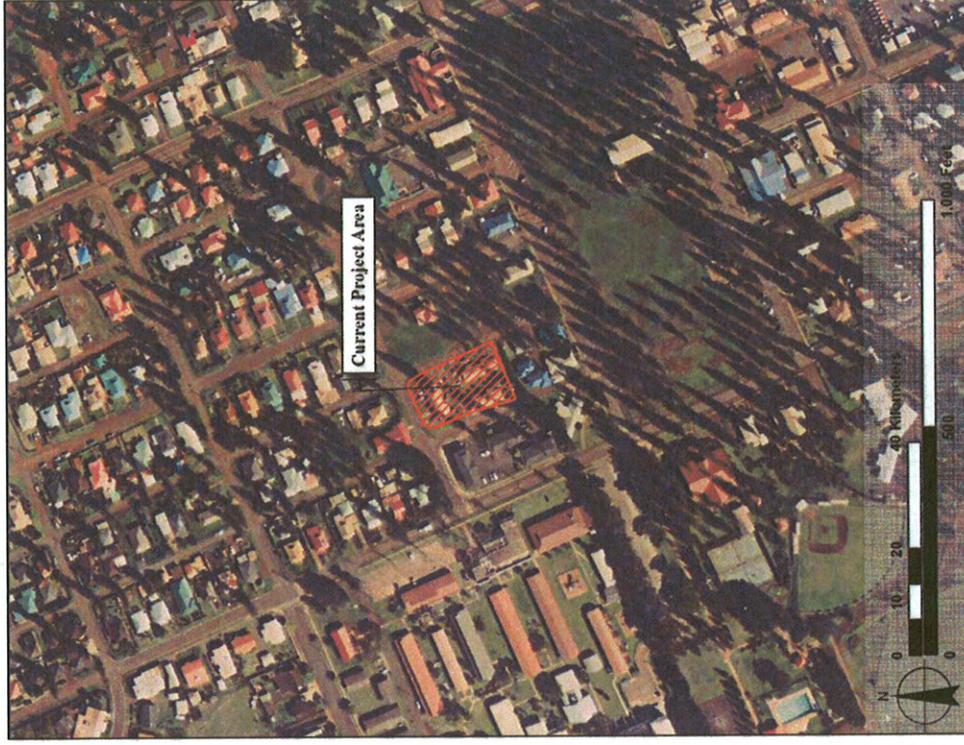


Figure 7. An aerial photo showing portion of Lāna'i City with the current project area in red

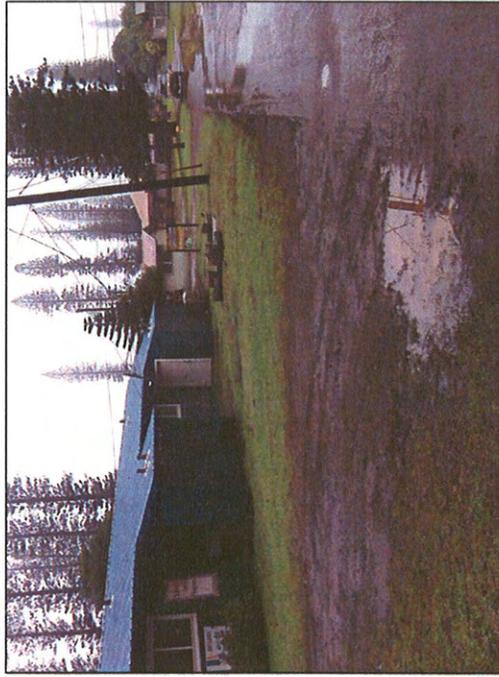


Figure 8. View of built environment on the east side of the project area, Lāna'i Community Health Center and the Lāna'i Women's Center building, roads, view to the northwest



Figure 9. View of built environment on the south end of the project area buildings; view to the east

Section 2 Methods

The archaeological field inspection was carried out by Archaeologist Hallett H. Hammatt, Ph.D. This fieldwork was conducted on February 2, 2010, with a follow up field check was carried out by Jonas K. Madsen, B.A. on March 30, 2010.

2.1 Field Methods

The field inspection consisted of a pedestrian walkover or check on the portion of TMK: (2) 4-9-006: 011 proposed for development of the **Lāna'i Community Health Center**. The project area was visually examined for native or indigenous plants, and evidence of traditional and post-contact cultural material remains and architectural structures.

Documentation methods included photographs and a **geo-referenced map of Lāna'i City**. Photographs were taken using a digital camera. A Garmin GPSMAP 76S unit was also brought into the field to locate and/or pinpoint identified historic properties.

2.2 Document Review

As part of the literature review and field inspection, a review of all previous archaeological work conducted in the surrounding area was performed. In addition, a variety of resources devoted to historical perspectives of the region and traditional stories and accounts were reviewed. Research venues included the State Historic Preservation Division of the Department of Land and Natural Resources and the Survey Office of the Department of Accounting and General Services. Research regarding the history of the Hawaiian Pineapple Company was conducted using the services of the Bailey House Museum, in Wailuku, Maui. Online research venues included the Kumu Pono Associates LLC website (Maly 2008a) and the **Lāna'i Culture and Heritage Center website (Maly 2008b)**, which were consulted for current information regarding the traditional history of the island. **Online reports of meetings of the Maui/Lāna'i Island Burial Council and Hui Mālama Pono O Lāna'i** were accessed at <http://Hawaii.gov/dhnr/meetings/Meetings> and <http://huimalama.tripod.com>, respectively. In addition, all relevant Land Commission Awards (LCAs), Land Patent Grants, and Royal Patents were researched using resources associated with the Waipahoā 'Aina online database (Waipahoā 'Aina Corp. 2002).

Section 3 Background Research

The division of Lāna'i's lands into political districts may have occurred under the direction of the chiefs of Maui, as Lāna'i appeared historically to be "subject or tributary to Maui" during the times of Kamalalawalu (about 1550-1600 AD) (Formander 1916: 424, 1919:206-8). Moffat and Fitzpatrick (1995:23) explain that while Lāna'i was sometimes considered a *moku* or division of land surrounded by water, in other instances Lāna'i was noted as a *kāhala* or division of land that was smaller than a *moku* (district) and subordinated to one of the *moku* of Maui island.

The political position of Lāna'i would play a role in the political aspirations of the Maui and Hawai'i islands chiefs and the warfare tactics they employed. The boundaries of the present project area *ahupua'a* of Kamoku are traditional, though refined by surveyors employed by the Kingdom of Hawai'i beginning in the 1850's. The *ahupua'a* of Kamoku (Figure 10) is bounded by the mountainous region of Lāna'i to the northeast, and by the ocean to the southwest.

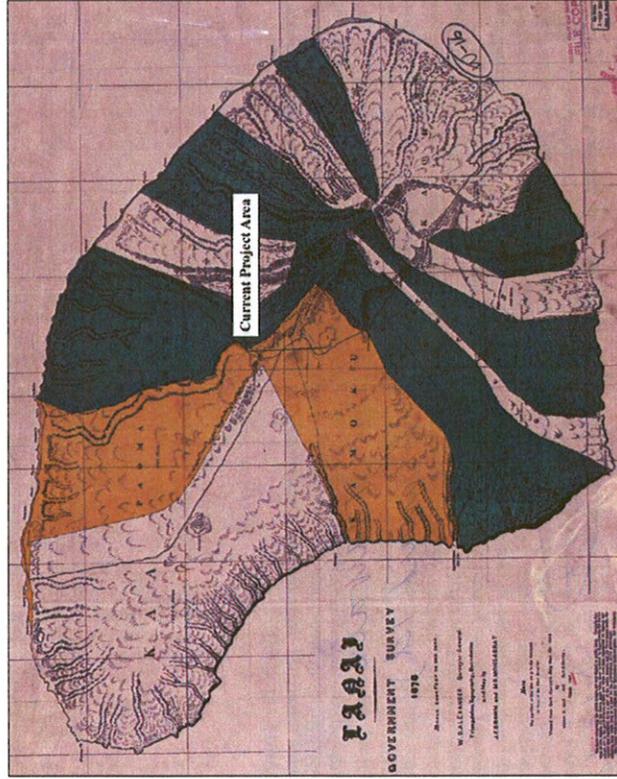


Figure 10. J. F. Brown and M.D. Monsarrat Government Survey map of 1878 for Lana'i Island, showing Crown land in brown/gold color and Government land in green. The remaining lands were available for private ownership and other purposes during the Māhele.

3.1 Traditional and Historical Background

3.1.1 Traditional Accounts

While the mythological and traditional accounts of the upland areas of Lana'i are relatively scarce, an analysis of place name meanings may yield some insight into the patterns of life in an area (Table 1). Literal translations of several of the place names for land areas and divisions within the project area are listed below. Most all translations are taken from Pukui et al. (1976), Emory (1924a), Formander (1916-1920), and Kalākaua (1888). Maly (2008a) notes that the proliferation of place names in the region points to a “viable native presence on the island of Lana'i in traditional times”.

Table 1. Place name meanings of the project area and general vicinity.

Anapuka	<i>Lit.</i> , cave with holes. Fishermen would tie their canoes to such holes (Pukui et al. 1976). Emory (1924a:29) notes that two rocky points with arches are named Anapuka, one at the shore of Kamoku Ahupua'a, and one at the shore of Kaunoli village.
Halulu	Pukui (et al. 1976) believe this place name refers to the legendary man-eating bird Halulu. (See “A Lamentation for Young Kaahumanu” following this table.) Formander (1916:66) defines Halulu as a bird-god, who the hero Aukeleuiaku defeats in battle. Emory (1924a) links the traditional meaning of this place name along the north coast of Lana'i to the speed by which a man could run the <i>ahupua'a</i> boundary of Mahana. This tradition appears to allow for travel from the north coast of Lana'i to the plateau of Kamoku. Additionally, Emory (1924a) recorded the <i>heiau</i> of Halulu at the southwestern part of the island, at Kaunoli. He noted that Kanehameha I may have used Halulu Heiau as late as 1810.
Hao	<i>Lit.</i> , to gather up (Pukui et al. 1976). Emory (1924a) describes a small <i>heiau</i> structure at the north coast, significant because of the traditional link between Mahana and Kamoku Ahupua'a in terms of travel to the north coast.
Hökūiao	Morning star. Venus, when seen in the morning (Pukui and Elbert 1986). Emory (1924a) notes the location on the plateau, west of Lana'i City.
Ho'opulupulua moa	Place of a fish-god, Holu, where desirable fish are found (Formander 1919 V III). <i>Lit.</i> , strong smell of chickens. According to Emory (1924a), this ridge abounds with stones and holes where chickens were once cooked, located at the northwestern end of the plateau.
Hulupu'unitu	<i>Lit.</i> , whirling feather hill. Emory (1924a) notes the location on the plateau, just east of Lana'i City.

Table 1 continues.

Iwiote	<i>Lit.</i> , fang bone. Type of adze (Pukui and Elbert 1986). Emory (1924a) notes the name of the upper valley of Iwiote is called Kaiholena. Iwiote is located just east of Lāna'i City.
Ka'ā	<i>Lit.</i> , the burning (Emory 1924a). According to Formander (1916:370) the largest of the thirteen <i>ahupua'a</i> of Lāna'i, Ka'ā, appears to take its name from the legend of the demi-god Maui, and his quest to pull the islands of Hawai'i from the bottom of the ocean using a giant fishhook. The knot fastening the hook to the line was named Ka'ā. The traditional use of the Ka'ā plateau by those living in Kamoku is posited in Emory (1924a, 1924b).
Kaiholena	<i>Lit.</i> , the iholena banana (Emory 1924a). Valley just northeast of Kō'e'e.
Kaiolohia	<i>Lit.</i> , tranquil sea (Pukui et al. 1976). Emory (1924a) places its location on the north shore of Lāna'i, near the traditional inland route to Kamoku Ahupua'a.
Kaka alani	<i>Lit.</i> , The members of a royal court (Pukui and Elbert 1986). Descriptive term according to Emory (1924a) meaning, "splitting <i>alani</i> (<i>Pelea sandwicensis</i>) wood." A place name in the forested upland plateau region of Lāna'i.
Kalaeāhole	<i>Lit.</i> , point where the <i>āhole</i> fish congregate (Pukui et al. 1976). <i>Lit.</i> , rasping point (Emory 1924a). Emory described a small <i>heiau</i> structure "half a mile up the parched slopes back of Kalaeāhole," placing it just below the plateau.
Kalamanui	<i>Lit.</i> , large Kalama (Pukui et al. 1976). Emory (1924a) gives the literal meaning as "torch"; a valley just north of Kaumālapa'u Harbor.
Kalamaiki	<i>Lit.</i> , small Kalama (Pukui et al. 1976). Emory (1924a) notes the location of this valley along the Kamoku coast.
Kalapu'u	<i>Lit.</i> , ending hill (Emory 1924a), located in the upper plateau of Paoma'i.
Kalihi	<i>Lit.</i> , the edge (Emory 1924a), a <i>pu'u</i> (hill) located in the upper plateau of Ka'ā, in the travelled region of Kamoku.
Kamoku	<i>Lit.</i> , the district (Pukui et al. 1976). Emory (1924a) relates the name to an <i>ahupua'a</i> in the Hāmākua region of Hawai'i Island, which was "cut off" from other <i>ahupua'a</i> . Emory felt the name meant "cut off."
Kānepu'u	<i>Lit.</i> , hill of Kāne. Kānepu'u is the highest point of a ridge that originates west of Kō'e'e, some four miles distant. (This area contains a 600-acre dryland forest, first described by George C. Munro in 1920.)
Kapukaloa	Emory (1924a) shows this as the head of a valley, located on the plateau just below the peak of Kāne pu'u.

Table 1 continues.

Kaumaikahōkū	<i>Lit.</i> , the stars are out (Emory 1924a). Hill located just southwest of Lāna'i City, where traditionally clouds do not obstruct the view of the stars.
Kaumālapa'u (Harbor)	A well-defined <i>ko'a</i> fishing shrine, with an adjacent house platform and two fireplaces recorded by Emory (1924a). According to Maly (2008a) a cave and waterspout are located just south of the harbor, both of which were described by Kalākaua (1888). <i>Lit.</i> , soot [from burning] placed [in] gardens.
Kea'aku	<i>Lit.</i> , the standing root (Emory 1924a). Located just south of Lāna'i City.
Keahi'āloa	<i>Lit.</i> , the long lasting fire, according to the story of Kawelo. In this story, Kawelo, a powerful <i>kahuna</i> of Lāna'i, heard that his arch-rival, Lanikaula, from Moloka'i, had cast a spell on the people of his village. He saw that they moved as in a trance. The two <i>kahunas</i> traded fireballs across the channel separating the two islands. Kawelo was the victor. Smoke from the burning fires from the battle is said to have changed the color of the Lāna'i <i>lehua</i> blossom from red to purple (Nupepa Kuoko Dec. 22, 1922, author not attributed). W. M. Gibson, a resident of Lāna'i in the 1860's, was also quoted as the source for this story of Kawelo in Kalākaua (1888). The ruins of two circular platforms at Keahi'āloa form a small <i>heiau</i> site and a habitation complex described by Emory (1924a).
Keahikawelo	<i>Lit.</i> , fire of Kawelo (Emory 1924a). Trail marker (<i>āhiu</i>) here is associated with the magic of Kawelo (see entry for Keahi'āloa above). This site is located on the plateau of Ka'ā, just above Keahi'āloa. Maly (2008a) relates two stories of Keahi-a-Kawelo, the sorcerer of Lāna'i, who defeated Lanikaula: the first account by W.M. Gibson (see above) and the second by a native writer to the newspaper "Kuoko," July 18, 1868.
Keanaolulo	<i>Lit.</i> , cave of the shipwrecked (Emory 1924a), on the north shore in Mašana Ahupua'a, in a region accessible in traditional times from Kamoku Ahupua'a.
Keone	<i>Lit.</i> , the sand. A shoreline bay of west Lāna'i (Pukui et al. 1976), in Kamoku Ahupua'a. The site of a cave described by Emory (1924a) in the upper gulch.
Keonehe'ehe'e	Site of Maluhie, categorized by Emory (1924a:69) as a small <i>heiau</i> . <i>Lit.</i> , the sliding sands (Pukui et al. 1976). Emory states, "several hundred yards from the main ridge at Keonehe'e on the flat grass lands is the site, marked only by a line of stones in the ground forming a rectangle about 20 by 30 feet."
Kire	<i>Lit.</i> , peer. Bay of southwest Lāna'i (Pukui et al. 1976).

Table 1 continues.

Kihāmāniente (Kihāmāniantia)	According to Emory (1924a), the site of the Protestant church, built in 1851. Emory stated that the "smooth hill covered in <i>manitania</i> grass" was the origin of the place name. According to Pukui and Elbert (1986), <i>manienie 'ūia</i> (golden beardgrass, or <i>Chrysopogon aciculatus</i>), is the upland grass found in the region of the church.
Kō'eie	Land division of central Lāna'i. <i>Lit.</i> , dark sugar cane (Pukui et al. 1976). Emory (1924a) stated that the name meant "place seized by a chief."
Kukuikahi	<i>Lit.</i> , lone <i>kukui</i> (Emory 1924a). In the plateau land of Ka'ā, Emory (1924a) stated that the region was named for a <i>kukui</i> tree (<i>Aleurites moluccana</i>) stump.
Lāiākoa	Land section, northeast Lāna'i. <i>Lit.</i> , <i>koa</i> tree (<i>Acacia koa</i>) branch (Pukui et al. 1976). Region of east Lāna'i City, according to Emory (1924a), where Charles Gay constructed his family home.
Leinukaiahua	<i>Lit.</i> , plateau land (Emory 1924a). A promontory measuring 466 feet above mean sea level (amsl).
Makapa'ia	<i>Lit.</i> , enclosed eyes (Emory 1924a). Region of the plateau just south of Lāna'i City.
Malauea	Malauea is the southernmost region of the plateau land, before it slopes away toward Mānele Bay.
Malulani	<i>Lit.</i> , heavenly shade (Emory 1924a), named for the region of the plateau, in the <i>ahupua'a</i> of Ka'ā, where Malulani, one of the seven legendary sisters of the fire goddess Pele, lived (Fornander 1919:576-580, see "Story of the 'Ohelo" following this table.).
Mauna Kūi	<i>Lit.</i> , sharp pointed hill (Emory 1924a), located on the plateau overlooking the southwestern cliffs of Ka'ā Ahupua'a.
Maunalei (Gulch)	<i>Lit.</i> , lei mountain (Pukui et al. 1976). The clouds that ring the valley walls of Maunalei appeared as flower garlands, or <i>leis</i> . Although located some nine miles by road from Lāna'i City, a series of earthen tunnels and pipelines connect Lāna'i City to this water source.
Nanahunui	<i>Lit.</i> , much charcoal (Emory 1924a), located at the headland of Mānele Gulch.
Naupaka	Land section of west Lāna'i, in which a shoreline cliff and valley of Kamoku Ahupua'a are located. A Hawaiian coastal shrub, the <i>naupaka</i> (<i>Scaevola taccada</i>) is native to Lāna'i (H.E.A.R. 2009).
Nininwai Hill	<i>Lit.</i> , pour water (Pukui et al. 1976). The region of northeastern Lāna'i City, according to Emory (1924a), and site of a reservoir.

Table 1 continues.

'Ōanapuka	<i>Lit.</i> , hole (<i>puka</i>) in which a small taro tuber (<i>'ōana</i>) is peeled, wrapped in <i>iti</i> leaves, and baked in a ground oven (Pukui and Elbert 1986).
Pālāwai (Basin)	The central basin of Lāna'i Island formed of a collapsed volcanic caldera, with an area of 3.5 square miles (Stearns 1940). The name Pālāwai is given by Malo (2008a) as one of four paddlers accompanying Māka'elei, the legendary fisherman of Lāna'i, in a story recounted by J.W.H.I. Kīhe in issues of the newspaper "Na Hoku o Hawaii" between January 31 st and August 21 st , 1928. This account names Mauna-lei as the daughter of Pālāwai.
Paoma'i	In Kalākau's account "Kaala, the Flower of Lanai", the hero of the story, Ka'ali'i, ran across the coastal area of Paoma'i in his search of his loved one, Ka'ala (Kalākau 1888: 422). <i>Lit.</i> , sick Pao. Pao was a district overseer who exhausted himself swimming and running to and from Lahaina (Pukui et al. 1976).
Pōhakuloa	<i>Lit.</i> , long stone (Pukui et al. 1976), and the name of a portion of Mānele Gulch, according to Emory (1924a).
Pohō'ūla	<i>Lit.</i> , red hollow (Emory 1924a), a region located just north of Lāna'i City.
Pūlehu'loa	<i>Lit.</i> , big roasting. Emory (1924a) attributes the translation to Thrum (no date given) and shows this location in the plateau region just south of the present-day Lāna'i City.
Pu'ukaula	<i>Lit.</i> , hill of <i>kauila</i> tree. Emory (1924a) states that the location of this hill is in Kamoku, at the boundary with Kalulu Ahupua'a.
Pu'ukoa	<i>Lit.</i> , koa tree hill (Pukui et al. 1976). Emory (1924a) shows this hill in the plateau of Kamoku.
Pu'umalekahi	Prominent hill on the high mountain ridge of Lāna'i, set back from Pōhakuloa, and forming a peak above the Pālāwai Basin.
Pu'u Nāmā'i Hawaii'i	Peak from which a view of the island of Hawai'i can be seen. Emory (1924a) shows this promontory in the plateau region of Kamoku.
Pu'u Nōnō	Land section of Lāna'i. <i>Lit.</i> , goose hill (Pukui et al. 1976). Emory (1924a) notes two locations, one just above Kō'eie in Kamoku Ahupua'a, and one on a promontory in Ka'ōhai Ahupua'a.

The above place names, together with the environmental data, suggest that the lands of the central plateau basin were productive agriculturally and of great traditional significance.

In this region of the island of Lāna'i, gulches, ridges, hilltops and other terrestrial landmarks were given descriptive names, some referring to heroic characters of Hawaiian mythology, and others suggestive of actions which could be accomplished (i.e., the sighting of the island of

Hawai'i) from its promontory. The upland plateau region was of great importance, both in terms of habitation and subsistence during the traditional or pre-contact time period, as well as an area somewhat sheltered from coastal raiding parties from other islands.

Emory (1924a: 122) estimated the aboriginal population of Lāna'i as about 3,150 prior to 1778. He stated that the inhabitants of Lāna'i survived by collecting dew on "oiled *tapa*s or whipped from heavy shrubbery." Water that accumulated in natural depressions was husbanded carefully, and a few wells were dug along the coast and were "plastered on the seaward side with mud and straw" to stop the infiltration of sea water. Emory stated that the water derived from these wells was brackish, but usable by the Hawaiians because they had become accustomed to the salinity. He further postulated that survival along the leeward coastline also depended on Hawaiians visiting small springs in the distant hills, and carrying water in gourds back to the coast.

In 1778, only months before the arrival of Captain James Cook and his discovery of the Sandwich Islands, a raid by Hawai'i chief Kalaniopu'u "ravaged the island of Lāna'i thoroughly" (Fornander 1880:157). The battle between the forces of Kalaniopu'u and those of Maui chief Kahekili were concentrated along the north coast of Lāna'i. The Lāna'i chiefs, unable to oppose these forces, retreated into the upper recesses of Maunalei, where they were killed. The army of Kalaniopu'u destroyed food crops across the entire island and cut down and burned forests. Historian Samuel Kamakau (1992) reported the *ahupua'a* of Ka'ōhai was the most severely damaged during this warfare.

John E. Dockall (Dockall et al. 2004) authored an archaeological assessment report for the Hi'i Flats region which straddles both Keālia Kapu and Keālia Ahupua'a. In this report, he cites both Handy et al. (1972) and Emory (1924a), stating that Lāna'i was known for widespread planting of sweet potatoes. In fact, the distribution of planted sweet potatoes followed the geographic distribution of settlements. Handy and colleagues also noted that the island had ample good land for growing sweet potatoes but that the most serious limitation was drinking water.

Dockall and others (2004) postulated that the main reason that taro agriculture on Lāna'i was so difficult was related to stream capability. The island had only two small stream systems that were capable of providing enough water for taro irrigation (Handy et al. 1972). Maximum elevations on the island also limit the amount of rainfall that occurs. This rainfall was traditionally suitable for sweet potato and later for pineapple but not for sustained irrigation and cultivation of taro as a significant portion of the diet. The authors also noted that there was apparently much breadfruit planted on Lāna'i but there are few direct indicators of the areas that were so planted. Kamakau (1992) stated that the *Pālāwai* or bottomlands were most suitable for the cultivation of sweet potatoes due to the richness of the soil.

This brief overview of legendary and traditional accounts indicates the particular importance attributed to the northern coast of Lāna'i during pre-contact Hawai'i. The accounts do not specifically state but do suggest that the productivity of the northwestern coastal area, in terms of fish resources, is the main reason for its desirability. The productivity of the ocean allowed direct access to fish protein for the *ali'i* (chiefly class) who resided at villages along the northwest coastal areas.

3.1.2 Mythological Accounts

3.1.2.1 The Story of the 'Ōhelo

The "Story of the 'Ōhelo", as translated from the original Hawaiian by Abraham Fornander (1919), describes the origin of the sacred offering of 'ōhelo to the goddess Pele, and the importance of Lāna'i Island in the telling of the story. According to Fornander, the many sisters of Pele followed her east from Tahiti across the Pacific Ocean. As Malulani, Kaohelo, Hi'iaka, and Pele arrived at the Hawaiian Islands, Malulani choose Lāna'i to dwell on, while Pele, Kaohelo, and her younger sisters traveled on to the island of Hawai'i.

Kaohelo had a son named Kīha, who was given instructions by Kaohelo as she neared death where she should be buried. "Take my body to the very navel of your grandmother, right on top of Kīlauea; then bury me there." This her son did. The flesh of Kaohelo became the creeping vine and her bones became the bush-plant of the 'ōhelo. Her head was treasured by Pele as the smoldering fire of Kīlauea. The remainder of her body brought volcanic fire to Haleakalā on Maui. Keālia on O'āhu, and also to Kaua'i.

When Malulani, living on Lāna'i, heard of the death of her youngest sister, she went to Hawai'i to retrieve her body, but found that small pieces of her body were strewn across the landscape sprouting into vines and bushes of the 'ōhelo. She gathered as much of her sister's remains as she could, but upon returning to Lāna'i, was surprised to find the pieces of Kaohelo's body had been strung as leis and worn as adornment. Saddened by this, Malulani died.

Hi'iaka then came to Lāna'i to recover the body of Malulani, whereupon small bundles containing her remains were scattered across the island of Hawai'i, causing small hills and islets that remain to this day. In this way, the island of Lāna'i is part of the legend of how the 'ōhelo came to be spread across the Hawaiian Islands, and why the 'ōhelo is the special sacred offering to Pele (Fornander 1919, V, III: 576-580).

3.1.2.2 A Lamentation for Young Kaahumani

The place name Hāhulu, a *heiau* on the southwestern coast of Lanai, was said to have been used by Kamehameha I until about 1810, after which he spent most of his remaining life on the island of Hawai'i. Based on the research of Fornander (1920:451), "A Lamentation for Young Kaahumani," was a chant composed for the favorite queen of Kamehameha I at her death. She was eulogized as having a soul that flew as a bird. In this chant, performed by her bereaved husband, Kaumuali'i, the soul of Ka'ahumani was said to have a spirit guide to heaven in the form of Hāhulu: a fabled bird whose head feathers were said to have adorned noted idols, and who was supposed to have answered the prayers of faithful devotees by fluttering, or by rising and falling, in answer to the good or ill wishes of the prayers sent to him.

3.1.2.3 Fallen is the Chief (A Prophecy of the Overthrow of the Kingdom by Kamehameha)

In a chant composed to commemorate the uniting of all of the Hawaiian Islands under the rule of Kamehameha I, the fabled bird Hāhulu is again given a prominent part in the story. The feather of Hāhulu adorned the brow of Kaili, the god of war that Kamehameha was granted custody of by his father. Fornander (1920:381) noted that the chant described how Kamehameha worshipped Hāhulu, and that "when the feather sprung up in the forehead of the idol, the people thought it

was a sign of ability to conquer; *o ka makia o Kamehameha*: that which fastens together, or holds together the islands.”

3.1.2.4 The Ghosts of Lāna'i

The northern coastal place name of Laevahie refers to the point on Lāna'i where Kaulūā'au built a signal fire to the people of Lahaina. Formander (1918:542) recorded the story of Kaka'alaneo, the chief of all of West Maui. His son, Kaulūā'au, grew up as a boy involved in great mischief. Because he uprooted the sacred breadfruit grove of Lahaina, his father had no choice but to banish his son to the uninhabited island of Lāna'i. At that time, Lāna'i was the abode of ghosts, and Kaulūā'au was sent there to be killed by them. Tabrah (1976) notes the many tricks the ghosts tried to use to murder Kaulūā'au, and her account notes the location of the signal fire to the people of Lahaina after he had defeated all of the ghosts of the island as Naha, located in the *ahupua'a* of Kaohai. (The literal translation of Kaohai is “firebrand.”) Kalākaua (1888:212, 230) records the legend of Kaulūā'au conquering the ghosts of Lāna'i in two separate stories, one of which details his fight with the *Mō'vateo*, a lizard god of the island as the most difficult of the ghosts to overcome. He does not give the location of the signal fire used by Kaulūā'au. (There is a village named Kaulūā'au on the coast of Pāwili Ahupua'a.) The legend ends with Kaulūā'au being reunited with his father, mending his mischievous ways, and opening the island of Lāna'i for settlement.

3.1.3 Early Historic Period

Lāna'i was first seen by Captain James Cook during his voyage to the Sandwich Islands in January and February of 1779. The expedition had returned to the Hawaiian Islands in order to resupply following many months of mapping the west coast of North America (Ellis 1969). William Ellis, Assistant Surgeon to the expedition, noted the first time that the ships *HMS Resolution* and *Discovery* sighted “*Aranui*” [Lāna'i], as the ships made their way past “Kaaw'voo [Kaho'olawe] nearly adjoining to Mow'whoe” in 1779. It was during this voyage that Ellis went on to describe Lāna'i as an island under the dominion of the king of Maui (Ellis 1969; Vol. 2, 187). The previous January, 1778, Kaus'i and Ni'ihau had been discovered and visited by Cook's expedition as the two ships had been making for the west coast of North America from French Polynesia (Ellis 1969, Vol.1: 167).

An account of a shipwreck on the northwestern reef of Lāna'i in the late 1820's was detailed by an American Navy Lieutenant, Hiram Paulding, when his ship, the U.S.S. Dolphin, arrived to aid the survivors of the “Loudon”, a ship out of New York. Paulding recorded that the chief of Lāna'i was “encouraging the natives of the island to plunder the Loudon, which carried a large amount of specie and bullion.” The account continued with the captain of the U.S.S. Dolphin, John Percival, chartering a vessel and saving the treasure with the intervention and aid of Boki, the governor of O'ahu (Paulding 1831).

During the early and middle 1800s, the Hawaiian demography was affected by two dramatic factors: radical depopulation resulting from Western disease and nucleation around developing port towns. The traditional Hawaiian population was largely dispersed and, although there were royal centers and areas of more concentrated population, these areas never came close to rivaling

the populations of the historic port towns that developed on Hawai'i's shorelines during the 1800s. In this regard, Kuykendall (1938:313) notes of the period from 1830 to 1854:

The commercial development during this period, by magnifying the importance of a few ports, gave momentum and direction to a townward drift of population; the population of the kingdom as a whole was steadily going down, but the population of Honolulu, Lahaina and Hilo was growing.

By the 1830's, Protestant missionaries sent to the Sandwich Islands from the east coast of America were reporting having established a thriving congregation on Lāna'i. Letters written by missionaries to the American Board of Commissioners for Foreign Missions in 1830 listed 10 schools on Lāna'i Island attended by 506 students. Of these students, the missionaries reported that 206 could read, and 42 could write (Richards 1831).

On September 20th, 1845, Reverend Cochran Forbes left Lahaina at sunrise for “Ranai in company with bro. Baldwin. Kaoluloo took us over in his boat. We had a very pleasant sail, until within some 3 miles of the landing when the fresh trades spattered us a little” (Forbes 1864). Forbes landed at Kaunoli, where he described a Protestant meeting house. Forbes and Reverend Dwight Baldwin preached to a congregation of about 125 persons, which grew to 180 for Sunday services. Monday morning the two missionaries went by canoe to Maunalei, “the place of the teacher Waimahu.”

Forbes and Baldwin then hiked to the upper plateau. “After we had crossed the ridge the soil became better and vegetation more lively. There was an extensive piece of tableland there, perhaps 10 miles one way & 3 or 4 the other, on which are very few stones. There we spent the night & met with the people, near 200 in all who had come together to hear & see the strangers.” Forbes wrote, “Pali the Lunauhau for the whole island resides at this place called Kihamaniania. His influence is manifestly good. We found several pious people around him & himself a good man. He told us that his little children only 6 and eight years old had read the Bible through. He also gave us a list of all the men - the women & children in the island; the whole numbering 584 inhabitants. Most of the children are in school and very few of them who are 12 years old that cannot read” (Forbes 1864).

Forbes commented that the air was cool and invigorating at Kihamaniania. “We spent the night there and early in the morning held another meeting with them, after which we left amid many greetings for the seaside at Kaohai. Pia's place. We travelled constantly only stopping once to hold meetings at the place of Kamaitulu, who teaches a school and is Lunahanawai for the whole island.” By dark, the two missionaries had reached Kaohai, “where Pia had the people of all that neighborhood assembled under some *koa* trees at his door.” The two missionaries returned to Māui by whaleboat. “The surf rolls in so heavily at Kaohai that it was with difficulty we got out. I was expecting two or three times to be swamped, but the boat rode through every surf safely so that by the goodness of God we got safely to sea and reached Lahaina safely before 12 o'clock” (Forbes 1864).

3.1.4 Mid- to late-1800s

The most significant change in land-use patterns and allocation came with The Great Māhele of 1848 and the privatization of land in Hawai'i. This action hastened the shift of the Hawaiian

economy from subsistence-based to market-based. During the Māhele, all of the lands in the Kingdom of Hawai'i were divided between *mā'i* (king), *ali'i* and *konoiki* (overseer of an *ahupua'a*), and *maka āinaua* (tenants of the land) and passed into the Western land tenure model of private ownership. On March 8, 1848, Kauhikaouli (Kaamehameha III) further divided his personal holdings into lands he would retain as private holdings and parcels he would give to the government. This act paved the way for government land sales to foreigners, and in 1850 the legislature granted resident aliens the right to acquire fee simple land rights (Moffat and Fitzpatrick 1995: 41-51).

This significant change of land tenure on Lāna'i during the Great Māhele of 1848 is indicated in a map by J.F. Brown and M.D. Monsarrat (Figure 10). It shows that the island divided into Crown land, Government land, and lands available for private ownership and other purposes.

Native Hawaiians who desired to claim the lands on which they resided were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The awardee was then required to pay in cash an amount equal to one-third of the total land value or to pay in unused land. Following this payment, a Royal Patent was issued that gave full title of ownership to the tenant. By 1850, the government of Hawai'i offered land for sale to both Native Hawaiians and foreigners. Such lands when purchased were referred to as Royal Patent Grants, or, after the term of the Monarchy, as Land Patent Grants.

Native land transactions within the Kamoku Ahupua'a were recorded soon after the terms of the Great Māhele became law. Five small Royal Patent Grants representing four LCA tracts were sold to native families, beginning in 1848. Land use terms, such as whether portions of the lands included areas of pasturage, types of crops cultivated, house lots, paths, roads, and appurtenant streams were mentioned in some of the Royal Patent Grants (Table 2 and Figure 11).

One vast Land Patent Grant (R. P. 5011) was issued in 1907 to Walter M. Giffard, within which the lands of Kama'o, Kalulu, Kamoku, Keālia Paoma'i, Kaumolu, Mahana and Pāwili Ahupua'a, not subject to claim as Land Commission Awards, were transferred in fee simple. With specific reference to Kamoku Ahupua'a, Land Patent Grant 5011 mentions a number of landmarks within the metes-and-bounds property description. The Ili o Lono Heiau is described as "along [the boundary off] Kalulu to a cross cut in a stone amongst a lot of stones at the former site of an old Heiau called Ili Lono." A water hole within Kalulu Valley is named Kaiholena, and "an old house site" is mentioned along the *ahupua'a* boundary with Paoma'i.

Table 2. LCAs within Kamoku Ahupua'a, with translations by Kapa Maly (2009). Translations of Royal Patents by the Waiohona 'Aina Corporation (Waiohona 'Aina 2002).

Royal Patent Number	Award Number	Claimant(s)	Award Type	Acres
4800	10630	Pali, Na	Helu 10630, Pali, Kamoku, Native	Helu 10630, Pali, Kamoku, Māhele award Book 7:222.
8429	10029	Capolo	Helu 10029, Capolo, Māhele award Book 7:213	Helu 10029 Māhele Award Book 7:213

Royal Patent Number	Land Commission	Claimant(s)	Award Type	Average
3029		Nahina and Keihue		103.58 acres
<p>Paomai down South side of gulch. 14. South 83° 45' West true 1455 feet along Paomai to a cross cut in a stone. 15. South 74° 9' West true 920 feet along Paomai. 16. North 55° 12' West true 898 feet along Paomai across gulch to a red wood post a little West of a cactus clump. (Here ends the Crown land of Paomai) Thence 17. South 65° 58' West true 1617 feet along Kaa down North side of gulch to a cross on a stone. 18. South 64° 57' West true 2040 feet along Kaa down North side of gulch to a cross on a stone. 19. South 70° 33' West true 3590 feet along Kaa to a point 10 feet East of a large rock with cross cut on it. Thence 20. South 68° 53' West true 1664 feet along Kaa to sea shore. Thence 21. South 1° 55' West true 13460 feet along sea shore to point of Commencement Area 8291.09 Acres.</p> <p>Apana 2 - // of Kaunaloa, within Kamoku, beginning at the northeast corner: North 52 1/4 ° West 415 links along the government land North 44 West 2144 links to Molohe's land South 32 1/2 West 4664 links to Molohe's land</p>				

Royal Patent Number	Land Commission	Claimant(s)	Award Type	Average
5137	08556	Kauwacaina		
<p>land South 43 East 2320 links along the government land North 29 East 2540 links to the // of Pueo 103.58 acres Excepting the <i>kuleana</i> of a native. September 12, 1866</p>				
<p>Helu 8556, Kauwacaina, Maunalei, Kahu and Kamoku. Native Register 6:468 Lanai Feb. 7, 1848. Greetings: 7:212 Mahele Award Book Kahu and Kamoku There in the <i>Ahupuaa</i> of Lanai. Kahu and Kamoku, several <i>moku muna</i> (grass land/pasture sections) at Kahu, and a <i>paiku</i> (planting section) at Pueo. By Kauwacaina. Helu 8556, Native Testimony 13:265. Kawaiki, Sworn. I know his Parcels of land on Lanai. They are in the // and <i>Ahupuaa</i> below. 3 Parcels. Parcel 1, 3 <i>lo'i kalo</i> (taro pond fields) in the // of Ainaiki, Maunalei <i>Ahupuaa</i>. Parcel 2, 1 <i>moku muna</i> (grass land/pasture Parcel 3, There in the // of Pueo... 38 Acres, 2 Roods, 12 Rods.</p>				

Walter Murray Gibson, arriving in Honolulu as a representative of the Mormon Church on the 4th of July 1861, came to the Sandwich Islands with the idea of converting islanders to that religion. Gibson learned of large tracts of land available for pasturage on the island of Lāna'i, and leased "Crown Lands" (lands reserved by the Royal Family of Hawaii during the Great Māhele of 1848) from King Kamehameha III for the raising of sheep and for other agricultural purposes. The authorities of the Mormon faith from Salt Lake, Utah, pressed Mr. Gibson to deed his property interests on Lāna'i to the Church. By 1864, W. M. Gibson was cut off from the Mormon Church for his refusal to comply, and much of his interest in real property involving the *ahupua'a* of Pālāwai, Keālia Ahupuni, Keālia Kapu, Pawili, Kāma'o, Ka'a, and Kaohai was inherited by his daughter, Taiulua Lucy Hayselden (Tabrah 1976).

The descendants of the Gay family, which had purchased the island of Ni'ihau from the Kingdom of Hawai'i in 1864, now set their sights on acquiring a majority of the property of the island of Lāna'i. In 1902, Charles Gay purchased the former Walter Murray Gibson estate lands at auction, and in 1903, bought out the Heyselden properties. He then purchased the *ahupua'a* lands of Ka'a and Kaohai from the Crown Land holdings of Princess Ruth Ke'elikolani. Charles Gay moved his family into the Gibson-built ranch house in Kō'e'e, and made plans to purchase the eight remaining *ahupua'a* then still under government control. A legal battle and a three-year drought forced Charles Gay to sell all of his property on Lāna'i to a consortium of ranchers from Honolulu (Tabrah 1976). Ranching on the island was barely profitable. The Baidwin family, Maui's most famous ranchers, could not find a way to gain a profit from the island. In 1920, the Baldwin-owned Lanai Ranch Company brought 12 Asian chital deer (*Axis axis*) to Lāna'i from Moloka'i, where good hunting ranges had been established for sportsmen (Graf and Nichols 1966). Despite these efforts, ranching was abandoned.

3.1.5 Early to Mid-1900s

Botanist J. M. Lydgate, visiting Lāna'i with an expedition to obtain rare specimens of trees and flowering plants, reported that 40 continuous years of livestock grazing had "pretty well denuded [Lāna'i] of its forest cover; only on the summit of the island ridge was there a somewhat moth-eaten mantle of it left, and only on the slopes of the higher ravines and the steep hillsides was that mantle really intact and undisturbed" (Lydgate 1920). Lydgate also reported the extinction of plant species observed on Lāna'i only four years prior: plants that had been documented by fellow botanist Horace Mann of Harvard University. Lydgate (1920) commented that, "the ravages of cattle, sheep and goats, as well as forest diseases, hastened the decadence of the indigenous forest [of Lāna'i]."

The success of the Hawaiian Pineapple Company of Honolulu acquiring all of the lands of the Baldwin-owned Lanai Ranch Company began with the annexation of the Hawaiian Islands by the United States in 1898. With annexation came political stability for Hawai'i. Worldwide food prices were rising due to the outbreak of war between the United States and Spain over Spanish colonies in Cuba, Puerto Rico and the Philippines. The pineapple industry on the island of O'ahu was bolstered by the sharp rise in demand for this food product, with corresponding expansion of canning facilities taking place at the Wai'anae cannery. By 1904, the production and canning of Hawaiian pineapple had become "big business" (McClellan 1939), with the Hawaiian Pineapple Company of Honolulu in a leadership position.

By the time the United States entered World War I (1917), the pack of Hawaiian canned pineapple from all packers was about to reach an all-time high. The pack increased from 2.6 million cases in 1917 to 3.8 million cases in 1918 (Thrum 1920). The island of Lāna'i, however, continued to be considered as prime ranch land, and not suitable for agriculture. In 1917, Henry Perrine Baldwin and his brother, Frank Fowler Baldwin, of the Maui-based Hawaiian Commercial & Sugar Company, acquired control of most of Lāna'i. Small ranch land tracts owned by the descendants of Charles Gay, and about 500 acres remaining under native titles, were held out of the sale to the Baldwins (Wentworth 1925).

In 1922, the Baldwins sold their holdings on Lāna'i Island to the Hawaiian Pineapple Company (Figure 12) in order to finance a real estate transaction on the island of Maui (Maui County Council, Lāna'i Community Plan 1998:28). The construction of office buildings, warehouses, shops and dwellings for 250 workers and their families began immediately (Figure 13 and Figure 14). By 1927, three thousand acres of the Pālāwai Basin had been planted in pineapple, the first construction phase to establish Lāna'i City had been finished (Figure 15), and a roadway linking the new piers at Kaunālapa'u with Lāna'i City had been paved (Freeman 1927). The cultivation of pineapple on Lāna'i had become integral in Hawai'i supplying more than 90 percent of the world output of canned pineapple.

The dredging of Kaunālapa'u Harbor and the construction of a breakwater was begun in 1924, after a large storm destroyed the wharf at Mānele Bay. Road construction to the new harbor was completed by the Hawaiian Pineapple Company, and transportation of the pineapple pack for 1925 was assured. Over the course of the next 20 years, five million dollars were invested in the company infrastructure, with annual packs in the late 1930's valued at over 1.4 million dollars. Peak harvest data for 1936 stated that as many as 100,000 crates containing more than 1,300,000 pineapples could be shipped out of Kaunālapa'u Harbor in a 24-hour period (Stearns 1940).

In 1925, Bishop Museum Fellow of Yale University, Chester K. Wentworth, published "The Geology of Lanai" (Wentworth 1925). At the time of his study, he described construction projects by the Hawaiian Pineapple Company, including the erection of power plants and refrigeration plants. He referred his readers to Emory's work regarding cultural traditions of Lāna'i and made an interesting assumption regarding the flora of Lāna'i prior to European contact. Wentworth stated that "the traditions of the natives and the presence of dry tree stems and roots in acolian deposits over much of its area make it fairly certain that Lāna'i was wooded to the sea coast at the time when it was first visited by the Hawaiians" (Wentworth 1925:6).

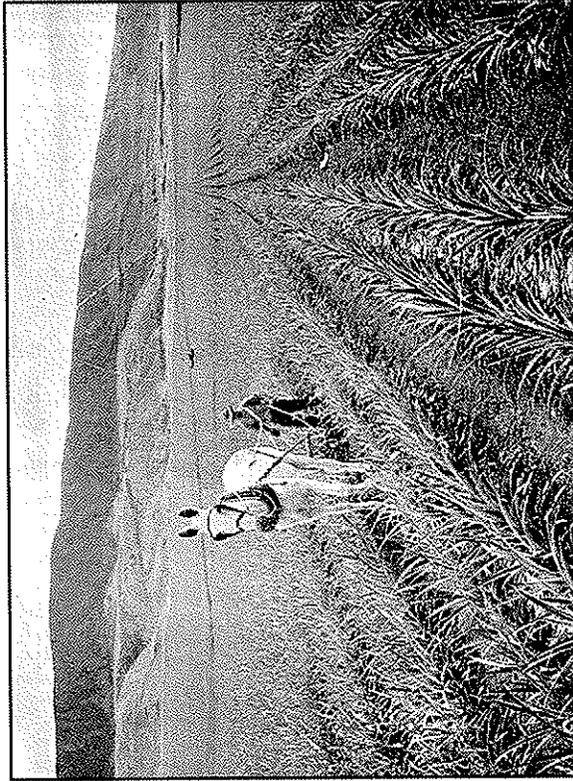


Figure 12. The plateau region of Lānaʻi is visible in this early photo of pineapple cultivation on the island (*Paradise of the Pacific*, December 1936, Vol. 48, No. 12).

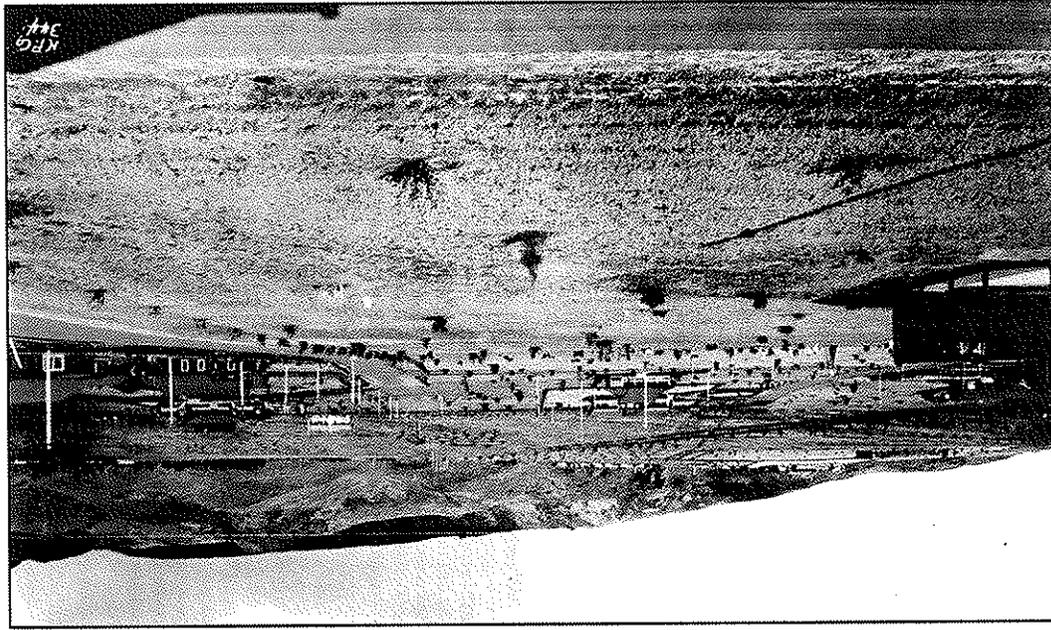


Figure 13. Dole Park circa 1923, following the acquisition of the island of Lānaʻi by the Hawaiian Pineapple Company, and the subsequent construction of laborer and management housing. (Hawaiian Pineapple Company photo courtesy of Castle & Cooke Resorts LLC)

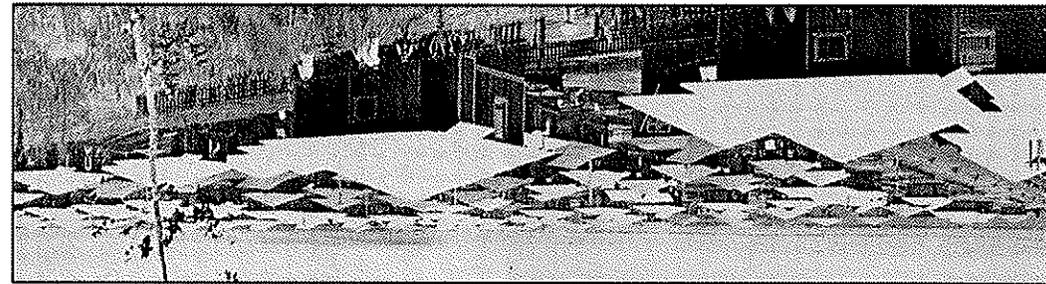


Figure 14. A photograph of the city of Lāna'i, with children visible in the foreground, and hundreds of acres of land cleared for pineapple cultivation in the background (Nippu Jiji Co., Ltd. 1929)

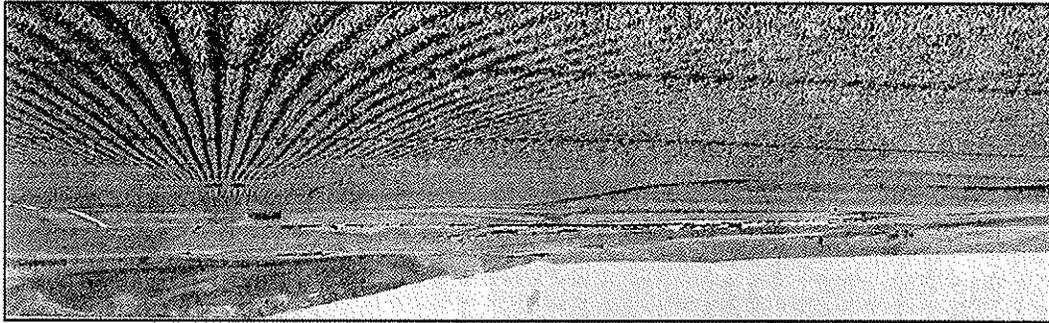


Figure 15. Lāna'i City, visible in the distance (left) with pineapples under cultivation in the foreground (Nippu Jiji Co., Ltd. 1929).

An Archaeological Literature Review and Field Inspection for a Proposed Lāna'i Community Health Center in Lāna'i City, Kaneohe Ahupua'a, Lāna'i Island

TMK: (2) 4-9-006:011

By 1939, the population of Lāna'i was reported at four thousand, with virtually all of the residents working to maintain the fifteen thousand acres of pineapple fields. The expansion of the market to accommodate Hawaiian pineapples occurred so rapidly, with so much success, that new machinery was quickly developed to take advantage of the gentle topography of Lāna'i (Mackie 1939). The long, flat fields could accommodate mechanical harvesters, which operated by straddling rows of pineapple plants, and moving slowly behind men who broke the ripe fruit off their stalks. Once aboard the harvester, pineapples had their crowns removed, were sorted for size, and crated. Pineapples picked in the morning on Lāna'i, about sixty miles from Honolulu, were barged to Honolulu, canned and ready for shipment by nightfall the same day (McClellan 1939).

3.1.5.1 Water Source Development

Harold T. Stearns traversed the island of Lāna'i between June and August of 1936, conducting studies of the geology and ground-water resources. He was assisted by personnel from the U.S. Geological Survey, completing hydrographic maps for the study. His work highlighted the explorations for ground water in Maunalei and at Kō'e'e, to improve sources of drinking water, and for irrigation of the expanding fields of pineapple cultivated on the island (Stearns 1940). He reported that the westernmost slopes of the Palāwai Basin of Lāna'i "[are] not sheltered by other islands on the southerly side, [and] kona storms are unobstructed. Heavy downpours during a single kona [southern exposure] storm commonly account for a considerable part of the annual rainfall, and in some of the arid sections a single rain storm may contribute as much as 80 percent of the annual total" (Stearns 1940:65).

3.1.6 Mid-1900's

Following the end of World War II, the agricultural population of Lāna'i continued to work for wages comparably lower than those earned by sugar workers on the other islands. When restrictions against organized unions were lifted in 1945, sugar workers and dock workers were the first to unionize. By 1946, the International Longshoremen and Warehouse Union (I.L.W.U.) had consolidated its hold on workers who grew, harvested, milled, transported, warehoused and refined Hawaiian sugar. For the 3,200 people on Lāna'i, labor relations with the Hawaiian Pineapple Company were about to heat up (Henderson 1949).

Between 1947 and 1951, pineapple workers in Hawai'i tried but were unable to demand wages and benefits comparable to sugar workers. An industry-wide strike among all pineapple companies was called by the I.L.W.U. in 1947, resulting in minimum wage concessions that raised pay from 35 cents an hour to 97 cents an hour for men. Comparable sugar wages in 1948 were \$1.77 per hour for men, and this disparity continued until pineapple workers on Lāna'i staged a strike that lasted for seven months in 1951, finally winning higher wages and benefits on par with sugar workers. In 1954, the Hawai'i I.L.W.U. fought for and was awarded the first pension plan for agricultural workers in the United States. Throughout the 1950's, other labor concessions awarded to pineapple workers included the 40-hour work week, medical benefits, provisions for sick leave, and paid vacations and holidays (Labor 2009).

3.1.7 Modern Land Use

By 1961, James D. Dole's pineapple lands on the island of Lāna'i were merged with the assets of Castle & Cooke Inc., a prominent Hawai'i-based corporation. World-wide prices for pineapple continued to drop throughout the 1970's as competing countries, most notably Cuba and the Philippines, supplied the market with cheaper pineapple.

Three small multi-family housing units on the subject property were built in 1965. At present, two of the buildings have abandoned and the third is currently used as the Lāna'i Community Health Center and Lāna'i Women's Center. The buildings were renovated sometimes in the past but the specific time periods were not known. These structures will be removed to construct the new Lāna'i Community Health Center.

During the 1980's, Castle & Cooke began a long-term program to phase the island out of pineapple cultivation, and expand tourism on Lāna'i. In 1988, David Murdock, chairman of Castle & Cooke, Inc., opened a resort hotel and companion championship golf course at Mānele Bay. A second resort hotel and golf course in the uplands of Kō'e'e was opened in 1990. The present continuing construction of additional residential and luxury housing projects has created additional jobs for the people of Lāna'i; however, the current statewide downturn in the economy has boosted the unemployment rate for the island past 8% (Labor 2009).

Section 4 Previous Archaeological Research

Archaeological studies that have dealt with larger regions of Lāna'i, but with specific mention of historic properties and features within Kamoku Ahupua'a, include those by Emory (1924a, 1924b), Hommon and Emory (1972), Hommon (1974), and Hammatt and Borthwick (1989a).

Late in 1920, Kenneth P. Emory completed a detailed series of excavations within the crater of Haleakalā on Maui, where he had examined the construction of stone terraces and platforms for clues as to their cultural use. Continuing this work for the Bishop Museum on Lāna'i, Emory (1924a) documented Hawaiian pre-contact ceremonial platform (*hetai*) features, as well as pre-contact dwelling and village sites. Many of the abandoned pre-contact village complexes Emory recorded on Lāna'i also included small ceremonial altar (*ko'a*) structures, burial areas, trail markers (*ahu*), petroglyph incised pictograms on boulders, and, in some cases, relic wooden timbers from the ancient framework of their habitation structures (Emory 1921). In all, Emory's work recorded 59 house sites within the *ahupua'a* of Kamoku (Emory 1924a: 50) (Figure 16).

In the upland plateau, northwest of the present project area, Emory (1924a:51) described two separate consolidated groups of visible house sites that appeared to constitute large upland dryland settlement areas east of Kānepu'u. Set against the ridgeline of Kaka'aiani that rises some one thousand feet in elevation as it leaves the region of Kō'e'e, and ending at Kānepu'u, this dryland plateau included the village sites of (in east-to-west order) Kukuikahi, Kalapu'u, and Keonehe'e'e. Emory recorded 38 visible house sites, spread out over three miles along this ridgeline. With ample evidence of habitation in the upland region, Emory estimated that the region of the Kā'ā plateau supported at least 500 inhabitants (Emory 1921:27). Hearths, ovens, activity scatters and outlying temporary habitations in the lower elevations of the northwestern portion of Lāna'i, between the shoreline settlements and the upland dryland region, indicated to Emory the former existence of trails linking the upland settlements to the ocean resources below.

Archaeological studies specific to Kamoku Ahupua'a in the region of Lāna'i City includes Borthwick and Hammatt (1992), and Hammatt and Borthwick (1988, 1993). In 1988, on the eastern side of Lāna'i City, Hammatt and Borthwick conducted an assessment of the Lāiākoa III Subdivision to determine the nature of a surface scatter of lithic artifacts. Finished adze fragments and four adze preforms found here were attributed to an off-site gravel quarry from which the material had originated. Most archaeological studies in the vicinity of Lāna'i City have identified no significant traditional Hawaiian cultural material remains and/or deposits.

Table 3 lists all previous archaeological investigations performed in the upper region of Kamoku Ahupua'a. A synopsis of each investigation, including the number of habitation sites found (if any), follows the table. Figure 17 shows locations of previous archaeological studies in the vicinity of the current project area.

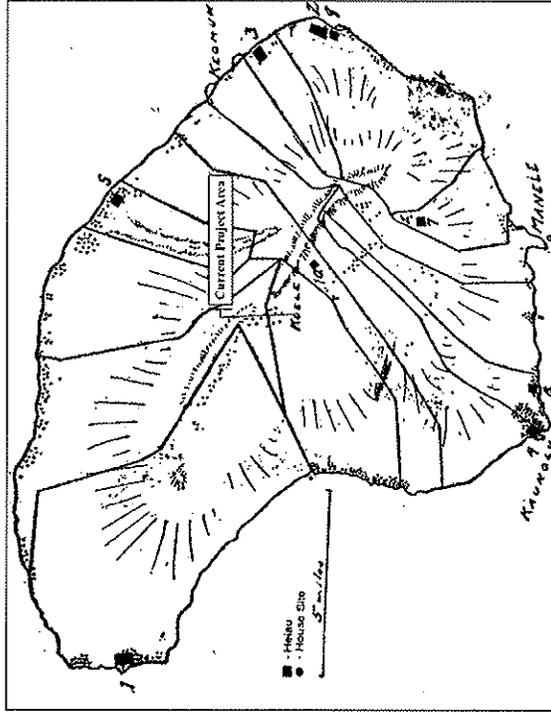


Figure 16. Map from Emory (1924a) showing heiau and house sites on the island of Lānaʻi

Table 3. Previous archaeological investigations in the upland region of Kamoku Ahupuaʻa.

Investigator(s) and Year	Location	Study Type
Emory 1924a & b	Island-Wide	General Survey
Hommon and Emory 1972	Island-Wide	General Survey
Hommon 1974	Island-Wide	General Survey
Hammatt <i>et al.</i> 1988	Ranching Areas of Kōʻele	Inventory Survey and Data Recovery
Hammatt and Borthwick 1988	Lālākoa Subdivision, Kamoku Ahupuaʻa, Lānaʻi City	Archaeological Assessment
Hammatt and Borthwick 1989a	Waialua Multi-Family Housing, Lānaʻi City	Reconnaissance Survey
Hammatt and Borthwick 1989b	Kōʻele Golf Course, Housing and Subdivision	Reconnaissance Survey
Borthwick and Hammatt 1992	Kōʻele Reservoir	Inventory Survey
Hammatt and Borthwick 1993	Waste Water Treatment Project at Kamoku	Inventory Survey
Hammatt 1996	Paomaʻi	Inventory Survey
Tuggle 1997	Northwestern uplands, including portions of the Paomaʻi and Kaʻā Ahupuaʻa	Inventory Survey
Creed, J. Hammatt and H. Hammatt 2000	50-Acre parcel at the northwest corner of Lānaʻi City	Inventory Survey
Hammatt and Shideler 2004	Niniwai Hill	Inventory Survey
Lee-Greig and Hammatt 2007	The Courts Affordable Housing, Lānaʻi City	Field Inspection
Solamillo, Liverman and Kastner 2009	Lānaʻi City Business-Country-Town Historic District	Architectural Inventory Survey

4.1 Summaries of Previous Studies in the Project Area Region

Although Emory's most comprehensive archaeological work on the island of Lāna'i pertained to coastal settlements at Kāpīha'a and Kaunoliū, his investigations of deserted village sites in the uplands of the island are noteworthy because he described burial areas associated with habitation areas. He described a flexed burial exposed by a landslide at an area just north of Kō'ele, and he described ancient house sites just south of Kō'ele.

Emory (1924a) conducted his landmark island-wide survey of Lāna'i between July 1921 and January 1922. He observed pre-contact house sites and burial sites in the Kukuikahi area, just north of Kō'ele in Paoma'i, and wrote, "I counted 27 house sites... and at Pohoula is a stone faced terrace 22 x 59 feet, 4 feet high, having 4 walled divisions probably for as many houses. The hill above has been used as a burial ground" (Emory 1924b:26).

Another specific reference to habitation sites in the upper plateau is given by Emory (1921) in his field notes for September 1921, as he tried to answer the question as to where the natives of the north coast lived when they ascended the plateau:

Along the bluffs which bound the plateau on the mauka side [in Ka'ā Ahupua'a], I counted 31 house sites as I came home. Here, certainly, is where the natives lived. Allowing for 20 more house sites marked with stone divisions, and 50 grass houses at least which had used a perishable wooden fence, and allowing 5 natives to a house, this sheltered spot could have and probably did hold a population in ancient times of 500 (Emory 1921:27).

Other types of historic properties and features observed by Emory across the upper plateau, the northwestern transitional zone, and the northwestern coastal regions (excluding Maunalei and Kaunoliū) include oven pits at Kānepu'u ridge in Paoma'i (Emory 1924a:45); a well at Honopū in Ka'ā (Emory 1924a:47); remnant wooden frames of thatched houses at Kanele in Paoma'i (Emory 1924a:50); the largest (55 x 152 feet) heiau structure on Lāna'i at Ka'ena Iki in Ka'ā (Emory 1924a:64); a fishing shrine (ko'a) at Honua'ula in Paoma'i (Emory 1924a:68); Maluhie heiau at Keonehe'che'e in Ka'ā (Emory 1924a:69); a small heiau at Hao in Mahana (Emory 1924a:69); a complex of habitation platforms, enclosures, and shelters and a ceremonial platform at Kalae'ohole, in Ka'ā (Emory 1924a:71); a fishing shrine (ko'a) at Pōhaku'oa, and a ko'a in Kūkui and four in Kahue in Paoma'i, as well as ko'a structures at Cape Kae'a and at Ka'ena in Ka'ā (Emory 1924a:71); a ko'a at 'Oanapuka on the coast of Kamoku (Emory 1924a:72); stone markers (ahu) at Keahikawelo ridge in Ka'ā (Emory 1924a:72); upright stone slab alignments at Hale o Lono in Paoma'i (Emory 1924a:72); burials in Kuahua Valley in Mahana (Emory 1924a:73); burials in the sand dunes of Awalua in Paoma'i (Emory 1924a:73); burials at Pohoula hill, near the summit, in Paoma'i (Emory 1924a:73); a cave at Keone gulch in Kamoku, along the coast of the present project area ahupua'a (Emory 1924a:88); lava tube caves at Honopū (Emory 1924a:88); petroglyphs at Ka'ena in Ka'ā (Emory 1924a:103); and petroglyphs at Kaunūlāpā'u Bay in Kamoku, within the present project area ahupua'a (Emory 1924a: 103).

The identification of culturally significant sites across the central plateau of Lāna'i was also undertaken by other scientists working on the island at approximately the same time as Emory.

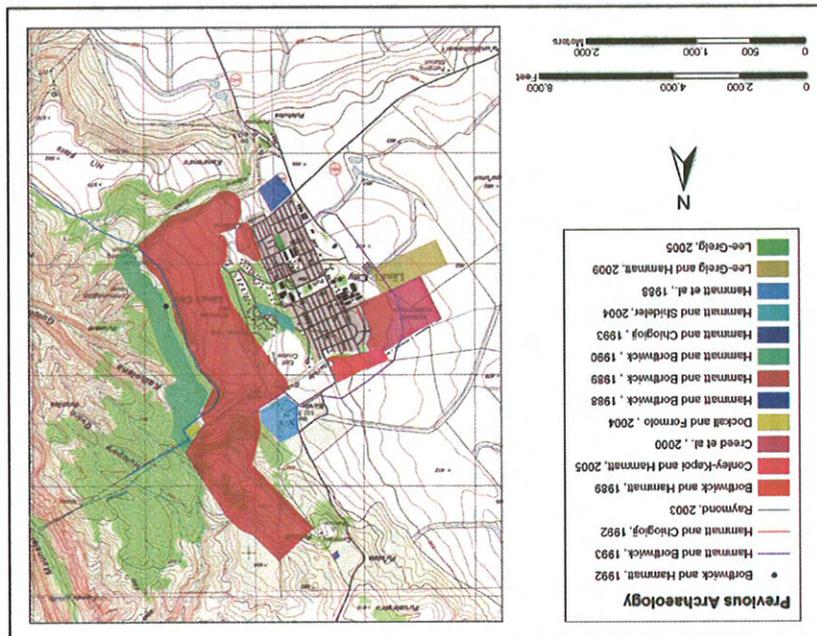


Figure 17. Previous archaeological investigations conducted in the region of Lāna'i City.

Chester K. Wentworth, a Yale University Fellow at the B.P. Bishop Museum, published the first scientific geologic study of the island in 1924 (B.P. Bishop Museum Bulletin 24), and supplied Emory with additional information while performing his surveys of the island (Wentworth 1925). Ornithologist George C. Munro (1920), and botanist J. M. Lydgate (1919-1921) had both performed surveys on Lāna'i and both provided further cultural background information to Emory.

It was Emory's exemplary research on pre-contact occupation of the Mānele District of Lāna'i that best showed how permanent habitation occurred along the coastline of the island. While an examination of the archaeological landscape of the Pālāwai Basin underscores the importance of the uplands as a focus of agriculture and habitation, Hawaiian traditions and the presence of hundreds of house sites at Kaunolū were evidence that the coastal environs were also a focus of settlement and marine exploitation.

In all, Emory (1924a) recorded 489 house sites across Lāna'i. Of eleven large *heiau* structures found on the island, one (Pu'u Makani) is located in the upper plateau region. Of the ten smaller *heiau* structures listed by Emory, two are in the upper plateau region. Maiuhie *heiau*, in Keonehe'ehe'e, and north of Koa, below the trail that leads from the Pālāwai Basin onto the mountain bench at Kaōha'i is an unnamed 30 by 45 foot terrace. Of the 18 intact fishing shrines (*ko'a*) of Lāna'i, one is located in the project area *ahupua'a*, at Kaumālāpa'u. This shrine included an adjacent house platform and two fireplaces. Smaller cairn structures were recorded by Emory in Mahāna, along the area traveled by those crossing the plateau from the north coast

Emory (1924a:72) described stones marking places of religious or magical observances on the upper plateau:

On the great bowlders [sic] along the Keahikawelo ridge many small monuments of three or four stones, one on top of the other, have been erected by natives traveling up and down, to insure good fortune on their way. I am reminded of similar monuments which were set up along the trail at Ke-ahu-o-ka-holo in Haleakala to keep the fog from enveloping the travelers and causing them to lose their way. But the *aihu* at Keahikawelo represent the *kūkae* offerings of Kawelo.

In addition to these historic properties, Emory recorded a large number of artifacts. Some were isolated finds, some were associated with scatters. Petroglyph sites recorded in the project area *ahupua'a* included rock faces at Kaumālāpa'u.

Robert Hommon and Kenneth Emory (1972) made recommendations for the preservation of archaeologically-sensitive regions of Lāna'i. They identified Lāna'i City as an area where future residential subdivision might endanger historic properties or ruins not previously located. Their recommendations for archaeological studies included the areas of Mānele Gulch and Mānele Bay.

Robert Hommon (1974) conducted a survey of historic properties on Lāna'i using Bishop Museum staff members. Hommon attempted to reacquire 262 of Emory's sites located outside of the Kaunolū work area, and documented a small number of previously unrecorded sites in the northwestern upland and coastal areas. Hommon observed that most of the coastal sites had

remained intact in the 50 years since the Emory's survey had been performed, and termed the state of preservation "unmatched elsewhere in similar Hawaiian sites."

Although Hommon's most significant finds during this survey occur outside of the present project area, they are relevant because they represent the use of a north-south travel route across the upper plateau. In addition, Hommon recorded complete habitation complexes along the southwest shoreline, including SIHP 50-40-98-202, a complex at Kahuako I; SIHP 50-40-98-166, the "Pālāwai Complex," which included an enclosure described as "probably a *ko'a* [fishing shrine] and walls "used as a temporary shelter for fishermen"; and SIHP 50-40-98-086, the "Kapaha a Complex." In discussing significance, Robert Hommon noted that the Kahuako I sites "constitute the most densely concentrated group of well built terraced platforms yet found on Lāna'i." He continued his assessment by stating, "if all of these features were used as foundations for houses; and if they were all used at the same time, the cluster constitutes one of the densest habitation complexes in the Hawaiian Islands" (Hommon 1974).

Investigations by Hallett Hammatt and Douglas Borthwick within the Lāna'i City development region and within the former ranching areas of Kō'e'ele are noteworthy, and are described below.

In 1988, Hallett H. Hammatt, Douglas Borthwick, David Shideler, and Kirstie Nakamura conducted a subsurface data recovery of two trash pits within the 20-acre construction site of the present-day "Four Seasons Lodge at Kō'e'ele" hotel. This upland spot had been the private home of a number of prominent Lāna'i families, and the recovery of historic artifacts from the trash pits added greatly to the understanding of the lives of early ranching families.

Hallett H. Hammatt and Douglas Borthwick performed an archaeological assessment of the Lāiākoā III Subdivision within Kamoku Ahupua'a (Hammatt and Borthwick 1988) and recorded a scatter of basalt and volcanic glass. The investigation recorded numerous coarse-grained basalt fragments, which were interpreted as industrial-grade modern gravel. Many fine-grained basalt flakes and basalt artifacts (including a finished adze fragment, eight adze preforms, a basalt core, and thirteen retouched flakes) were collected, and were determined to have originated at the Kō'i Adze Quarry in the Pālāwai Ahupua'a. Both the modern gravel and the pre-contact artifacts had been transported together from the quarry site by modern equipment.

Hallett H. Hammatt and Douglas Borthwick (1989a) performed a reconnaissance survey of the former Waialua multi-family housing subdivision (currently known as the Iwi'ole Dormitories) in 1989, and recorded a sparse scatter of flaked basalt lithic material. The context of this scatter of cultural material was determined to have been highly disturbed by modern agricultural cultivation.

Also in 1989, Hallett H. Hammatt and Douglas Borthwick (1989b) performed reconnaissance surveys for four separate projects, including the Kō'e'ele golf course, the Kō'e'ele single-family housing, the Queen's multi-family housing and the Olopoa Woods Subdivision. During the survey of the golf course project area, four historic features were recorded. Three were associated with the water system and debris from a ranching-era homestead, and the fourth was an unrelated concentration of pre-contact lithic material. The remaining three surveys produced a very small amount of additional pre-contact lithic material that was found to have originated (again) from the nearby modern rock quarry.

The Kuahua complex of platforms, terraces and rock shelters was first described by Emory (Site 207 at Kuahua Gulch) in 1924, and had not been relocated by Hommon in 1974. Additionally, Tomanari-Tuggle (1992) noted that an area of the valley of Kuahua reported by Emory (1924b:14) to have contained the disorganized remains of approximately twenty flexed burials, was not relocated by this survey.

In 1993, Douglas F. Borthwick and Hallett H. Hammatt conducted an archaeological inventory survey for an approximately 13,000 foot-long waste water pipeline connecting the Lāna'i sewage treatment plant with the Kō'ele golf course irrigation system. This survey did not locate any traditional cultural deposits or structures, but did augment knowledge of the Lāna'i City/Kamoku Ahupua'a development region.

In 1996, Hallett H. Hammatt conducted an archaeological inventory survey of a 14.9-acre parcel in the *ahupua'a* of Paoma'i, along the Malau ridge line above the area developed as the "Four Seasons Lodge at Kō'ele" hotel. SIHP 50-40-98-1598, a pre-contact rectangular habitation enclosure, was recorded, and the positions of other associated crude terraces and rock piles were mapped.

In 1997, David Tuggle performed an archaeological inventory survey of five locations within the rural districts of Ka'a and Paoma'i Ahupua'a, during which he identified five historic properties. The five properties were assigned SIHP numbers. SIHP -1941 was located just west of the Ka'ena/Polihiua roadway fork, and consisted of a 40m long alignment of cobbles and boulders. SIHP -1942 was located along the western side of Lapaiki Road, in the *ahupua'a* of Paoma'i adjacent to the boundary of Ka'a, and consisted of three separate scatters of cultural material, including basalt flakes, marine shell and coral fragments, and a few worked artifacts. Also included in this site were specimens of fire-cracked rock and an exposed horizon of charcoal and burned soil. SIHP -1943 was located proximate to SIHP -1942, and included an intact hummock, which displayed a hearth-like area with fire-cracked rock scatters. SIHP -1944 was located proximate to the previous two sites, and included an additional scatter of fire-cracked rock, and an exposed hearth. SIHP -1945 was located on a ridge line at the edge of a low bluff, at a location named Ka-unu-a-Kane by Emory (1924). Here, the property was a large boulder outcrop against which a terrace of faced, upright stones (slab-shaped cobbles) was constructed. Based on its unusual method of construction, the terrace was interpreted by David Tuggle as probably ceremonial.

In 2000, an archaeological inventory survey was conducted at a 50-acre parcel belonging to the Department of Hawaiian Home Lands at the northwest corner of Lāna'i City. The investigation by Victoria S. Creed, Jared Hammatt and Hallett H. Hammatt (2000) found that the project area had been previously cultivated in pineapple, and no cultural material was observed.

In 2004, Hallett H. Hammatt and David W. Shideler performed an archaeological inventory survey of the Kihāmānienic Church (SIHP 50-40-98-1946) and an associated churchyard complex at Nimiwai Hill (SIHP 50-40-98-1947). Both historic properties are within the region of Lāna'i City, in Kamoku Ahupua'a. The investigation focused on the surface markings that appeared to denote the positions and relationships of some eighteen historic burials within the churchyard, as well as features associated with the early historic occupation of the Kō'ele area, including an irrigation feature and a small section of a stone-lined trail.

In 2007, Tanya Lee-Greig and Hallett H. Hammatt conducted sub-surface testing on property slated for affordable apartment housing during an archaeological field inspection in Lāna'i City, Kamoku Ahupua'a. This investigation was conducted to determine the extent of historic-era cultural material from the earliest days of commercial pineapple cultivation. No cultural structures or deposits were observed during this inspection.

In 2009, Stanley Solamillo, Astrid Liverman, Ph.D. and Katie Kasner conducted an architectural survey of structures in Lāna'i City for evaluation and inclusion in the Lāna'i City "Business Country Town" (BCT) historic district. A number of buildings were determined as eligible for nomination to both National and Hawai'i State Registers of Historic Places. The study determined that the three existing buildings on the present project area were "non-contributing," and the Planning Department of Maui County determined that mitigation at Historic American Building Survey (HABS) Level II was an appropriate action.

4.2 Background Summary and Predictive Model

During Emory's comprehensive study of Lāna'i in 1921 for the Bishop Museum (Emory 1924a), he observed that historic period development on the island, including ranching and pineapple cultivation, had destroyed archaeological sites within the central basin of Pālāwai (Kirch 1985). However, Emory found both the upland plateau and coastal regions largely undisturbed, and the preservation of archaeological remains was excellent. Emory's seven-month study concentrated on mapping and surveying settlement structures, such as house foundations and *heiau* platforms. In addition, Emory's ethnographic investigation of place names formed an invaluable aid to understanding the settlement pattern of the plateau region (Emory 1921).

Archaeological remains related to the use of the upland plateau region for dryland agriculture, such as stacked-basalt enclosures and ceremonial structures, such as *heiau* and stacked-basalt trail markers (*ālihi*), have been recorded in two major areas of the plateau. According to Emory (1924a), upland habitation sites recorded in the summit area of Poho'ula, just northwest of Kō'ele, contained habitation and ceremonial structures as well as a burial ground in close proximity to each other.

Emory's journal of his work in the plateau region (Emory 1921) also documented settlements in Kukuikahi, and the remains of a village just north of Kō'ele in Paoma'i, where dryland agriculture was the primary focus (Emory 1924a). These upland areas, with a slightly larger water supply and good soil, would have sustained a larger population. In the upland region, rainfall for the present project area occurs as moisture-laden tradewinds encounter the low mountainous region of Lāna'i-hale, only 3,379 ft. amsl at its highest point (Stearns 1936). The resulting light orographic rainfall pattern (Giambelluca and Schroeder 1998) is limited to the highest regions of the mountain ridge above Kō'ele. Because rainfall at the upland plateau rarely exceeds 35 inches annually, there are no perennial streams (Stearns 1940).

Situated between the vast expanse of the central basin and the upland plateau is the region within which Lāna'i City was developed. From the area of Lāna'i City, travel into the upland plateau also allowed for travel across Mahana Ahupua'a, to the north coast of the island. While traveling along the upland plateau ridge, both Munro (2007) and Gay (1965) observed traces of the ancient upland forest, and concluded that portions of the upland plateau had been traditionally cultivated. Evidence of slash-and-burn agriculture in the region northwest of Kō'ele

was noted by Munro (2007:47), who estimated that the pre-contact cultivation of sweet potatoes, yams and dryland taro in the uplands probably represented 150 years of erosion, resulting in the exposure of vast amounts of hardpan and subsoil on the **Ka ʻā lands west of Kānepeʻu** ʻu.

Dryland agriculture occurring in the upland plateau was irrigated only by intermittent rainfall. According to Handy and Handy (1972), breadfruit and yams were once plentiful, but due to low rainfall, any drought would have resulted in famine. Owing to these fragile living conditions, it appeared that **Lānaʻi was closely dependent on Maui in times of adversity**.

Other ancillary features, such as small lava-dike quarries for the procurement of fine-grained basalt, and stone artifacts derived from these activities, have been noted in the central basin by Hammatt (1988). Storage caves with parts of wood canoes have been found in the vicinity of **Kaumālapa ʻu**. Munro (2007:48-49) stated that the erosion of the **Ka ʻā lands** occurred before the introduction of livestock to the island. That the **upland region of Lānaʻi was not sufficiently** protected from the wind led Munro to speculate that the upland population must have moved **toward Kōʻele in an attempt to find better shelter**, although sacrificing exposure to rainfall brought by the prevailing tradewinds. **In the region between the forests of Kānepeʻu and Kōʻele**, Munro (2007) saw evidence, in the form of firepits, midden deposits, and burials, that the area had been inhabited for a long period.

From these studies a strong outline for an overall settlement pattern for Kamoku Ahupuaʻa can be postulated. Small, permanent coastal villages appeared in gulch areas in the vicinity of coastal fresh water seeps and wells (Emory 1924a) probably about A.D. 1500, according to Kirch (1985:306), owing to the range of lithic and wood artifacts found in the settlement area of **Kaumālapa ʻu**. The steep, arid gullies of the transition zone, located between the rich marine resources of the coast, and the upland region, have not yet been extensively studied (Colin and Hammatt 1996, Borthwick and Hammatt 1990), and may yield much new information about traditional habitation and agricultural practices. Both the upland and upland plateau regions supported dryland *taro*, sweet potato, breadfruit and yams (Handy and Handy 1972, Emory 1924a, Gay 1965, Munro 2007) probably around A.D. 1650, according to Kirch's (1985:307) descriptions of the adoption of dryland agriculture in marginal lands, as well as changes in traditional methods of warfare. Widespread destruction of the small, permanent, upland populations occurred during warfare between the forces of Maui's chief and those of the Hawai'i island chief **on Lānaʻi about A.D. 1778** (Formander 1880:157).

After the reviewing of histories literature and previous archaeological studies in Kamoku Ahupuaʻa, we believe that the project area once had traditional agricultural and probably habitation sites. However, it is **Lānaʻi City and adjacent** to pineapple cultivated fields which have been graded, excavated and plowed continuously, likely destroying evidence of precontact activities. This project area is on the **southern edge of Lānaʻi City**. In some cases within the city, subsurface soil remnants have remained relatively intact. These relatively undisturbed areas could retain significant traditional pre-contact cultural material, including temporary habitation and agricultural structure remnants. In addition, because this general area has been previously utilized for residential area for many of years, post-contact deposits could also be present in the project parcel. Finally, given the presence of the three multi-family homes built in 1965, modern-era deposits could possibly be identified.

Section 5 Results of Fieldwork

An archaeological field inspection was conducted by Hallett H. Hammatt, Ph.D., on February 2, 2010 with a follow up field check was carried out by Jonas K. Madeus, B.A. on March 30, 2010. The CSH archaeologists conducting the present field inspection documented the three extant structures by taking notes and photographs and a plan view sketch map. All three buildings planned for removal to construct the new health center facility.

The project area parcel is located within Lānaʻi City, a tract of land developed for plantation laborers, supervisory personnel and equipment of the Hawaiian Pineapple Company beginning in the early 1920's. There are indications from historical records that the portion of Lānaʻi City in the region of Dole Park was bulldozed level prior to the construction of plantation structures. It appears that little additional subsurface disturbance, other than trenching for roadways and underground utilities, has occurred within the bounds of Lānaʻi City.

During the pedestrian survey of the Lānaʻi Community Health Center building and the project parcel, no surface cultural material remains or deposits were observed. As noted above, the current **Lānaʻi Community Health Center building is one of three small multi-family housing units constructed in 1965 on the project area (Figure 18)**. The other two buildings are no longer in use. The three buildings were previously documented in an architectural inventory survey carried out by Solamillo and others (2009), and are covered in greater detail in the nomination form for the **Lānaʻi City BCT Historic District to the Hawai'i Register of Historic Places**, (Solamillo 2009, APP).



Figure 18. View of portions of the three multi-family buildings that are located on the main portion of the project area; view to the north northwest

5.1 Architectural Description and Archaeological Observation

The following architectural descriptions are for the three small multi-family buildings that are planned for removal prior to the beginning of construction for the Lāna'i new Community Health Center. All of the architectural information in this section is adapted from Solamillo (2009), field studies performed by Astrid Liverman, Ph.D. and Katie Kasmer in 2009, and the results of the Multi-Property Nomination to the Hawaii'i Register of Historic Places, Lāna'i City BCT Historic District, Lāna'i, Hawaii'i, by the County of Maui Planning Department, Wailuku (Solamillo 2009).

The general project area appears to be approximately 30 to 50 cm higher in elevation than the ground surface of the surrounding streets and the adjacent parcels north, east and west. This might have been from fill during the first construction of the structures. All electrical lines are overhead with other utilities underground. Some ornamental plants surround the buildings and include ti plants (*Cordyline frutescens*), banana plants (*Musa sp.*), palm trees (*Palmaeaceae*), Norfolk island pine trees (*Araucaria heterophylla*) and other unidentified plants.

5.1.1 Site # LC-BCT-019

Name of Structure: Dormitory (Four-plex)
Feature Type: Building Structure (Plantation Vernacular)
Feature function: Multi-family and Dormitory
Age: Original construction: circa 1965

Description: Original Construction circa 1965

Site # LC-BCT-019 is a four-plex at 334 Sixth Street that appears to have been erected ca. 1965 by HPCo carpenters as a dormitory for single men who arrived during the picking season. It replaced an earlier dwelling that had been erected by Kikuchi Honda and his building crew in 1923-1924 (Figure 19). The building was converted into four apartment units at an indeterminate date and remained in that use in 2008. This building was modified sometimes in the past but the specific date is not known (Solamillo *et. al.* 2009).

Archaeological Observations

Site # LC-BCT-19 is a building structure located 8.8 m on the south side of Sixth Street and to the west of Houston Street, and east side of Gay Street. This structure is rectangular in shape and built on a concrete slab. It is constructed from lumber or wood and corrugated tin roof. The sidings or exterior walls of the building are 6 in. wide by 1 in. thickness of Tongue and Groove (TNG) wood. The building measures 71 ft. and 6 in. (21.7 m) in length by 22 ft. and 7 in. (6.9 m) in width, and by 11 ft. and 9 in. (3.63 m) in height to the highest peak of the roof. The roof is a cable roof style. There are four units in this building. Window treatments are lowered windows indicating a more recent replacement date. Two concrete driveways or parking lots are at the front of this structure toward Sixth Street. There is also a concrete slab at the southeast corner of the building which probably the septic or cesspool for the building.

While the sidings on the building are likely the original wood 6 in TNG wood or board, the exterior walls and tin roof are deteriorating and rotting away. As the windows are not original and the given high degree of deterioration little to no historic integrity remains.

Nomination to the National Register of Historic Places

This structure was not nominated to the State and National Register of Historic Places because it is a non-contributing structure or feature of the Lāna'i City, Business Country Town historic district, according to the Historic Resources Inventory Identification form (Solamillo *et. al.* 2009).

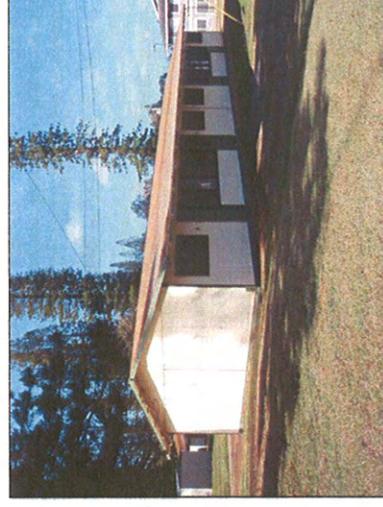


Figure 19. View of Site # LC-BCT-019, one of the two abandoned structures on the project area, at 334 Sixth Street; view to the northwest

5.1.2 Site # LC-BCT-020

Name of Structure: Women's Center/Arts Center
Feature Type: Building Structure (Plantation Vernacular)
Feature function: Multi-family and Institutional
Age: Original construction: circa 1965

Description: Original Construction circa 1965

The four-plex at 624 Houston Street appears to have been erected ca. 1965 by HPCo carpenters as a dormitory for single men who arrived during the picking season. It replaced an earlier dwelling that had been erected by Kikuchi Honda and his building crew in 1923-1924 (Figure 20). This building was converted into four apartment units at an indeterminate date and remained in that use in 2008. This building was modified sometime in the past but the date is not clear (Solamillo *et. al.* 2009).

Archaeological Descriptions

Site # LC-BCT-20 is a building structure which is situated 7.5 m from the west side of Houston Street, east of Site # LC-BCT-021 and southeast of Site # LC-BCT-021. This structure is rectangular in shape, built on a concrete slab, and constructed from lumber or wood with a corrugated tin roof. This building has modern sliding glass windows. The sidings or exterior walls of the building are 6 in. wide by 1 in. thickness of Tongue and Groove (TNG) wood. The building measures 72 ft. and 4 in. (21.8 m) in length by 22 ft. and 4 in. (6.8 m) in width, and by 11 ft. and 5 in. (3.5 m) in height to the highest peak of the roof. The roof is a cable style roof and there are only two units in the building. **One unit is currently used by the Lānaʻi Community Health Center and the other by the Art Center.** The building has a concrete driveway and/or parking lot on each end which can accommodate two cars.

The sidings or exterior walls of this building appear to be the original walls because they are TNG wood and/or board, the windows have been replaced sliding glass windows and the interior of this structure had been altered. Therefore the structure has no historic integrity.

Nomination to the National Register of Historic Places

This structure is not eligible for nomination to the National Register of Historic Places (NRHP), because it is a non-contributing building or feature of the BCT historic district, according to the Historic Resources Inventory Identification form (Solamillo 2009).



Figure 20. View of Site # LC-BCT-020; this building is currently used by the current Lānaʻi Community Health Center and the Lānaʻi Women's Center on the project area at 624 Houston Street; view to the north.

5.1.3 Site # LC-BCT-021

Name of Structure: Dormitory (four-plex)
Building Structure (Plantation Vernacular)
Feature Type: Multi-family
Feature function: Original Construction: circa 1965
Age:

Description: Original Construction circa 1965

This dwelling at 622 Gay Street appears to have been erected ca. 1965 by HPCo carpenters as a dormitory for single men who arrived during the picking season. It replaced an earlier dwelling that had been erected by Kikuchi Honda and his building crew in 1923-1924 (Figure 21). The building was converted into four apartments at an indeterminate date and remained in that use in 2008. This building was modified sometime in the past but the specific date is not known (Solamillo *et. al.* 2009).

Archaeological Descriptions

Site # LC-BCT-021 is a building structure that is located 4 m east side of Gay Street and to the southwest of Site # LC-BCT-019 and to the west side of Site # LC-BCT-020. This structure is built on a concrete slab and constructed from lumber or wood and corrugated tin roof. The sidings or exterior walls of the building are 4 ft. wide by 1 in. thickness of plywood with grooves. The building measures 75 ft. (22.8 m) in length by 22 ft. and 3 in. (6.8 m) in width, and by 11 ft. and 9 in. (3.63 m) in height to the highest peak of the roof. The roof is a cable style roof with four bedroom units in the building. The original window treatments have been replaced with louvered windows. There is one door for each unit toward the Gay Street and each end of the building has a concrete driveway or parking lot. There is an additional concrete slab at the northeast corner of the building which may be the septic or cesspool for the building.

As the sidings or exterior walls and the windows on the building are of a more recent construction style and the exterior walls and tin roof are deteriorating and rotting away, little to no historic integrity remaining.

Nomination to the National Register of Historic Places

Site # LC-BCT-021 is not nominated to the NRHP as it is a non-contributing feature or building to the BCT, according to the Historic Resources Inventory Identification form (Solamillo 2009).

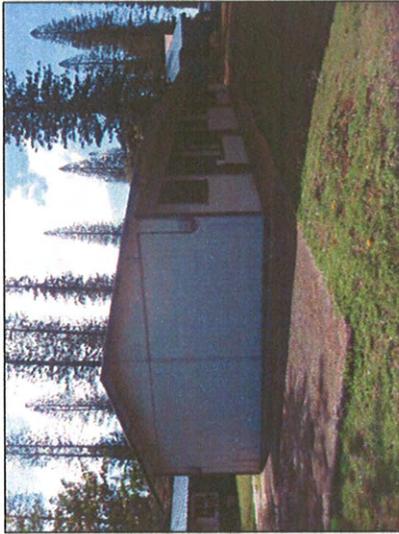


Figure 21. View of Site # LC-BCT-021, one of the two abandoned structures on the project area, at 622 Gay Street, view to the north.

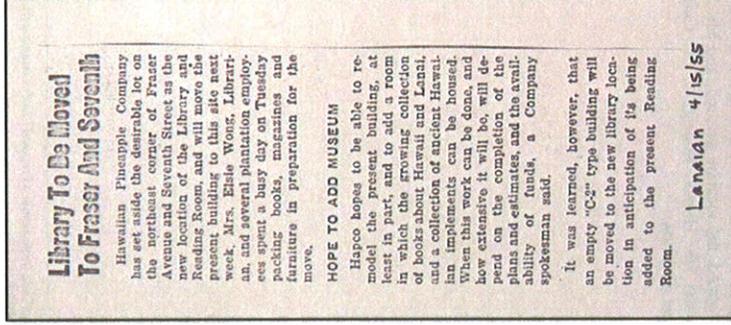


Figure 22. Newspaper clipping from the *Lanaiian*, dated April 15, 1955, regarding plans of the Hawaiian Pineapple Company to move building LC-BCT-024 from the Lānaʻi High School to its present location, and to add another structure to the original structure (Solamillo et al. 2009).

As noted above, many of the building structures in Lānaʻi City were modified one or more times in the past, as a result of which, their original integrity has been distorted. The period during which the three structures within the present project area may have been modified is not clear. Consequently, these structures are deemed non-contributing features or buildings to the Lānaʻi City BCT historic district. The above newspaper clip mentions relocation and plans for modification to building LC-BCT-024 in Lānaʻi City, (Figure 22) (Hill et al. 2009). While this building is not on the current project area, the news paper clip shows a history of continue modifications to some buildings in Lānaʻi City.

Section 6 Summary and Interpretation

A review of the historic documentation indicates that Lāna'i City, in Kamoku Ahupua'a, was extensively developed for residential use and commercial pineapple cultivation beginning in the early 1920's. Construction of utility installation would have been contributed to the high level of disturbance of this current project area. Construction would have included roads, driveways, water line and sewer line installation. In addition, gardening and landscaping also contributed to the surface disturbance of the project area. The high level of disturbance in this area has probably obliterated any surface evidence that the native Hawaiian inhabitants of these upland slopes might have left behind.

However, based on the number of traditional cultural historic properties previously recorded by Emory (1924a) in the upper basin and upper plateau region, in addition to historic properties identified recently by Cultural Surveys Hawai'i in the region of Kihāmānienī and Kō'ele, it is possible that excavation and construction in the proposed project area will occur in an area where subsurface traditional pre-contact or historic cultural deposits and buried structure remnants may be present.

Additionally, because the project area is located within the boundaries of the original Lāna'i City, it is possible that subsurface deposits of post-contact cultural material and remnants of plantation structural features may be present in the project area.

Section 7 Recommendations

The project area is located within the original layout of Lāna'i City. A review of historic photographs indicates that it was not previously cultivated in pineapple. Soil stratigraphy in such areas may consist of modern fill material overlaying undisturbed regional soils, indication that undisturbed cultural deposits may exist in scattered pockets. Such subsurface deposits may include indigenous and post-contact cultural material remains, remnant structural remains, and, possibly, human burials.

Given the above information precautionary monitoring is recommended during ground altering activities of the project area and excavation associated with the Lāna'i Community Health Center.

Such subsurface deposits may include both traditional or indigenous and post contact cultural material remains, and probably of structural remains, and probable human burials.

In the event that human remains are identified during the course of excavation, all work in the immediate area should be stopped, the location secured, and Ms. Martha Sevans of the Lāna'i Archaeological Committee and Mr. Hinano Rodrigues, the Cultural Historian from SHPD, should be contacted for further direction.

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Appendix C

Summary of Cultural Impact Assessment for Proposed
Lanai Health Center, Cultural Surveys Hawaii, Inc.,
May 2010

Cultural Impact Assessment

For the Lānaʻi Community Health Center Project, in Kamoku Ahupuaʻa, Lahaina District, Lānaʻi Island

[TMK: (2) 4-9-006: 011]

Prepared for
Wilson Okamoto Corporation

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Management Summary

Reference	Cultural Impact Assessment for the Lānaʻi Community Health Center Project, Kamoku Ahupuaʻa, Lahaina District, Lānaʻi Island [TMK: (2) 4-9-006: 011] (Dagan, Cordova, Hill, Lee-Greig and Hammatt 2010)
Date	May 2010 DRAFT
Project Number (s)	CSH Job Code: Kamoku 10
Project Location	The subject project site is located in Lānaʻi City and sits at the corners of Sixth Street to the northwest, Gay Street to the southwest, Seventh Street to the southeast and Houston to the northeast [TMK: (2) 4-9-006: 011].
Land Jurisdiction	Property Lessee: Lānaʻi Community Health Center-Non Profit Property Owner: Castle & Cooke Resorts, LLC-Private
Project Description	The new health center would be a "U" shaped, single story building of approximately 6,800 sf. The design of the building will be made in the "plantation home style" and will be aesthetically compatible with surrounding buildings. The facilities will house spaces for consult rooms, exam rooms, dental specialty/exam rooms, a mini laboratory, an X-ray area, and offices. The building will also have room for a staff lounge, reception/conference rooms, administrative areas and multipurpose rooms. Multipurpose rooms will be available for flu clinics, health education events, Women, Infants and Children (WIC) Program activities, and Lānaʻi Kū Center activities. The facilities for the health center will use approximately 25,067.07 square feet of the parcel. Castle and Cooke Resorts, LLC will lease the land to the Lānaʻi Community Health Center.
Project Acreage	25,067.07 square feet, or about 0.575 acres
Region of Influence (ROI) also referred to as "study area"	The area of direct effect (the "project area") for the proposed project is the construction footprint of the Lānaʻi Community Health Center structure itself. When assessing the presence or absence of direct, indirect, and cumulative effects of the project on the traditional cultural practices of this region we would look at the ROI for this project which is defined as the geographical area encompassing the <i>ahupuaʻa</i> of Kamoku referred to as the "study area".
Regulatory Context	This cultural impact assessment was conducted per the requirements of the Hawaii State Office of Environmental Quality Control (OEQC) subject to Hawaiʻi Administrative Rules (HAR) Title 11 Chapter 200-4(a) and Chapter 343 of the Hawaiʻi Revised Statutes (HRS). This cultural impact assessment follows the Guidelines for Assessing Cultural Impacts as set forth by the OEQC.

<p>Summary and Recommendations</p>	<p>Currently existing on the property are three buildings which were once used as dormitories by workers employed by the plantation. Two of these buildings are now abandoned, and a portion of the third building houses the existing administration offices for the health center and the activity room for the Lanai Art Center. The project area is located in Lāna'i City within an area that is being considered for nomination to the National Register of Historic Places as the Lanai City Business Country Town Historic District. As described in the nomination to the National Register of Historic Places, the three buildings located on the current project site are listed as non-contributing buildings. These buildings were built in 1965 by Plantation Housing Ltd. among a total of nine dormitories. These three structures have been considered non-contributing buildings of the Lanai City Business Country Town Historic District and are slated for removal to make room for construction of the new Lāna'i Community Health Center.</p> <p>Throughout the consultation process the Lāna'i community identified their need for and support of the proposed Lāna'i Community Health Center. The new location and the new facilities were viewed as necessary improvements to the island's overall health care services.</p> <p>There will be no adverse impacts to cultural resources or traditional cultural practices by the proposed project. To the contrary, the project is viewed as an enhancement to this community.</p>
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Section 1 Introduction

1.1 Project Background

At the request of Wilson Okamoto Corporation, Cultural Surveys Hawai'i, Inc. (CSH) completed a Cultural Impact Assessment (CIA) for a 25,067.07-square foot, or 0.575 acre, parcel in Lāna'i City, located in Kamoku Ahupua'a, Lahaina District, Lāna'i Island [TMK: (2) 4-9-006:por. 011] (Figure 1, Figure 2, Figure 3). The health center has been given a grant from the County of Maui, through the federally-funded Community Development Block Grant (CDBG) program. This grant was issued to provide funding for planning and design phases of the proposed new Lāna'i Community Health Center facilities. The new health center will serve low- and moderate-income residents of Lāna'i.

The Lāna'i Community Health Center project is located in Lāna'i City northwest of the Lāna'i Senior Center on the northwestern portion of parcel (Tax Map Key: 4-9-006:011). The parcel is bounded by Houston Street on the northeast, Seventh Street on the southeast, Gay Street on the southwest, and Sixth Street on the northwest. Castle & Cooke Resorts LLC currently owns the parcel and will lease it to the Lāna'i Community Health Center. The area that the health center facilities will occupy is approximately 42,857 square feet, or about 0.98 acres. The Lāna'i Community Health Center will subdivide the parcel and use approximately 25,067.07 square feet (about 0.575 acres) of the northwest portion of parcel 011 for the new facility. The southeastern portion of this parcel along Seventh Street contains existing facilities occupied by the Lāna'i Art Center and Maui Community College, which will remain without changes (Figure 4 and Figure 5).

The project area is located in Lāna'i City within an area that is being considered for nomination to the National Register of Historic Places as the Lāna'i City Business Country Town Historic District (Lāna'i City BCT). In the registration form submitted to the National Register of Historic Places, the three buildings located on the current project site are listed as non-contributing buildings. These buildings were built in 1965 by Plantation Housing Ltd. among a total of nine dormitories constructed throughout Lāna'i City. The three structures located on the subject property are non-contributing buildings to the Lāna'i City BCT.

The Area of Potential Effect (APE) for the proposed project includes 25,067.07-square feet of property in the northwest portion of parcel 011. The Region of Influence (ROI), herein after referred to as the "study area", encompasses the *ahupua'a* of Kamoku.

1.2 Scope of Work

The scope for the cultural impact assessment is summarized as follows:

1. Examination of historical documents, Land Commission Awards, historic maps, with the specific purpose of identifying traditional Hawaiian activities including gathering of plants, animal and other resources or agricultural pursuits as may be indicated in the historic record.

2. A review of the existing archaeological information pertaining to archaeological sites within the study area to reconstruct traditional land use activities and to identify and describe the cultural resources, practices, and beliefs associated with the parcel and identify present uses, if appropriate.
3. Interviews with persons knowledgeable about the past and present cultural practices in the project area and its surrounding area. We anticipate both formal and informal interviews.
4. Preparation of a report on items 1-3 summarizing the information gathered related to traditional practices and land use. The report will assess the impact of the proposed undertaking on the cultural practices and features identified.

DRAFT

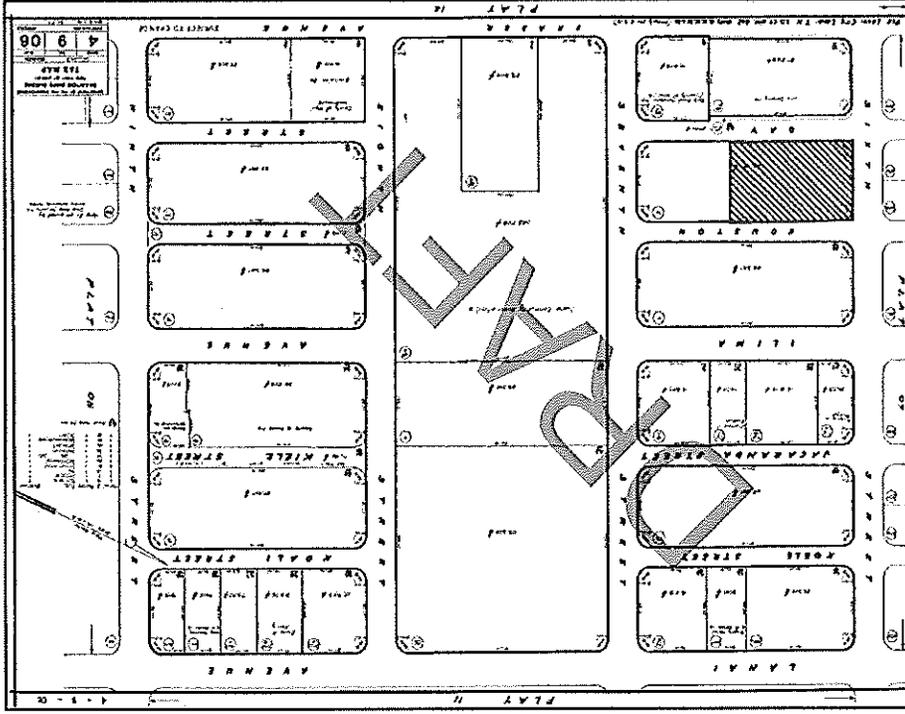


Figure 2. TMK map [TMK: (2) 4-9-006; Parcel 011] showing project area in red hatching.

Figure 1. Topographic map with ROI outlined in dark blue.

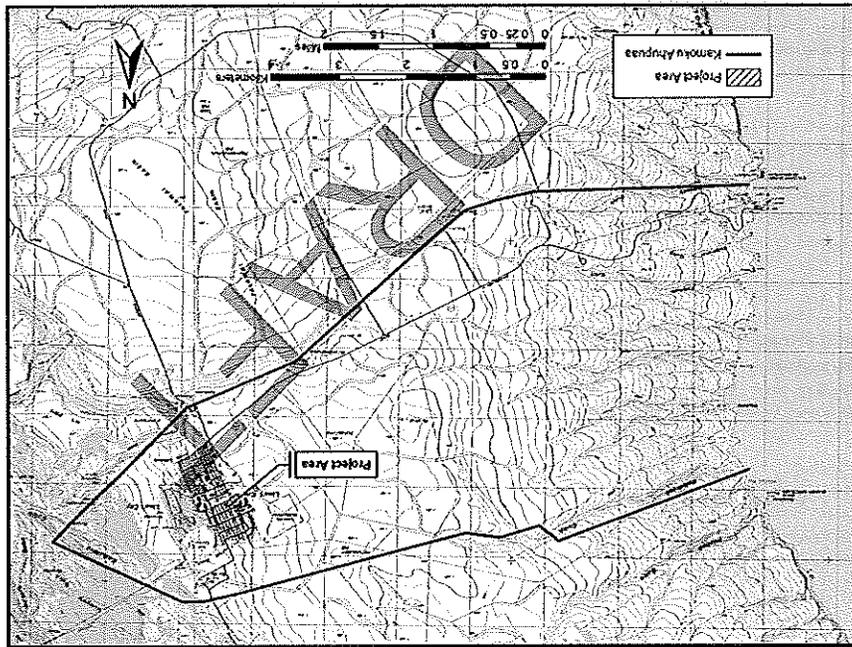




Figure 5. View of the central portion of the project area showing the signage for the Lāna'i Community Health Center and the Lāna'i Women's Center in the middle portion of the photo; view to the southwest.

1.3 Environmental Setting

1.3.1 Natural Environment

The project area is situated within the central plateau region of Lāna'i Island, at an average elevation of 1,600 feet (488m) above mean sea level (amsl). Generally, the soils underlying Lāna'i City are deep, nearly level, well-drained soils of the Molokai-Lāhaina Association. This soil association is noted for fine-textured soils of the upland regions. More specifically, the sediments within the project area are Lāhaina silty clay (LaB), 3 to 7 percent slopes. In a representative profile, the surface layer is about 15 inches thick, consisting of dark reddish-brown silty clay. The subsoil is 45 inches thick, consisting of dusky-red and dark reddish-brown silty clay. The substratum is soft, weathered basic igneous rock (Foote et al. 1972:78).

Lāhaina silty clay (LaB) soils are characterized by slow runoff with a slight erosion hazard. Permeability is moderate with this soil type considered good for sugarcane and pineapple cultivation. Small acreages are used for truck crops, pasture, and home sites (Foote et al. 1972:79).

Temperatures in this upland region range between 69° and 80° F. The average annual rainfall in the area ranges from 25-35 inches (699-800 mm) with the heaviest rains in January and the lightest in June. The entire island lies in the dry rain shadow of the West Maui Mountains on Maui, leaving it without a wet windward side. Winds are consistent northeasterly trades.

Vegetation within Lāna'i City is dominated by plantings of Cook pine trees (*Arancaria cotumnae*) and Norfolk Island pine trees (*Arancaria heterophylla*). These trees were introduced in the 1920's by naturalist George Munro, when the Palāwai Basin began to be cultivated in pineapple and the master plan for housing the pineapple plantation laborers involved the layout for Lāna'i City (Taylor 1976). Most all other vegetation in the region of Lāna'i City is imported landscape and ornamental, with various non-native plant species, such as *ti* (*Cordyline fruticosa*) evident in the yards of most retail establishments and residences.

The landscape of the project area has been heavily modified by historic industrial and residential subdivision construction and forest clearance to develop agricultural lands. Aside from the city-wide plantings of Norfolk Island pine trees, the northern slopes leading toward Kō'ele are also planted in introduced eucalyptus (*Eucalyptus robusta* being dominant), silver oak (*Grevillea robusta*), and various fruit trees, such as mango (*Mangifera indica*) and papaya (*Carica papaya*) (H.E.A.R. 2009). Small stands of native *kukui* (*Aleurites moluccana*) were observed near the project area during the present field inspection.

1.3.2 Built Environment

Lāna'i City was constructed beginning in 1922, following the purchase of the island by James Drummond Dole to grow pineapple. The city of Lāna'i was constructed to provide laborer housing, stores, schools, a hospital, a library, a bank, social halls, a gymnasium, a movie house, warehouses and repair shops (Mackie 1939). The master-planned community was designed to expand as additional laborers were needed. The present project area is surrounded by other buildings which appear to be original to the period during which the original construction of

Lānaʻi City by the Hawaiian Pineapple Company occurred. According to the history of Castle & Cooke by Taylor and others (1976), most portions of the city had been completed by 1926. Three small dormitories were built on the subject parcel in 1965 which replaced plantation homes that were there previously constructed between 1923 and 1924. There are paved roads, a water hydrant, water meters and electrical lines on and around the project area.

The project area is located north of Dole Park, the city center and northeast of the Lānaʻi High & Elementary School. The original character of the Dole Park region of Lānaʻi City remains as it was constructed in the years before World War II, with very few modern changes visible. With the switch from pineapple cultivation to resort and hotel development in 1991, an expansion of outlying residential neighborhoods occurred, resulting in modern townhomes and single-family homes at the outer edges of present-day Lānaʻi City.

Section 2 Methods

This section details the methods used by CSH personnel during the fieldwork and preparation of this cultural impact assessment. Interviews and consultation was conducted by lead researcher, Colleen Medeiros Degan, B.S. and contributing researchers Anna Cordova, B.A. Background research was compiled by Mrs. Tanya L. Lee-Greig, M.A.; Jonas K. Madsen, B.A.; and Robert H. Hill, B.A. under the overall guidance of Hallett H. Hammatt, Ph.D. Community consultations were accomplished over a three-month period from February 2010 to May 2010. This cultural impact assessment follows the Guidelines for Assessing Cultural Impacts as set forth by the Hawaii State Office of Environmental Quality Control (see Appendix A).

In recent years, several in-depth oral histories have been collected by Cultural Surveys Hawaii from *kamaʻāina* and *kāpuna* of Lānaʻi. Oral history interviews are extensive, and often exciting for the participants who enjoy sharing their knowledge and life experience. But oral histories are also time consuming and can be physically and emotionally taxing on *kāpuna*. For the latter reason, Cultural Surveys Hawaii tries to avoid the "over taxing" the communities we work in and the *kāpuna* we work with. Much of the information presented for this project was shared during previous consultation for the Kamoku *ahupuaʻa*. As a part of the consultation for this project, letters and phone calls went out to community members and past interviewees asking explicitly for permission to utilize previously shared traditional, historical and cultural knowledge about Kamoku *ahupuaʻa* and how it applies to the current project area.

2.1 Document Review and Research

Numerous published and unpublished accounts, surveys, reports, maps and photographs found in public and private collections pertaining to Lānaʻi City and the study area were investigated by Cultural Surveys Hawaii, Inc. English language historical documents, maps, and archaeological studies were researched at the DLNR/SHPD library, the Survey Office of the Department of Accounting and General Services (DAGS), the Maui County Planning Department, and the Cultural Surveys Hawaii (CSH) library; in addition to private collections held by others in the community. Research regarding the history of the Hawaiian Pineapple Company was conducted using the services of the Bailey House Museum, in Wailuku, Maui. Online research regarding the present cultural landscape study for Lānaʻi Island by Kept Malby (May 2008a) and the online resources of the Lānaʻi Culture and Heritage Center (May 2008b) were consulted for current information regarding the traditional history of the island. Online reports of meetings of the Maui/Lānaʻi Island Burial Council and Hui Māiama Pono O Lānaʻi were accessed at <http://Hawaii.gov/dlnr/meetings/Meetings> and <http://huimalama.tripod.com>, respectively. In addition, all relevant Land Commission Awards (LCA) and Royal Patents were researched using resources associated with the Waipona Aina online database (Waihona Aina Corp. 2002).

2.2 Scoping and Community Outreach

2.2.1 Government Agencies, Advisory Councils, Local Community Organizations and *kama'āina*

In order to identify individuals with knowledge of the traditional cultural practices of the area of potential effect or the study area, CSH initiated contact with government agencies, advisory councils, local community organizations and *kama'āina*. Two separate letters were mailed out for this CIA: a formal contact letter was sent to government agencies, advisory councils, local community organizations and an informal contact letter was sent to *kama'āina* who CSH has consulted with on various occasions in the past.

The formal contact letter was mailed February 10, 2010. The contact letter contained a brief description of the proposed project and a project area maps. The following is the text of the formal letter:

On behalf of the County of Maui, Community Development Block Grant Program, the Lāna'i Community Health Center and Wilson Okamoto Corporation, Cultural Surveys Hawaii, Inc. is conducting a Cultural Impact Assessment (CIA) for the proposed Lāna'i Community Health Center (hereafter referred to as "the health center") project. The project is located in Lāna'i City, Kamoku Ahupua'a, Lāhaina District, Lāna'i Island (TMK: (2) 4-9-006: 011). More specifically, the proposed health center will be just north of the Lāna'i Senior Center between Houston Street and Gay Street, and 6th Street and 7th Street.

The area is approximately 42,857 square feet, and is currently owned by Castle & Cooke Resorts LLC who will lease it to the health center. The parcel will be subdivided, and the health center will use approximately 25,067 square feet of the western portion for the new facility. Currently existing on the property are three buildings which were once used as dormitories by workers employed by the plantation. Two of these buildings are now abandoned, and a portion of the third building houses the existing administration offices for the Lāna'i Community Health Center and the activity room for the Lanai Art Center. The health center has been given a grant from the County of Maui, through the federally-funded Community Development Block Grant Program. This grant was issued so that the health center could plan and design a new health center in order to serve low- and moderate-income residents of Lāna'i. The health center would provide the following:

- **accessible primary medical care**
- **dental care**
- **behavioral health services**
- **prenatal and family planning**
- **nutrition and preventive health education services**

In addition to the CIA, Cultural Surveys Hawaii is also currently performing a Field Inspection and Literature Review in order to address the project's historic preservation review process. The project area is located in Lāna'i City within an area that is being considered for nomination to the National Register of Historic Places as the Lanai City Business Country Town historic district. In the registration form submitted to the National Register of Historic Places, the three buildings located on the current project site are listed as non-contributing buildings. These buildings were built in 1965 by Plantation Housing Ltd. among a total of nine dormitories. Because they are non-contributing buildings, they will be removed to make room for the new construction.

The purpose of the CIA is to evaluate potential impacts to traditional cultural practices as a result of the proposed project.

We are seeking your *kōkua* or help and guidance regarding the following aspects of our study:

- **General history and present and past land use of the project area.**
- **Knowledge of cultural resources which may be impacted by the Lāna'i Community Health Center area - for example traditional plant gathering sites, historic sites, archaeological sites, and burials.**
- **Knowledge of traditional gathering practices in the area -- both past and ongoing.**
- **Cultural associations of the project area, such as legends and traditional uses.**
- **Referrals of *kāhuna* or elders who might be willing to share their cultural knowledge of the project area and the surrounding *āhiupua'a* lands.**
- **Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the proposed Lāna'i Community Health Center area.**

We invite you to contact us, Anna Cordova and/or Colleen Medeiros Dagan, at 1-808-242-9882. You may also contact us by e-mail at acordova@culturalsurveys.com and cdagan@culturalsurveys.com if you have any information you would like to share.

The informal letter sent to *kama'āina* was mailed March 30, 2010 and included the following text:

My name is Anna Cordova and I work for Cultural Surveys Hawaii. Ms. Colleen Dagan, Ms. Tanya Lee-Greig and I will be conducting a Cultural Impact Assessment for the Lāna'i Community Health Center Project. I am writing to introduce myself and also to familiarize you with the proposed project. Just as you have provided help for past projects in this area – the Lanai

Senior Center, the high school and elementary expansion, and the affordable housing project - we are seeking your *kōkua* and guidance for this project. We understand that, because they share the same *ahupua'a*, much of the traditional and historical knowledge may be the same as in past projects. For this reason, we ask for permission to use your previously given information for this project. Any additional information regarding the specific parcel on which the proposed project will be located will be very useful and appreciated.

Here are a few points containing general information about the project:

- Wilson Okamoto Corporation is the planner in this project that aims to build new facilities for the Lāna'i Community Health Center.
- The new health center will be located just north of the Lanai Senior Center between Houston Street and Gay Street, and 6th Street and 7th Street (Figure 1).
- The project is being financed by the federally-funded Community Development Block Grant Program.
- Castle & Cooke Resorts LLC currently owns the property and will lease it to the health center.
- The project is located within an area that is being considered for nomination to the National Register of Historic Places as the Lanai City Business Country Town Historic District.
- There are three buildings located on the current project site. They were built in 1965 by Plantation Housing Ltd. and are listed as non-contributing buildings. They will be removed to make room for the new construction.
- In order to serve low- and moderate-income residents of Lāna'i, the health center would provide the following:
 - accessible primary medical care
 - dental care
 - behavioral health services
 - prenatal family planning
 - nutrition and preventive health education services
- Specifically, we are seeking your *kōkua* and guidance regarding the following aspects of our study:
 - Cultural associations of the project area, such as legends and traditional uses and/or historical land use of the study area.
 - Knowledge about cultural resources and/or traditional cultural practices within and around the project area that may be impacted.

If there is anything you might like to share, please contact any one of us, Colleen Dagan B.S., Tanya Lee-Greig M.A. and/or me, Anna Cordova B.A. at 1-808-242-9882. You may also contact us by e-mail at cdagan@culturalsurveys.com, leeegreig@culturalsurveys.com or acordova@culturalsurveys.com.

Section 3 Traditional and Historic Background

The division of Lāna'i's lands into political districts may have occurred under the direction of the chiefs of Maui, as Lāna'i appeared historically to be "subject or tributary to Maui" during the times of Kamalawalu (about 1550-1600 AD) (Fornander 1916: 424, 1919:206-8). Moffat and Fitzpatrick (1995:23) explain that while Lāna'i was sometimes considered a *mokupuni* or division of land surrounded by water, in other instances Lāna'i was noted as a *kālana* or division of land that was smaller than a *moku* (district) and subordinated to one of the *moku* of Maui Island.

This political position of Lāna'i would play a role in the political aspirations of the Maui and Hawai'i Islands chiefs and the warfare tactics they employed. The boundaries of the present project area *ahupua'a* of Kamoku are traditional, though refined by surveyors employed by the Kingdom of Hawai'i beginning in the 1850's. The *ahupua'a* of Kamoku (Figure 6) is bounded by the mountainous region of Lāna'i to the northeast and by the ocean to the southwest.

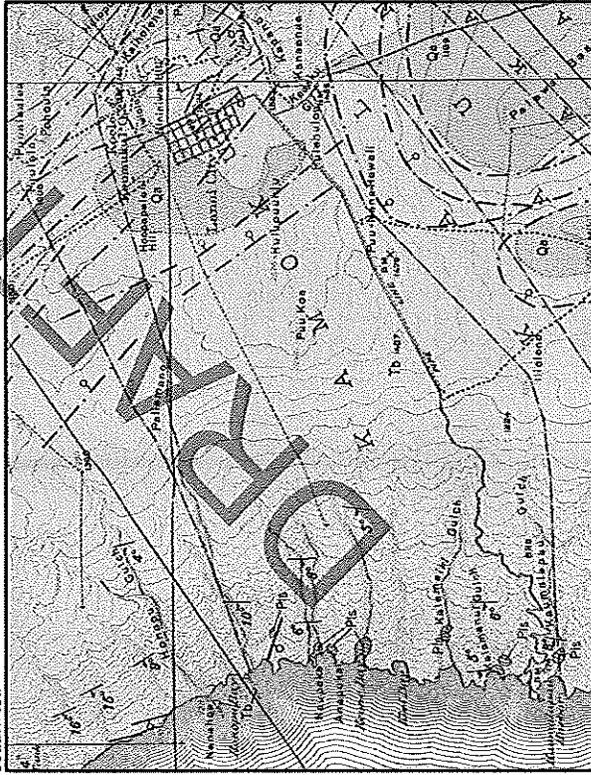


Figure 6. The portion of Kamoku Ahupua'a, showing the location of Lāna'i City in its easternmost (right) upland portion (Stearns 1942:Plate 1).

3.1 Traditional and Historical Background

3.1.1 Traditional Accounts

While the mythological and traditional accounts of the upland areas of Lāna'i are relatively scarce, an analysis of place name meanings may yield some insight into the patterns of life in an area (Table 1). Literal translations of several of the place names for land areas and divisions within the project area are listed below. Most all translations are taken from Pukui et al. (1976), Emory (1924a), Fornander (1916-1920), and Kalkkava (1888). Maly (2008a) notes that the proliferation of place names in the region points to a "viable native presence on the island of Lāna'i in traditional times."

Table 1. Kamoku Ahupua'a - Place Names Near Lāna'i City

Kamoku	<i>Lā</i> , the district or the cut-off portion (Pukui et al. 1976:82); the piece cut off (Emory 1924:31)
Kō'ele	<i>Lā</i> , dark sugar cane (Pukui et al. 1976:114); Piece seized by a chief (Emory 1924:33)
Hulupe'u'uniu	Whirling feather hill (Emory 1924:30)
Hokuaō	Morning star (Emory 1924:29)
Makapūā	Enclosed eyes (Emory 1924:34)
Pu'u Nānā o Hawai'i	Hill to view Hawai'i (Emory 1924:36)
Kouaiku	The standing root (Emory 1924:32)
Pūhuluhū	Big roosting (Emory 1924:36)
Kaunaikahoku	The stars are out (Emory 1924:32)
Kaiohōā	The <i>hoeloa</i> <i>baōna</i> (Emory 1924:31)

The above place names, together with the environmental data, suggest that the lands of the central plateau basin were productive, agriculturally and of great traditional significance. Hawaiian place names typically tell the story or significance of an area. Three place names, located west of the city may give some insight as to how this place was utilized in traditional times. These place names include Hōkūāu, Kaunaikahōkū, Pu'u Nānā i Hawai'i.

Hōkūāu is located west of the city, in the fallow pineapple fields. Hōkūāu translated means "morning star" and is located on plateau lands (Emory 1924: 29). It is further described as the name given to Venus when seen in the morning (Elbert and Pukui 1986:76). Possibly, this was a good spot from which to view Venus just before dawn. Kaunaikahōkū is located approximately one half mile south of Lāna'i City. Its name means "The stars are out". Emory notes that this name describes the normally cloudless skies above this place (1924: 32). Approximately two miles west of Kaunaikahōkū, is Pu'u Nānā i Hawai'i. This would be the "Hill to view Hawai'i (Emory 1924:36). From this place, it appears that one might have a view of Hawai'i to the southeast. These three place names seem to indicate that these specific upland areas were excellent viewing vantage points.

In this region of the island of Lāna'i, gulches, ridges, hilltops and other terrestrial landmarks were given descriptive names, some referring to heroic characters of Hawaiian mythology, and

others suggestive of actions which could be accomplished (i.e., the sighting of the island of Hawai'i from its' promontory. The upland plateau region was of great importance, both in terms of habitation and subsistence during the traditional or pre-contact time period, as well as an area somewhat sheltered from coastal raiding parties from other islands.

Emory (1924a: 122) estimated the aboriginal population of Lāna'i as about 3,150 prior to 1778. He stated that the inhabitants of Lāna'i survived by collecting dew on "oiled rapsos or whipped from heavy shrubbery." Water that accumulated in natural depressions was husbanded carefully, and a few wells were dug along the coast and were "plastered on the seaward side with mud and straw" to stop the infiltration of sea water. Emory stated that the water derived from these wells was brackish, but usable by the Hawaiians because they had become accustomed to the salinity. He further postulated that survival along the leeward coastline also depended on Hawaiians visiting small springs in the distant hills, and carrying water in gourds back to the coast.

In 1778, only months before the arrival of Captain James Cook and his discovery of the Sandwich Islands, a raid by Hawai'i chief Kalaniopu'u "ravaged the island of Lanai thoroughly" (Formander 1880:157). The battle between the forces of Kalaniopu'u and those of Maui chief Kahakili were concentrated along the north coast of Lāna'i. The Lāna'i chiefs, unable to oppose these forces, retreated into the upper recesses of Māimalei, where they were killed. The army of Kalaniopu'u destroyed food crops across the entire island and cut down and burned forests. Historian Samuel Kamakau (1992) reported the *atupū a o Ka'ohai* was the most severely damaged during this warfare.

John E. Dockall (Dockall et al. 2004) authored an archaeological assessment report for the Hi'i Flats region which straddles both Keālia Kōpa and Keālia Aupuni Ahupua'a. In this report, he cites both Handy et al. (1972) and Emory (1924a), stating that Lāna'i was known for widespread planting of sweet potatoes. In fact, the distribution of planted sweet potatoes followed the geographic distribution of settlements. Handy and colleagues also noted that the island had ample good land for growing sweet potatoes but that the most serious limitation was drinking water.

Dockall and others (2004) postulated that the main reason that taro agriculture on Lāna'i was so difficult was related to stream capability. The island had only two small stream systems that were capable of providing enough water for taro irrigation (Handy et al. 1972). Maximum elevations on the island also are a limiting factor in the amount of rainfall that occurs. This rainfall was traditionally suitable for sweet potato and later for pineapple but not for sustained irrigation and cultivation of taro as a significant portion of the diet. The authors also noted that there was apparently much breadfruit planted on Lāna'i but there are few direct indicators of the areas that were so planted. Kamakau (1992) stated that the *Pāi'āwai* or bottomlands were most suitable for the cultivation of sweet potatoes due to the richness of the soil.

This brief overview of legendary and traditional accounts indicates the particular importance attributed to the northern coast of Lāna'i during pre-contact Hawai'i. The accounts do not specifically state but do suggest that the productivity of the northwestern coastal area, in terms of fish resources, is the main reason for its desirability. The productivity of the ocean allowed direct access to fish protein for the *ali'i* (chiefly class) who resided at villages along the northwest coastal areas.

3.1.2 Mythological Accounts

3.1.2.1 The Story of the 'Ōhelo

The "Story of the 'Ōhelo", as translated from the original Hawaiian by Abraham Fornander (1919), describes the origin of the sacred offering of 'ūhelo to the goddess Pele, and the importance of Lāna'i Island in the telling of the story. According to Fornander, the many sisters of Pele followed her east from Tahiti across the Pacific Ocean. As Malulani, Kaohelo, Hi'i'aka, and Pele arrived at the Hawaiian Islands, Malulani choose Lāna'i to dwell on, while Pele, Kaohelo, and her younger sisters traveled on to the island of Hawai'i.

Kaohelo had a son named Kiha, who was given instructions by Kaohelo as she neared death where she should be buried. "Take my body to the very navel of your grandmother, right on top of Kīlauea; then bury me there." This her son did. The flesh of Kaohelo became the creeping vine and her bones became the bush-plant of the 'ūhelo. Her head was treasured by Pele as the smoldering fire of Kīlauea. The remainder of her body brought volcanic fire to Haleakalā on Maui, Keālia on Oahu, and also to Kaua'i.

When Malulani, living on Lāna'i, heard of the death of their youngest sister, she went to Hawai'i to retrieve her body, but found that small pieces of her body were strewn across the landscape sprouting into vines and bushes of the 'ūhelo. She gathered as much of her sister's remains as she could, but upon returning to Lāna'i, was surprised to find the pieces of Kaohelo's body had been strung as leis and worn as adornment. Saddened by this, Malulani died.

Hi'i'aka then came to Lāna'i to recover the body of Malulani, whereupon small bundles containing her remains were scattered across the island of Hawai'i, causing small hills and islets to remain to this day. In this way, the island of Lāna'i is part of the legend of how the 'ūhelo came to be spread across the islands of Hawai'i, and why the 'ūhelo is the special sacred offering to Pele (Fornander 1919, V, III:576-580)

3.1.2.2 A Lamentation for Young Kaahumanu

The place name Halulu, a *hezu* on the southwestern coast of Lanai, was said to have been used by Kamehameha I about 1810, after which he spent most of his remaining life on the island of Hawai'i. Based on the research of Fornander (1920:451), "A Lamentation for Young Kaahumanu," was a chant composed for the favorite queen of Kamehameha I at her death. She was eulogized as having a soul that flew as a bird. In this chant, performed by her bereaved husband, Kaunua'i'i, the soul of Ka'ahumanu was said to have a spirit guide to heaven in the form of Halulu: a fabled bird whose head feathers were said to have adorned noted idols, and who was supposed to have answered the prayers of faithful devotees by fluttering, or by rising and falling, in answer to the good or ill wishes of the prayers sent to him.

3.1.2.3 Fallen is the Chief (A Prophecy of the Overthrow of the Kingdom by Kamehameha)

In a chant composed to commemorate to uniting of all of the Hawaiian Islands under the rule of Kamehameha I, the fabled bird Halulu is again given a prominent part in the story. The feather of Halulu adorned the brow of Kaili, the god of war that Kamehameha was granted custody to by his father. Fornander (1920:381) noted that the chant described how Kamehameha worshipped Halulu, and that, "when the feather sprung up in the forehead of the idol, the people thought it

was a sign of ability to conquer; *ka māhā o Kamehameha*: that which fastens together, or holds together the islands."

3.1.2.4 The Ghosts of Lānaʻi

The northern coastal place name of Laewahie refers to the point on Lānaʻi where Kauliūāʻau built a signal fire to the people of Lāhaina. Fornander (1918:542) recorded the story of Kakaʻalaneo, the chief of all of West Maui. His son, Kauliūāʻau, grew up as a boy involved in great mischief. Because he uprooted the sacred breadfruit grove of Lāhaina, his father had no choice but to banish his son to the uninhabited island of Lānaʻi. At that time, Lānaʻi was the abode of ghosts, and Kauliūāʻau was sent there to be killed by them. Tabrah (1976) notes the many tricks the ghosts tried to use to murder Kauliūāʻau, and her account notes the location of the signal fire to the people of Lāhaina after he had defeated all of the ghosts of the island as Naha, located in the *atupuaʻa* of Kaohai. (The literal translation of Kaohai is "firebrand.") Kalikau (1888:212, 230) records the legend of Kauliūāʻau conquering the ghosts of Lānaʻi in two separate stories, one of which details his fight with the *Mōʻoaleo*, a lizard god of the island as the most difficult of the ghosts to overcome. He does not give the location of the signal fire used by Kauliūāʻau. (There is a village named Kauliūāʻau on the coast of Pāwīi Ahupuaʻa.) The legend ends with Kauliūāʻau being reunited with his father, mending his mischievous ways, and opening the island of Lānaʻi for settlement.

3.1.3 Early Historic Period

Lānaʻi was first seen by Captain James Cook during his voyage to the Sandwich Islands in January and February of 1779. The expedition had returned to the Hawaiian Islands in order to resupply following many months of mapping the west coast of America (Ellis 1969). William Ellis, Assistant Surgeon to the expedition, noted the first time that the ships *HMS Resolution* and *Discovery* sighted "Arani" (Lānaʻi) as the ships made their way past "Kaaowr vee [Kahoʻolawe] nearly adjoining to Mowʻwee" in 1779. It was during this voyage that Ellis went on to describe Lānaʻi as an island under the dominion of the king of Maui (Ellis 1969: Vol. 2, 187). The previous January, 1778, Kalaʻi and Niʻihau had been discovered and visited by Cook's expedition as the two ships had been making for the west coast of America from French Polynesia (Ellis 1969, Vol. 1: 167).

An account of a shipwreck on the northwestern reef of Lānaʻi in the late 1820's was detailed by an American Navy Lieutenant, Hiram Paulding, when his ship, the U.S.S. Dolphin, arrived to aid the survivors of the "Loudon", a ship out of New York. Paulding recorded that the chief of Lānaʻi was "encouraging the natives of the island to plunder the Loudon, which carried a large amount of specie and bullion." The account continued with the captain of the U.S.S. Dolphin, John Percival, chartering a vessel and saving the treasure with the intervention and aid of Boki, the governor of Oʻahu (Paulding 1831).

During the early and middle 1800s, the Hawaiian demography was affected by two dramatic factors: radical depopulation resulting from Western disease and nucleation around the developing port towns. The traditional Hawaiian population was largely dispersed and, although there were royal centers and areas of more concentrated population, these areas never came close to rivaling the populations of the historic port towns that developed on Hawaiʻi's shorelines

during the 1800s. In this regard, Kuykendall (1938:313) notes that in the period from 1830 to 1854:

The commercial development during this period, by magnifying the importance of a few ports, gave momentum and direction to a townward drift of population; the population of the kingdom as a whole was steadily going down, but the population of Honolulu, Lāhaina and Hilo was growing.

By the 1830's, Protestant missionaries sent to the Sandwich Islands from the east coast of America were reporting having established a thriving congregation on Lānaʻi. Letters written by missionaries to the American Board of Commissioners for Foreign Missions in 1830 listed 10 schools on Lānaʻi island attended by 506 students. Of these students, the missionaries reported that 206 could read, and 42 could write (Richards 1831).

On September 20th, 1845, Reverend Cochran Forbes left Lāhaina at sunrise for "Ranai in company with bro. Baldwin. Kaoluloo took us over in his boat. We had a very pleasant sail, until within some 3 miles of the landing when the fresh trades spattered us a little" (Forbes 1864). Forbes landed at Kaunolu, where he described a Protestant meeting house. Forbes and Reverend Dwight Baldwin preached to a congregation of about 125 persons, which grew to 180 for Sunday services. Monday morning the two missionaries went by canoe to Mānālei, "the place of the teacher Waimalu."

Forbes and Baldwin then hiked to the upper plateau. "After we had crossed the ridge the soil became better and vegetation more lively. There was an extensive piece of tableland there, perhaps 10 miles one way & 3 or 4 the other on which are very few stones. There we spent the night & met with the people, near 200 in all who had come together to hear & see the strangers." Forbes wrote, "Pali the Lumaauhaui, for the whole island resides at this place called Kihiamaniā. His influence is manifestly good. We found several pious people around him & himself a good man. He told us that his little children only sang eight years old had read the Bible through. He also gave us a list of all the men - the women & children in the island: the whole numbering 584 inhabitants. Most of the children are in school and very few of them who are 12 years old that cannot read" (Forbes 1864).

Forbes commented that the air was cool & invigorating at Kihiamaniā. "We spent the night there and early in the morning held another meeting with them, after which we left amid many greetings for the seaside at Kaohai. Pia's place. We travelled constantly only stopping once to hold meetings at the place of Kamalulu, who teaches a school and is Lumahanawai for the whole island." By dark, the two missionaries had reached Kaohai, "where Pia had the people of all that neighborhood assembled under some *koa* trees at his door." The two missionaries returned to Maui by whaleboat. "The surf rolls in so heavily at Kaohai that it was with difficulty we got out. I was expecting two or three times to be swamped, but the boat rode through every surf safely so that by the goodness of God we got safely to sea and reached Lāhaina safely before 12 o'clock" (Forbes 1864).

3.1.4 Mid- to late-1800s

The most significant change in land-use patterns and allocation came with The Great Māhele of 1848 and the privatization of land in Hawaiʻi. This action hastened the shift of the Hawaiian

economy from subsistence-based to market-based. During the Māhele, all of the lands in the Kingdom of Hawai'i were divided between *mō'i* (king), *ali'i* and *kono'ihiki* (overseer of an *ahupua'a*), and *maka āinana* (tenants of the land) and passed into the Western land tenure model of private ownership. On March 8, 1848, Kauikeouli (Kamehameha III) further divided his personal holdings into lands he would retain as private holdings and parcels he would give to the government. This act paved the way for government land sales to foreigners, and in 1850 the legislature granted resident aliens the right to acquire fee simple land rights (Moffat and Fitzpatrick 1995: 41-51).

Native Hawaiians who desired to claim the lands on which they resided were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The award was then required to pay in cash an amount equal to one-third of the total land value or to pay in unused land. Following this payment, a Royal Patent was issued that gave full title of ownership to the tenant. By 1850, the government of Hawai'i offered land for sale to both Native Hawaiians and foreigners. Such lands when purchased were referred to as Royal Patent Grants or as Land Grants.

Native land transactions within the Kamoku Ahupua'a were recorded soon after the terms of the Great Māhele became law. Five small Royal Patent Grants representing four LCA tracts were sold to native families, beginning in 1848. Land use terms such as whether portions of the lands included areas of pasture, types of crops cultivated, house lots, paths, roads, and appurtenant streams were mentioned in some of the Royal Patent Grants (Table 2).

One vast Royal Patent Grant (R. P. 5011) was issued in 1907 to Walter M. Giffard, within which the lands of Kama'o, Kalulu, Kamoku, Kaalia Paoma'i, Kaunoli, Mahana and Pāwili Ahupua'a, not subject to claim as Land Commission Awards, were transferred in fee simple. With specific reference to Kamoku Ahupua'a, the language of Land Patent 5011 mentions a number of landmarks within the inlets and bounds property description. The Ili o Lono Heiau is described as, "along [the boundary of] Kalulu to a cross cut in a stone amongst a lot of stones at the former site of an old Heiau called Ili Lono." A water hole within Kalulu Valley is named Katholena, and "an old house site is mentioned along the *ahupua'a* boundary with Paoma'i.

Table 2. LCAs within Kamoku Ahupua'a, with translations by Kēpa Maly (2009). Translations of Royal Patents by Kēpa Maly (2009). (Waihona 'Aina 2002).

Royal Patent Number	Land Commission Award Number	Claimant(s)	Award Type	Acreage
4800	10630	Pali, Na	Helu 10630, Pali, Kamoku, Native Testimony 13:259 Lanai, July 10, 1851. Poupou, Sworn. I know his Parcels of land in the Ahupua'a of Makaiiili, Kulelelua, Iwiolo and the 2 Aumoku on Lanai. They are	Helu 10630, Pali, Kamoku, Māhele award Book 7:222. One Parcel. Beginning at

Royal Patent Number	Land Commission Award Number	Claimant(s)	Award Type	Acreage
8429	10029	Oapolo	Translation by Maly (2009) Helu 10029, Oapolo, Mahana, Native Testimony 13:281-282 Kawaiki, Sworn. I know his Parcels of land at Mahana, Lanai. 2 Parcels of land. Parcel 1 is <i>Kalana hale</i> (house complex) and <i>mahina ai</i> (cultivated field) in the <i>ili</i> of <i>Kuahuā</i> . Parcel 2. 1. cultivated section of the <i>ili</i> of <i>Kuahuā</i> . Parcel 1 is thus. <i>Mauka</i> land of <i>kono'ihiki</i> , Maumalei, land of Kalawaia, Kaona and all about, land of <i>Kono'ihiki</i> . Parcel 2. The boundaries are thus. Mauka and all about, land of the <i>Kono'ihiki</i> . -	the western corner and running...112 Acres, 1 Road, 23 Rods. The boundaries are thus. <i>Mauka</i> , land of <i>Kono'ihiki</i> , Kamaiki, land of Kaauaeaina. <i>Makai</i> , land of <i>Kono'ihiki</i> , Kaena, Alanui (Road). He received his land from Mō Kekauluohi in the year 1839, and has resided there peaceably to this time. No one has objected, and he is the Overseer of these lands. Keawe, Sworn. All the words above are true. My knowledge is the same. Translation by Maly (2009) Helu 10029, Oapolo, Mahana, Native Testimony 13:281-282 Two Parcels. Parcel 1 has been abandoned because it was not cultivated. Parcel 2... 1 Road, 12 Rods.
6159	06833	Kaalia	Translation by Maly (2009) Helu 6833 Native Testimony 13:272-273 Pali, Sworn. I know his Parcels of land at Kalulu, Lanai. 3 Parcels of land in the <i>ili</i> below.	Helu 6833 Māhele Award Book 7:215.

Royal Patent Number	Land Commission Award Number	Claimant(s)	Award Type	Acreage
			<p>Parcel 1. 1 <i>moku manu</i> (grass/pasture section) of the <i>ili</i> of "Ahupau." Parcel 2. 1 <i>moku manu</i> in the <i>ili</i> of "Elialii." Parcel 3. House lot [illegible - in the <i>ili</i> of] Kamoku.</p> <p>Parcel 1. The boundaries are thus. <i>Mauka</i>, land of Kete. <i>Kamaiki</i>, <i>Ahupuaa</i> of "Kaomolu." <i>Makai</i>, land of Kaukapala. <i>Kaena</i>, <i>ili</i> land of Kamoku.</p> <p>Parcel 2. The boundaries are thus. <i>Mauka</i>, land of Maawe. <i>Kamaiki</i>, land of Konohiki. <i>Makai</i>, the same. <i>Kaena</i>, <i>ili</i> of Kapano.</p> <p>Parcel 3. The boundaries are thus. <i>Mauka</i> and all about, land of <i>Konohiki</i>.</p> <p>He received these parcels of land from his parents in the year 1840, and his parents received them from Daniela Li. He has resided there peaceably to this time. No one has objected.</p> <p><i>Kawraiki</i> Sworn. All the words are true. My knowledge is the same.</p> <p>Translation by Maly (2009) Certificate of the Boundaries of the Land of Kamoku Commencing at a pile of stones over a cross cut in a large stone on South side of Kaumalupau Harbor on edge of gulch. The Boundary runs: 1. North 86° 27' East true 3254 feet along Kalulu up South edge of gulch to a stone marked with a cross on edge of gulch a little above a branch that comes into the main gulch from the South. Thence 2. North 88° 46' East true 5225.9 feet along Kalulu up South edge of gulch to a cross cut in a stone on South edge of same. Thence 3. North 84° 40' East true 2594 feet along</p>	<p>Three Parcels. Parcel 1. There in the <i>ili</i> of Ahupau...6 Acres, 3 Roods, 10 Rods. Parcel 2. There in the <i>ili</i> of Elialii... 7 Acres, 3 Roods, 17.8 Rods. Parcel 3. There in the <i>ili</i> of Kamoku...5 Acres, 3 Roods, 2 Rods.</p> <p>8,291.09 acres</p>

Royal Patent Number	Land Commission Award Number	Claimant(s)	Award Type	Acreage
			<p>Kalulu to head of gulch. Thence 4. North 72° 43' East true 2080 feet along Kalulu to a cross cut in a stone amongst a lot of stones at the former site of an old Heiau called Ilio Lono. Thence 5. North 46° 19' East true 1041.4 feet along Kalulu up road to a point a little North of a cactus clump marked by two Triangular pits. 6. North 65° 44' East true 4939 feet along Kalulu along North edge of water to a red wood post on the North wall of the crater at a place called Pulehuoa, near Kealihanuanui's house. 7. Thence along Kalulu down across a small ravine (coming in from the North called Keakau) to Government road and up the Northwest edge of the Kapano valley, passing near Kawanahele's house [Page 470] to a point on ridge marked with four triangular pits and ditch thus [diamond with circle inside, with four points marked by small triangles with points toward diamond]; said point being a little East of Puunene and bearing North 44° 53' East true 8052 feet from above mentioned red wood post. Thence 8. North 45° 49' East true 1067.9 feet along Kalulu across valley passing to the Southeast of a water hole, called Kaiholena to a red wood post on ridge that comes down from the central mountain range. Thence 9. North 62° 37' West true 6742.5 feet along Paomai down above mentioned ridge and across valley on to a small ridge and down said ridge to a red wood post at end of same, 10. South 84° 37' West true 1316.8 feet along Paomai to a cross cut in a stone. 11. South 74° 8' West true 6258 feet along Paomai passing to the North of a couple of <i>Hala</i> clumps to two Triangular pit [sic/pits] at an old house site. 12. South 74° 51' West true 5045 feet along</p>	

Royal Patent Number	Land Commission Award Number	Claimant(s)	Award Type	Acreage
3029		Nahimani and Kelihue	Paomai to a cross cut on a stone at head of gulch. 13. North 86° 6' West true 1368 feet along Paomai down South side of gulch. 14. South 83° 45' West true 1455 feet along Paomai to a cross cut in a stone. 15. South 74° 9' West true 920 feet along Paomai. 16. North 55° 12' West true 898 feet along Paomai across gulch to a redwood post a little West of a cactus clump. (Here ends the Crown land of Paomai) Thence 74° South 65° 58' West true 1617 feet along Kaa down North side of gulch to a cross on a stone. 18. South 64° 57' West true 2040 feet along Kaa down North side of gulch to a cross on a stone. Thence 19° South 70° 33' West true 3590 feet along Kaa to a point 10 feet East of a large rock with cross cut on it. Thence 20° South 68° 33' West true 1664 feet along Kaa to sea shore. Thence 21° South 1° 55' West true 3460 feet along sea shore to point of Commencement Area 8291.09 Acres.	103.58 acres
5137	08556	Kaauwaeaina	Apana 2 - <i>ili</i> of Kaamalopau, within Kamoku, beginning at the northeast corner. North 52¼° West 415 links along the government land North 44° West 2144 links to Molohi's land South 32½° West 4664 links to Molohi's land South 43° East 2320 links along the government land North 29° East 2540 links to the <i>ili</i> of Puelo North 43¼° East 2200 links to the <i>ili</i> of Puelo 103.58 acres Excepting the <i>kaleana</i> of a native. September 12, 1866 Helu 8556, Kaauwaeaina, Maumalei, Kalulu and Kamoku. Native Register 6:468	Helu 8556 Kaauwaeaina

Royal Patent Number	Land Commission Award Number	Claimant(s)	Award Type	Acreage
			Lanaʻi Feb. 7, 1848. Greetings Commissioners who Quiet Land Titles. I have three <i>loi</i> (taro pond fields) at Maumalei. Here are other claims of mine, several <i>moku mauu</i> (grass land/ pasture sections) at Kalulu, and a <i>paniku</i> (planting section) at Puelo. By Kaauwaeaina. Helu 8556, Native Testimony 13:265. Kawaaiki, Sworn. I know this Parcels of land on Lanaʻi. They are in the <i>ili</i> and <i>Ahupuaa</i> below. 3 Parcels. Parcel 1. 3 <i>loi i kelo</i> (taro pond fields) in the <i>ili</i> of Ainaiki. Maumalei <i>Ahupuaa</i> . Parcel 2. 1 <i>moku mauu</i> (grass land/ pasture section) in the <i>iti</i> of Kapano uka. Kalulu <i>Ahupuaa</i> . Parcel 3. <i>Paniku</i> land in the <i>iti</i> of Puelo, Kamoku <i>Ahupuaa</i> . Parcel 1. The boundaries are thus. <i>Manuka</i> , my land. <i>Kaanaa</i> and all about, land of <i>Konoiki</i> . Parcel 2. The boundaries are thus. <i>Manuka</i> and all about, land of <i>Konoiki</i> . Parcel 3. The boundaries are thus. <i>Manuka</i> and all about, land of <i>Konoiki</i> . He received Parcel 1 from Kawaaiki in the year 1844. Parcel 2 from his parents in the time of Kamehameha II. Parcel 3 from his parents in the time of Kamehameha I. He has resided there peaceably to this time. No one has objected. I, Kaihiaromoku, Sworn. All the words above are correct. My understanding is exactly like that as spoken by Kawaaiki. Translation by Maʻy (2009).	Kalulu and Kamoku Māhele Award Book 7:212 There in the <i>Ahupuaa</i> of Kamoku, Lanaʻi. Parcel 2. There in the <i>ili</i> of Kapanouka... 1 Acre, 0 Roods, 35 Rods. Parcel 3. There in the <i>ili</i> of Puelo... 38 Acres, 2 Roods, 12 Rods.

There are four LCA in the immediate vicinity of the project area, they include LCA 3719 to Kaliahoa, LCA 6833 to Kaaii, LCA 8556 to Kaauwaeaina and LCA 10630 to the Noa Pali. These claims consisted of *moku manu* (grass lands or pastures), sweet potato plots and gourd fields. Pali was the *konohiki* of the area and his LCA extended into neighboring Kalulu and Kaunolu ahupua'a. Munro mentions the probable crops in these areas to have been taro, sweet potato and yams (Munro 2007: 47)

Walter Murray Gibson, arriving in Honolulu as a representative of the Mormon Church on the 4th of July 1861, came to the Sandwich Islands with the idea of converting islanders to that religion. Gibson learned of large tracts of land available for pasturage on the island of Lāna'i, and leased "Crown Lands" (lands reserved by the Royal Family of Hawaii during the Great Māhele of 1848) from King Kamehameha III for the raising of sheep and for other agricultural purposes. The authorities of the Mormon faith from Salt Lake, Utah, pressed Mr. Gibson to deed his property interests on Lāna'i to the Church. By 1864, W. M. Gibson was cut off from the Mormon Church for his refusal to comply, and much of his interest in real property involving the ahupua'a of Pālāwai, Keēlia Aupuni, Keēlia Kapu, Pawili, Lāna'o, Ka'ā, and Kaohai was inherited by his daughter, Talula Lucy Hayselden (Tabrah 1976).

The descendants of the family which had purchased the island of Pālāwai from the Kingdom of Hawaii in 1864, the Gay family, now set their sights on acquiring a majority of the property of the island of Lāna'i. In 1902, Charles Gay purchased the former Walter Murray Gibson estate lands at auction, and in 1903, bought out the Hayselden properties. He then purchased the ahupua'a lands of Ka'ā and Kaohai from the Crown Land Holdings of Princess Ruth Keelikolani. Charles Gay moved his family into the Gibson-built ranch house in Kō'ele, and made plans to purchase the eight remaining ahupua'a then still under government control. A legal battle and a three-year drought forced Charles Gay to sell all of his property on Lāna'i to a consortium of ranchers from Honolulu (Tabrah 1976). Ranching on the island was barely profitable. The Baldwin family, Maui's most famous ranchers, could not find a way to gain a profit from the island. In 1920, the Baldwin-owned Lanai Ranch Company brought 12 Asian chital deer (*Axis axis*) to Lāna'i from Mōloka'i, where good hunting ranges had been established for sportsmen (Graf and Nichols 1966). Despite these efforts, ranching was abandoned.

3.1.5 Early to Mid-1900s

Botanist J. M. Lydgate, visiting Lāna'i with an expedition to obtain rare specimens of trees and flowering plants, reported that 40 continuous years of livestock grazing had, "pretty well denuded [Lāna'i] of its forest cover, only on the summit of the island ridge was there a somewhat moth-eaten mantle of it left, and only on the slopes of the higher ravines and the steep hillsides was that mantle really intact and undisturbed" (Lydgate 1920). Lydgate also reported the extinction of plant species observed on Lāna'i only four years prior: plants that had been documented by fellow botanist Horace Mann of Harvard University. Lydgate (1920) commented that, "the ravages of cattle, sheep and goats, as well as forest diseases, hastened the decadence of the indigenous forest [of Lāna'i]."

The success of the Hawaiian Pineapple Company of Honolulu acquiring all of the lands of the Baldwin-owned Lanai Ranch Company began with the annexation of the Hawaiian Islands by the United States in 1898. With annexation came political stability for Hawaii. Worldwide food

prices were rising due to the outbreak of war between the United States and Spain over her colonies in Cuba, Puerto Rico and the Philippines. The pineapple industry on the island of O'ahu was bolstered by the sharp rise in demand for their food product, with corresponding expansion of canning facilities taking place at their Wai'anae Cannery. By 1904, the production and canning of Hawaiian pineapple had become "big business" (McClellan 1939), with the Hawaiian Pineapple Company of Honolulu in a leadership position.

By the time the United States entered World War I (1917), the pack of Hawaiian canned pineapple from all packers was about to reach an all-time high. The pack increased from 2.6 million cases in 1917 to 3.8 million cases in 1918 (Thrum 1920). The island of Lāna'i, however, continued to be eyed as prime ranch land, and not suitable for agriculture. In 1917, Henry Perrine Baldwin and his brother, Frank Fowler Baldwin, of the Maui-based Hawaiian Commercial & Sugar Company, acquired control of most of Lāna'i. Small ranch land tracts owned by the descendants of Charles Gay, and about 500 acres remaining under native titles, were held out of the sale to the Baldwins (Wentworth 1925).

In 1922, the Baldwins sold their holdings on Lāna'i island to the Hawaiian Pineapple Company (Figure 7) in order to finance a real estate transaction on the island of Maui (Maui County Council, Lāna'i Community Plan 1998:28). The construction of office buildings, warehouses, shops and dwellings for 250 workers and their families began immediately (Figure 8). By 1927, three thousand acres of the Pālāwai Basin had been planted in pineapple, the first construction phase to establish Lāna'i City had been finished (Figure 9), and a roadway linking the new piers at Kaunāliapa'u with Lāna'i City had been paved (Freeman 1927). The cultivation of pineapple on Lāna'i had become integral in Hawaii, supplying more than 90 percent of the world output of canned pineapple.

The dredging of Kaunāliapa'u Harbor and the construction of a breakwater was begun in 1924, after a large storm destroyed the wharf at Mānele Bay. Road construction to the new harbor was completed by the Hawaiian Pineapple Company, and transportation of the pineapple pack for 1925 was assured. Over the course of the next 20 years, five million dollars were invested in the company infrastructure, with annual packs in the late 1930's valued at over 1.4 million dollars. Peak harvest data for 1936 stated that as many as 100,000 crates containing more than 1,300,000 pineapples could be shipped out of Kaunāliapa'u Harbor in a 24-hour period (Stearns 1940).

In 1925, Bishop Museum Fellow of Yale University, Chester K. Wentworth, published "The Geology of Lanai" (Wentworth 1925). At the time of his study, he described construction projects by the Hawaiian Pineapple Company, including the erection of power plants and refrigeration plants. He referred his readers to Emory's work regarding cultural traditions of Lāna'i and made an interesting assumption regarding the flora of Lāna'i prior to European contact. Wentworth stated that, "the traditions of the natives and the presence of dry tree stems and roots in aeolian deposits over much of its area make it fairly certain that Lanai was wooded to the sea coast at the time when it was first visited by the Hawaiians" (Wentworth 1925:6).

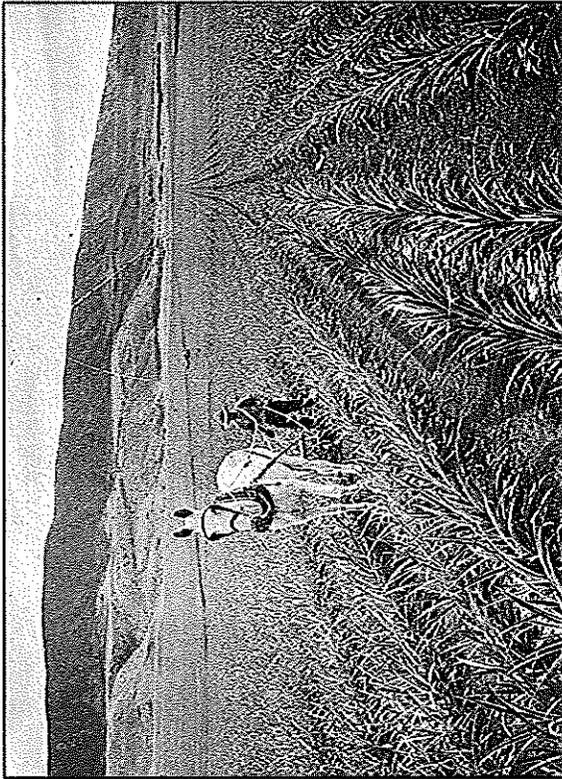


Figure 7. The plateau region of Lanai is visible in this early photo of pineapple cultivation on the island (*Paradise of the Pacific*, December 1936, Vol. 48, No. 12).

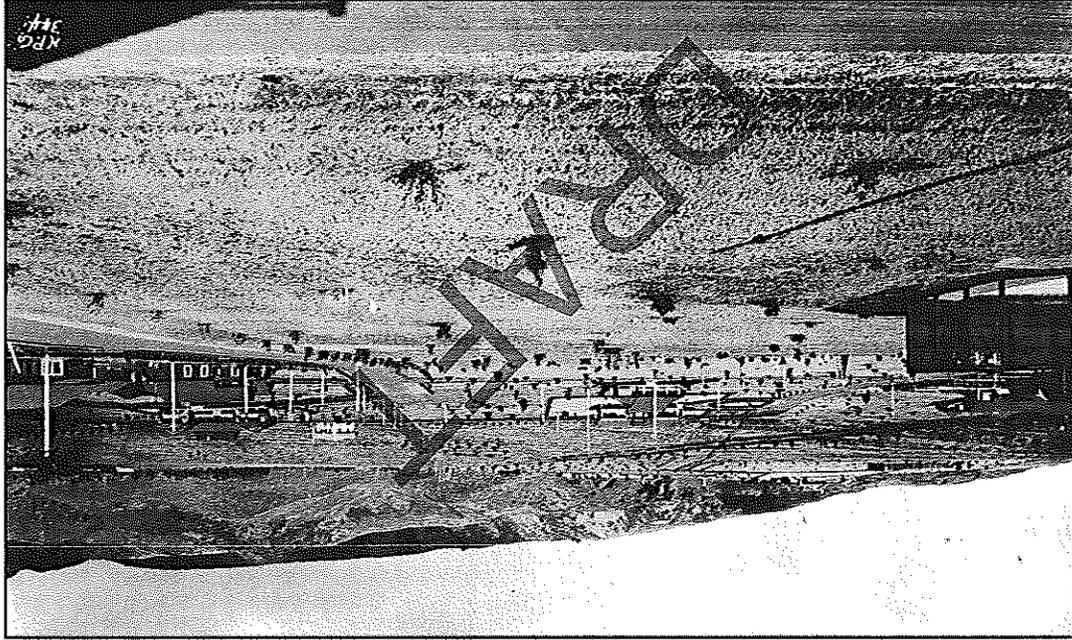


Figure 8. Dole Park circa 1923, following the acquisition of the island of Lanai by the Hawaiian Pineapple Company, and the subsequent construction of laborer and management housing. (Hawaiian Pineapple Company photo courtesy of Casile & Cooke Resorts LLC).

By 1939, the population of Lānaʻi was reported at four thousand, with virtually all of the residents working to maintain the fifteen thousand acres of pineapple fields. The expansion of the market to accommodate Hawaiian pineapples occurred so rapidly, with so much success, that new machinery was quickly developed to take advantage of the gentle topography of Lānaʻi (Maekie 1939). The long, flat fields could accommodate mechanical harvesters, which operated by straddling rows of pineapple plants, and moving slowly behind men who broke the ripe fruit off their stalks. Once aboard the harvester, pineapples had their crowns removed, were sorted for size, and crated. Pineapples picked in the morning on Lānaʻi, about sixty miles from Honolulu, were barged to Honolulu, crated and ready for shipment by nightfall the same day (McClellan 1939).

3.1.5.1 Water Source Development

Harold T. Stearns traversed the island of Lānaʻi between June and August of 1936, conducting studies of the geology and ground-water resources. He was assisted by personnel from the U.S. Geological Survey, completing hydrographic maps for the study. His work highlighted the explorations for ground water in Maunalei and at Kōʻēle, to improve sources of drinking water, and for irrigation of the expanding fields of pineapple cultivated on the island (Stearns 1940). He reported that the westernmost slopes of the Palāwai Basin of Lānaʻi [are] not sheltered by other islands on the southerly side, [and] kōfua storms are unobstructed. Heavy downpours during a single kona [southern exposure] storm commonly account for a considerable part of the annual rainfall, and in some of the arid sections a single rain storm a single rain may contribute as much as 80 percent of the annual total (Stearns 1940:65).

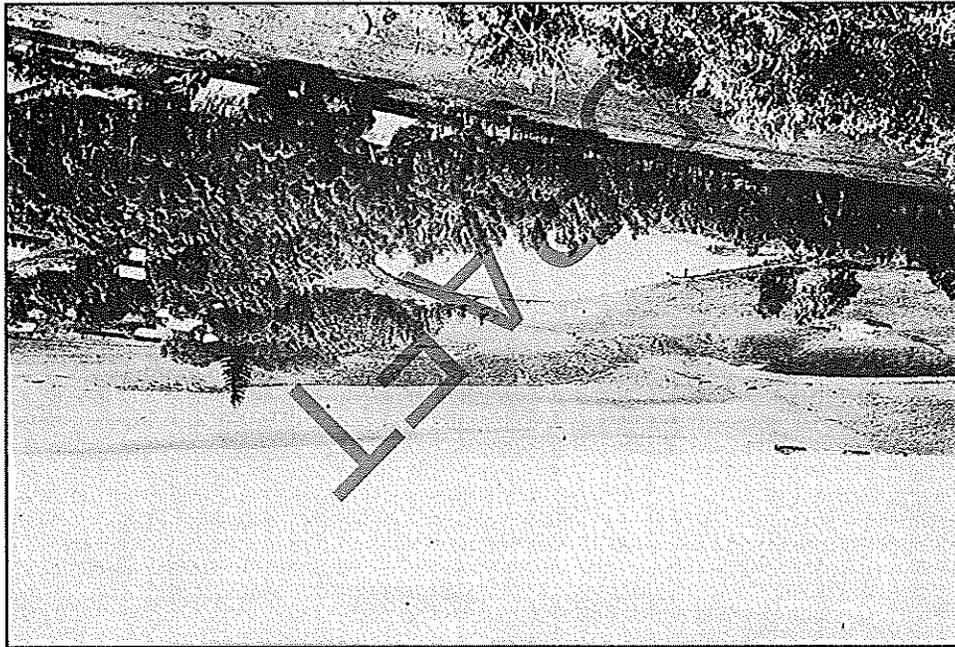
3.1.6 Mid-1900's

Following the end of World War II, the agricultural population of Lānaʻi continued to work for wages comparably lower than those earned by sugar workers on the other islands. When restrictions against organized unions were lifted in 1945, sugar workers and dock workers were the first to unionize. By 1946, the International Longshoremen and Warehouse Union (I.L.W.U.) had consolidated its hold on workers who grew, harvested, milled, transported, warehoused and refined Hawaiian sugar. For the 3,200 people on Lānaʻi, labor relations with the Hawaiian Pineapple Company were about to heat up (Henderson 1949).

Between 1947 and 1951, pineapple workers in Hawaiʻi tried but were unable to demand wages and benefits comparable to sugar workers. An industry-wide strike among all pineapple companies was called by the I.L.W.U. in 1947, resulting in minimum wage concessions that raised pay from 35 cents an hour to 97 cents an hour for men. Comparable sugar wages in 1948 were \$1.77 per hour for men, and this disparity continued until pineapple workers on Lānaʻi staged a strike that lasted for seven months in 1951, finally winning higher wages and benefits on par with sugar workers. In 1954, the Hawaiʻi I.L.W.U. fought for and was awarded the first pension plan for agricultural workers in the United States. Throughout the 1950's, other labor concessions awarded to pineapple workers included the 40-hour work week, medical benefits, provisions for sick leave, and paid vacations and holidays (Labor 2009).

The three buildings currently located within the project area and are slated for demolition, were originally constructed by HAPCO in 1965. These three buildings were built as part of a

Figure 9. A photograph of the outskirts of the city of Lānaʻi, with a reservoir visible in the foreground, a lone Cook Island pine in the forested portion of the city, and hundreds of acres of land cleared for pineapple cultivation (Wentworth 1925).



subsidiary called Plantation Housing, Ltd. as a part of nine dormitories in the area (Solamillo et al. 2009).

3.1.7 Modern Land Use

By 1961, James D. Dole's pineapple lands on the island of Lāna'i were merged with the assets of Castle & Cooke Inc., a prominent Hawai'i-based corporation. World-wide prices for pineapple continued to drop throughout the 1970's as competing countries, most notably Cuba and the Philippines, supplied the market with cheaper pineapple.

In 1975, library books, ancient Hawaiian artifacts, and valuable historical archives of Lāna'i were transferred to a newly-constructed air-conditioned library building on the campus of Lāna'i High School. The building at the corner of Fraser and Seventh became the Lāna'i City Senior Center (Kaser 1975).

During the 1980's, Castle & Cooke began a long-term program to phase the island out of pineapple cultivation, and expand tourism on Lāna'i. In 1988, David Murdoch, chairman of Castle & Cooke, Inc., opened a resort hotel and companion championship golf course at Mānele Bay. A second resort hotel and golf course in the uplands of Kō'ele was opened in 1990. The present continuing construction of additional residential and luxury housing projects has created additional jobs for the people of Lāna'i, however, the current statewide downturn in the economy has boosted the unemployment rate for the island past 8% (Labor 2009).

Section 4 Archaeological Research

Archaeological studies that have dealt with larger regions of Lāna'i, but with specific mention of historic properties and features within Kamoku Ahupua'a, include those by Emory (1924a, 1924b), Hornmon (1972, 1974), and Hammatt and Borthwick (1989a).

Late in 1920, Kenneth P. Emory completed a detailed series of excavations within the crater of Haleakalā on Maui (Emory 1921), where he had examined the construction of stone terraces and platforms for clues as to their cultural use. Continuing this work for the Bishop Museum on Lāna'i, Emory (1924a) documented Hawaiian pre-contact ceremonial platform (*heiau*) features, as well as pre-contact dwelling and village sites. Many of the abandoned pre-contact village complexes Emory recorded on Lāna'i also included small ceremonial altar (*ko'a*) structures, burial areas, trail markers (*aha*), petroglyph incised pictograms of boulders, and, in some cases, relic wooden timbers from the ancient framework of their habitation structures (Emory 1921). In all, Emory's work recorded 59 house sites within the *ahupua'a* of Kamoku (Emory 1924a: 50).

In the upland plateau, northwest of the present project area, Emory (1924a:51) described two separate consolidated groups of visible house sites that appeared to constitute large upland dryland settlement areas east of Kānepe'u. Set against the ridge line of Kaka'alani that rises some one thousand feet in elevation as it leaves the region of Kō'ele, and ending at Kānepe'u, this dryland plateau included the village sites of an east-to-west order) Kukuikahi, Kalapu'u, and Keonehe'ehe'e. Emory recorded 38 visible house sites, spread out over three miles along this ridge line. With ample evidence of habitation in the upland region, Emory estimated that the region of the Kā'a plateau supported at least 500 inhabitants (Emory 1921:27). Hearths, ovens, activity scatters and outlying temporary habitations in the lower elevations of the northwestern portion of Lāna'i, between the shoreline settlements and the upland dryland region, indicated to Emory the former existence of trails linking the upland settlements to the ocean resources below.

Archaeological studies specific to Kamoku Ahupua'a in the region of Lāna'i City includes Borthwick and Hammatt (1992), and Hammatt and Borthwick (1988, 1993). In 1988, on the eastern side of Lāna'i City, Hammatt and Borthwick conducted an assessment of the Lālikoa III Subdivision to determine the nature of a surface scatter of lithic artifacts. Finished adze fragments and four adze preforms found here were attributed to an off-site gravel quarry from which the material had originated. Most archaeological studies in the vicinity of Lāna'i City have identified no significant traditional Hawaiian cultural materials or deposits.

Table 3 lists all previous archaeological investigations performed in the upper region of Kamoku Ahupua'a. A synopsis of each investigation, including the number of habitation sites found (if any), follows the table. Figure 10. Archaeological investigations conducted in the region of Lāna'i City, graphically illustrates the boundaries of the study areas.

Table 3. Archaeological investigations in the upland region of Kamoku Ahupua'a

Investigator(s) and Year	Location	Study Type
Emory 1924	Island-Wide	General Survey
Hommon 1972	Island-Wide	General Survey
Hommon 1974	Island-Wide	General Survey
Hammatt <i>et al.</i> 1988	Ranching Areas of Kō'ele	Inventory Survey and Data Recovery
Hammatt and Borthwick 1988	Lālikoa Subdivision, Kamoku Ahupua'a, Lāna'i City	Archaeological Assessment
Hammatt and Borthwick 1989a	Waialua Multi-Family Housing, Lāna'i City	Reconnaissance Survey
Hammatt and Borthwick 1989b	Kō'ele Golf Course, Housing and Subdivision	Reconnaissance Survey
Borthwick and Hammatt 1992	Kō'ele Reservoir	Inventory Survey
Hammatt and Borthwick 1993	Waste Water Treatment Project at Kamoku	Inventory Survey
Hammatt 1996	Paonia'i	Inventory Survey
Tuggle 1997	Northwestern uplands, including portions of the Paonia'i and Ka'ū Ahupua'a	Inventory Survey
Creed, Hammatt and Hammatt 2000	50-Acre parcel at the northwest corner of Lāna'i City	Inventory Survey
Hammatt and Shideler 2004	Niniwai Hill	Inventory Survey
Lee-Greig and Hammatt 2007	The Courts Affordable Housing, Lāna'i City	Field Inspection
Solamillo, Liverman and Kastner 2009	Lāna'i City Business-Country-Town Historic District	Architectural Inventory Survey

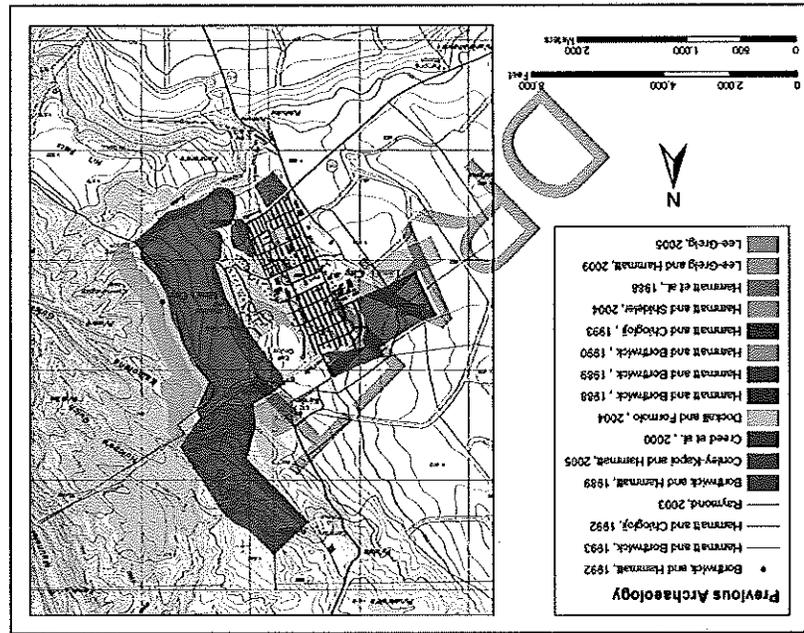


Figure 10. Archaeological investigations conducted in the region of Lāna'i City.

4.1 Summaries of Archaeological Studies in the Region of Lāna'i City

Although Emory's most comprehensive archaeological work on the island of Lāna'i pertained to coastal settlements at Kapiha'a and Kaunolu, his investigations of deserted village sites in the uplands of the island are noteworthy because he described burial areas associated with habitation areas. He described a flexed burial exposed by a landslide at an area just north of Kō'ele, and he described ancient house sites just south of Kō'ele.

Emory (1924a) conducted his landmark island-wide survey of Lāna'i between July 1921 and January 1922. He observed pre-contact house sites and burial sites in the Kukuikahi area, just north of Kō'ele in Paoma'i, and wrote, "I counted 27 house sites... and at Pohoula is a stone faced terrace 22 x 59 feet, 4 feet high, having 4 walled divisions probably for as many houses. The hill above has been used as a burial ground" (Emory 1924b:26).

Another specific reference to habitation sites in the upper plateau is given by Emory (1921) in his field notes for September 1921, as he tried to answer the question as to where the natives of the north coast lived when they ascended the plateau:

Along the bluffs which bound the plateau on the mauka side [in Ka'ā Ahupua'a], I counted 31 house sites as I came home. Here, certainly, is where the natives lived. Allowing for 20 more house sites marked with stone divisions, and 50 grass houses at least which had used a perishable wooden fence, and allowing 5 natives to a house, this sheltered spot could have and probably did hold a population in ancient times of 500 (Emory 1921:27)

Other types of historic properties and features observed by Emory across the upper plateau, the northwestern transitional zone, and the northwestern coastal regions (excluding Maunalei and Kaunolu) include oven pits at Kānepe'u ridge in Paoma'i (Emory 1924a:45); a well at Honopū in Ka'ā (Emory 1924a:47); remnant wooden frames of thatched houses at Kanaele in Paoma'i (Emory 1924a:50); the largest (55 x 152 feet) *heiau* structure on Lāna'i at Ka'ena Iki in Ka'ā (Emory 1924a:64); a fishing shrine (*ko'a*) at Honua'ula in Paoma'i (Emory 1924a:68); Maluhie *heiau* at Keonehe'e in Ka'ā (Emory 1924a:69); a small *heiau* at Hao in Mahana (Emory 1924a:69); a complex of habitation platforms, enclosures, and shelters and a ceremonial platform at Kalae'hole, in Ka'ā (Emory 1924a:69); a fishing shrine (*ko'a*) at Pōhaku'oa, and a *ko'a* in Kūhūa, in Mahana; both coastal shrines built among house sites (Emory 1924a:71); one *ko'a* in Kūkui and four in Kahue in Paoma'i, as well as *ko'a* structures at Cape Kae'a and at Ka'ena in Ka'ā (Emory 1924a:71); a *ko'a* at 'Oanapuka on the coast of Kamoku (Emory 1924a:72); stone markers (*āhu*) at Keahikawelo ridge in Ka'ā (Emory 1924a:72); upright stone slab alignments at Hale o Lono in Paoma'i (Emory 1924a:72); burials in Kuahua Valley in Mahana (Emory 1924a:73); burials in the sand dunes of Awalua in Paoma'i (Emory 1924a:73); burials at Pohoula hill, near the summit, in Paoma'i (Emory 1924a:73); a cave at Keone gulch in Kamoku, along the coast of the present project area *ahupua'a* (Emory 1924a:88); lava tube caves at Honopū (Emory 1924a:88); petroglyphs at Ka'ena in Ka'ā (Emory 1924a:103); and petroglyphs at Kaumālapa'u Bay in Kamoku, within the present project area *ahupua'a* (Emory 1924a:103).

The identification of culturally significant sites across the central plateau of Lāna'i was also undertaken by other scientists working on the island at approximately the same time as Emory.

Chester K. Wentworth, a Yale University Fellow at the B.P. Bishop Museum, published the first scientific geologic study of the island in 1924 (B.P. Bishop Museum Bulletin 24), and supplied information with additional information while performing his surveys of the island (Wentworth 1925). Ornithologist George C. Munro (1920), and botanist J. M. Lydgate (1919-1921) had both performed surveys on Lāna'i and both provided further cultural background information to Emory.

It was Emory's exemplary research on pre-contact occupation of the Mānele District of Lāna'i that best showed how permanent habitation occurred along the coastline of the island. While an examination of the archaeological landscape of the Palāwai Basin underscores the importance of the uplands as a focus of agriculture and habitation, Hawaiian traditions and the presence of hundreds of house sites at Kaunolu were evidence that the coastal environs were also a focus of settlement and marine exploitation.

In all, Emory (1924a) recorded 489 house sites across Lāna'i. Of eleven large *heiau* structures found on the island, one (Pu'u Makani) is located in the upper plateau region. Of the ten smaller *heiau* structures listed by Emory, two are in the upper plateau region. Maluhie *heiau*, in Keonehe'e, and north of Koa, below the trail that leads from the Palāwai Basin onto the mountain bench at Kaoha'i is an unnamed 30 by 45 foot terrace. Of the 18 intact fishing shrines (*ko'a*) of Lāna'i, one is located in the project area *ahupua'a*, at Kaumālapa'u. This shrine included an adjacent house platform and two fireplaces. Smaller cairn structures were recorded by Emory in Mahana, along the area traveled by those crossing the plateau from the north coast (Emory (1924a:72) described stones marking places of religious or magical observances on the upper plateau.

On the great boulders [sic] along the Keahikawelo ridge many small monuments of three or four stones, one on top of the other, have been erected by natives traveling up and down, to insure good fortune on their way. I am reminded of similar monuments which were set up along the trail at Ke-ahu-o-ka-holo in Haleakala to keep the fog from enveloping the travelers and causing them to lose their way. But the *āhu* at Keahikawelo represent the *ka'akae* offerings of Kawelo.

In addition to these historic properties, Emory recorded a large number of artifacts. Some were isolated finds, some were associated with scatters. Petroglyph sites recorded in the project area *ahupua'a* included rock faces at Kaumālapa'u.

Robert Hommon and Kenneth Emory (1972) made recommendations for the preservation of archaeologically-sensitive regions of Lāna'i. They identified Lāna'i City as an area where future residential subdivision might endanger historic properties or ruins not previously located. Their recommendations for archaeological studies included the areas of Mānele Gulch and Mānele Bay.

Robert Hommon (1974) conducted a survey of historic properties on Lāna'i using Bishop Museum staff members. Hommon attempted to reacquire 262 of Emory's sites located outside of the Kaunolu work area, and documented a small number of previously unrecorded sites in the northwestern upland and coastal areas. Hommon observed that most of the coastal sites had

successfully remained intact in the 50 years since the Emory's survey had been performed, and termed the state of preservation "unmatched elsewhere in similar Hawaiian sites."

Although Hommon's most significant finds during this survey occur outside of the present project area, they are relevant because they represent the use of a north-south travel route across the upper plateau. In addition, Hommon recorded complete habitation complexes along the southwest shoreline, including SIHP 50-40-98-202, a complex at Kaluako'i, SIHP 50-40-98-166, the "Pāhawai Complex", which included an enclosure described as "probably a *ko'a* [fishing shrine] and walls "used as a temporary shelter for fishermen" and SIHP 50-40-98-086, the "Kapiha'a Complex." In discussing significance, Robert Hommon noted that the Kaluako'i sites "constitute the most densely concentrated group of well built terraced platforms yet found on Lāna'i." He continued his assessment by stating, "if all of these features were used as foundations for houses, and if they were all used at the same time, the cluster constitutes one of the densest habitation complexes in the Hawaiian Islands" (Hommon 1974).

Four investigations by Hallett Hammatt and Douglas Borthwick within the Lāna'i City development region and within the former ranching areas of Kō'ele are noteworthy, and are described below.

In 1988, Hallett H. Hammatt, Douglas Borthwick, David Shidelek and Kirstie Nakamura conducted a subsurface data recovery of two trash pits within the 20-acre construction site of the present-day "Four Seasons Lodge at Kō'ele" hotel. This upland spot had been the private home of a number of prominent Lāna'i families, and the recovery of historic artifacts from the trash pits added greatly to the understanding of the lives of early ranching families.

Hallett H. Hammatt and Douglas Borthwick performed an archaeological assessment of the Lālikōa III Subdivision within Kāpōkū Ahupua'a (Hammatt and Borthwick 1988) and recorded a scatter of basalt and volcanic glass. The investigation recorded numerous coarse-grained basalt fragments, which were interpreted as industrial-grade modern gravel. Many fine-grained basalt flakes and basalt artifacts (including a finished adze fragment, eight adze performs, a basalt core, and thirteen retouched flakes) were collected, and were determined to have originated at the Kō'i Adze Quarry in the Pāhawai Ahupua'a. Both the modern gravel and the pre-contact artifacts had been transported together from the quarry site by modern equipment.

Hallett H. Hammatt and Douglas Borthwick (1989a) performed a reconnaissance survey of the former Waialua multi-family housing subdivision (currently known as the Iwi'ole Dormitories) in 1989, and recorded a sparse scatter of flaked basalt lithic material. Due to modern agricultural cultivation, the context of this scatter of cultural material was determined to have been highly disturbed.

Also in 1989, Hallett H. Hammatt and Douglas Borthwick (1989b) performed reconnaissance surveys for four separate projects, including the Kō'ele golf course, the Kō'ele single-family housing, the Queen's multi-family housing and the Olopuua Woods Subdivision. During the survey of the golf course project area, four historic features were recorded. Three were associated with the water system and debris from a ranching-era homestead, and the fourth was an unrelated concentration of pre-contact lithic material. The remaining other three surveys produced a very small amount of additional pre-contact lithic material that was found to have originated (again) from the nearby modern rock quarry.

The Kuahua complex of platforms, terraces and rock shelters was first described by Emory (Site 207 at Kuahua Gulch) in 1924, and had not been relocated by Hommon in 1974. Additionally, Tomamari-Tuggle (1992) noted that an area of the valley of Kuahua reported by Emory (1924b:14) to have contained the disorganized remains of approximately twenty flexed burials, was not relocated by this survey.

In 1993, Douglas F. Borthwick and Hallett H. Hammatt conducted an archaeological inventory survey for an approximately 13,000 foot-long waste water pipeline connecting the Lāna'i sewage treatment plant with the Kō'ele golf course irrigation system. This survey did not locate any traditional cultural deposits or structures, but did augment knowledge of the Lāna'i City/ Kāpōkū Ahupua'a development region.

In 1996, Hallett H. Hammatt conducted an archaeological inventory survey of a 14.9-acre parcel in the *ahupua'a* of Paoma'i, along the Malau ridge above the area developed as the "Four Seasons Lodge at Kō'ele" hotel. SIHP 50-40-98-1598, a pre-contact rectangular habitation enclosure, was recorded, and the positions of other associated *grāde* terraces and rock piles were mapped.

In 1997, David Tuggle performed an archaeological inventory survey of five locations within the rural districts of Kā'a and Paoma'i Ahupua'a, during which he identified five historic properties. The five properties were assigned SIHP numbers: SIHP -1941 was located just west of the Kā'ena/Polihua roadway fork, and consisted of a 40m long alignment of cobbles and boulders. SIHP -1942 was located along the western side of Lapaiki Road, in the *ahupua'a* of Paoma'i adjacent to the boundary of Kā'a, and consisted of three separate scatters of cultural material, including basalt flakes, marine shell and *grāde* fragments, and a few worked artifacts. Also included in this site were specimens of fire-cracked rock and an exposed horizon of charcoal and burned soil. SIHP -1943 was located proximate to SIHP -1942, and included an intact hummock, which displayed a hearth-like area with fire-cracked rock scatters. SIHP -1944 was located proximate to the previous two sites, and included an additional scatter of fire-cracked rock, and an exposed hearth. SIHP -1945 was located on a ridge at the edge of a low bluff, at a location named Kā'upu-a-Ke by Emory (1924). Here, the property was a large boulder outcrop against which a terrace of faced, upright stones (slab-shaped cobbles) was constructed. Based on its unusual method of construction, the terrace was interpreted by David Tuggle as probably ceremonial.

In 2000, an archaeological inventory survey was conducted at a 50-acre parcel belonging to the Department of Hawaiian Home Lands at the northwest corner of Lāna'i City. The investigation by Victoria S. Creed, Jared Hammatt and Hallett H. Hammatt found that the project area had been previously cultivated in pineapple, and no cultural material was observed.

In 2004, Hallett H. Hammatt and David W. Shideler performed an archaeological inventory survey of the Kihāmānien Church (SIHP 50-40-98-1946) and an associated churchyard complex at Nininiwai Hill (SIHP 50-40-98-1947). Both historic properties are within the region of Lāna'i City, in Kāpōkū Ahupua'a. The investigation focused on the surface markings that appeared to denote the positions and relationships of some eighteen historic burials within the churchyard, as well as features associated with the early historic occupation of the Kō'ele area, including an irrigation feature and a small section of a stone-lined trail.

In 2007, Tanya Lee-Greig and Hallett H. Hammatt conducted sub-surface testing on property slated for affordable apartment housing during an archaeological field inspection in Lānaʻi City, Kamoku Ahupuaʻa. This investigation was conducted to determine the extent of historic-era cultural material from the earliest days of commercial pineapple cultivation. No cultural structures or deposits were observed during this inspection.

In 2009, Stanley Solamillo, Astrid Liverman, Ph.D. and Katie Kastner conducted an architectural survey of structures in Lānaʻi City for evaluation and inclusion in the Lānaʻi City "Business Country Town" (BCT) historic district. A number of buildings were determined as eligible for nomination to both National and Hawaiʻi State Registers of Historic Places. The study determined that the existing Senior Center building was "non-contributing," and the Planning Department of Maui County determined that mitigation at Historic American Building Survey (HABS) Level II was an appropriate action.

Section 5 Community Consultations

Cultural Surveys Hawaii, Inc. contacted the following individuals and Hawaiian organizations requesting their *kāhau* and guidance regarding knowledge of traditional cultural practices and cultural resources of the study area. The following table represents all community consultations conducted with *kamaʻāina*, Hawaiian cultural advisors and Hawaiian organizations. Individuals who expressed personal knowledge of the study area and gave their consent to share their *manaʻo* for this study, both formally and informally, are presented in Table 4. Formal letters of response to the scoping letter sent out by CSH have been appended to this study as Appendix B

Table 4. Community Contacts

Name	Affiliation	Contacted ¹	Personal Knowledge (Y/N/S)	Comments
Ms. Pearl Ah Ho	OHA & DHHL - Lānaʻi Representative	Y	Y	Suggested we speak with Mr. Kepa Maly and possibly Mr. Sol Kahio ʻohalahala.
Ms. Phyllis "Cocoehie" Cayan	DLNR-State Historic Preservation Division, History and Culture Branch Chief (Former Lānaʻi resident)	Y	S	CSH sent letter of inquiry. Mrs. Cayan suggested contacting Mr. Kepa Maly and utilizing the research he has compiled. Ms. Maritua Evans, Ms. Pus Paoa, Mr. Albert Morita, Auntie Irene Perry, Mr. Sol Kaupuki, Ms. Alberta Morita Deletley, as well as Kāpuna at the Senior Center.
Mrs. Maggie Masticampo	Lānaʻi Senior Center Manager	Y	S	Mrs. Masticampo referred CSH to numerous contacts. She says she is very glad that the new health center facilities are being built.
Mrs. Alberta Morita Deletley	Commercial Farmer/Editor/Owner of <i>Lanaʻi Today</i>	Y	Y	Says she is in full support of the project. See 6.1.1 below.

¹ Key:

- Y= Yes
- N= No
- A= Attempted (at least 3 attempts were made to contact individual, with no response)
- S= Some knowledge of project area
- DC= Declined to comment
- DP= Declined to participate
- U= Unable to contact, i.e., no phone or forwarding address, phone number unknown

In 2007, Tanya Lee-Greig and Hallett H. Hammatt conducted sub-surface testing on property slated for affordable apartment housing during an archaeological field inspection in Lānaʻi City, Kamoku Ahupuaʻa. This investigation was conducted to determine the extent of historic-era cultural material from the earliest days of commercial pineapple cultivation. No cultural structures or deposits were observed during this inspection.

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Ms. Pearl Ah Ho	OHA & DHHL - Lānaʻi Representative	Y	Y	Suggested we speak with Mr. Kepa Maly and possibly Mr. Sol Kahio ʻohalahala.
Ms. Phyllis "Cocoehie" Cayan	DLNR-State Historic Preservation Division, History and Culture Branch Chief (Former Lānaʻi resident)	Y	S	CSH sent letter of inquiry. Mrs. Cayan suggested contacting Mr. Kepa Maly and utilizing the research he has compiled. Ms. Maritua Evans, Ms. Pus Paoa, Mr. Albert Morita, Auntie Irene Perry, Mr. Sol Kaupuki, Ms. Alberta Morita Deletley, as well as Kāpuna at the Senior Center.
Mrs. Maggie Masticampo	Lānaʻi Senior Center Manager	Y	S	Mrs. Masticampo referred CSH to numerous contacts. She says she is very glad that the new health center facilities are being built.
Mrs. Alberta Morita Deletley	Commercial Farmer/Editor/Owner of <i>Lanaʻi Today</i>	Y	Y	Says she is in full support of the project. See 6.1.1 below.

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- S= Some knowledge of project area
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- U= Unable to contact, i.e., no phone or forwarding address, phone number unknown

Name	Affiliation	Contacted	Personal Knowledge (Y/N/S)	Comments
Mrs. Martha Evans	Lanians for Sensible Growth	Y	Y	CSH sent letter of inquiry. Says she is in full support of the project. Mrs. Evans shared her recollections about the area, see 6.1.2. below.
Mrs. Sagar (Minami) Gima	Kama'iina	Y	N	CSH sent letter of inquiry. Ms. Gima says she has no problems with this project going through.
Mr. Reynolds "Butch" Gima	Kama'iina, mother's family run the Minami Gardens in the 1930's located at the site of the I'ina'i High and Elementary School across from the Senior Center.	Y	S	CSH sent letter of inquiry. Mr. Gima says he has no problems with this project going through.
Mr. Robert Hera	Held several positions with Dole Company over thirty-plus year career, including the title of superintendent.	Y	Y	CSH sent letter of inquiry. See 6.1.3 below.
Aunty Lei Kamipae	Kupuna	A	A	CSH sent letter of inquiry.
Mr. Sol Kaopuiki	Kupuna	A	Y	CSH sent letter of inquiry.
Mrs. Mona Kapaku	Department of Hawaiian Home Lands - Maui District Supervisor	Y	N	CSH mailed letter of inquiry. Ms. Kapaku had no concerns regarding cultural impacts. Referrals were made to Uncle Sol Kaho'ohalahala and Ms. Pearl Ah Ho. Also referred us to Stuart Matuaga - Project Manager for I'ina'i DHEL, - who has done research for developing Hawaiian Homes in the area.
Mr. Kepa Maly	I'ina'i Hawaiian Civic Club Executive Director, I'ina'i Culture and Heritage Center	Y	Y	CSH sent letter of inquiry. Mr. Maly mailed letter of inquiry. Mr. Maly says that CSH has information from past CIAs in the area. He warns to that it is always possible to encounter artifacts even in developed areas. Mr. Maly says the health center will greatly benefit the

Name	Affiliation	Contacted	Personal Knowledge (Y/N/S)	Comments
Ms. Nicole McMullen	Bailey House Museum/Maui Historical Society Director	Y	N	community. CSH mailed a letter of inquiry. Ms. McMullen suggests we speak to Mr. Kepa Maly.
Mr. Shigeto Minami	Kupuna	Y	N	CSH sent a letter of inquiry. Mr. Molitau referred us to Aunty Lei Kamipae.
Mr. Kaponeai Molitau	Hawaiian cultural practitioner trained in <i>paie, oli, ioina</i> Hawaii, and <i>'ike</i> Hawaii, as well as a <i>kumu hula</i> .	Y	Y	See 6.1.4 below. CSH mailed letter of inquiry.
Mr. Albert Morita	Kupuna, Retired DLNR, Division of Forestry and Wildlife	Y	Y	CSH sent letter of inquiry. Ms. Morrison referred us to Mr. Kiope Raymond who was the Chairperson of the West Maui Projects Review Committee.
Ms. Theo Morrison	Lahaina Restoration Foundation- Executive Director	Y	Y	CSH sent letter of inquiry. OHA recommended that CSH contact Mr. Kepa Maly, Ms. Nani Watanabe, Ms. Pearl Ah Ho, Mr. Sol Kaho'ohalahala and Mrs. Martha Evans. See 6.1.5. CSH sent letter of inquiry.
Mr. Clyde Numa'o	OHA-Administrator, Native Hawaiian Historic Preservation Council	Y	S	CSH sent letter of inquiry. OHA recommended that CSH contact Mr. Kepa Maly, Ms. Nani Watanabe, Ms. Pearl Ah Ho, Mr. Sol Kaho'ohalahala and Mrs. Martha Evans. See 6.1.5. CSH sent letter of inquiry.
Mr. Gary Onuma	Kupuna, Castle & Cooke/Cook's Manager, Kaho'i'ina Kupuna	Y	Y	CSH sent letter of inquiry. In the MLIBC meeting, Ms. Paoa had no comment on the project. See 6.1.6 below.
Mr. Noboru "Squeaky" Oyama	Maui I'ina'i Islands Burial Co. I'ina'i Island Representative	Y	S	CSH sent a letter of inquiry. Mr. Raymond said that the LRF does not wish to comment on this project.
Ms. Pua Paoa	Maui I'ina'i Islands Burial Co. I'ina'i Island Representative	Y	S	CSH sent a letter of inquiry. Mr. Raymond said that the LRF does not wish to comment on this project.
Aunty Irene Perry	Kupuna	Y	Y	See 6.1.6 below.
Mr. Kiope Raymond	Member of the Board of the Lahaina Restoration Foundation and Chairperson of the West Maui Projects Review Committee	Y	N	CSH sent a letter of inquiry. Mr. Raymond said that the LRF does not wish to comment on this project.
Ms. Sandra Repa	Hui Malama Pono O I'ina'i	A	-	CSH sent letter of inquiry.
Mr. Glenn Richardson	Former member, Maui/I'ina'i Islands Burial	A	-	CSH sent letter of inquiry. Letter was returned.

Name	Affiliation	Contacted	Personal Knowledge (Y/N/S)	Comments
Ms. Diana Shaw	Council, Lānaʻi Island Representative, <i>Kama ʻĀina</i>			
Mr. Stan Solamillo	Lānaʻi Community Health Center Director Maui County Cultural Resources Commission	Y	Y	See 6.1.7 below. CSH sent a letter of inquiry. Mr. Solamillo suggested that we could speak with Mr. Kepa Maly.
Mrs. Maori Suzuki	<i>Kama ʻĀina</i> , Mrs. Suzuki is the daughter of Auntie Irene Perry.	A	-	CSH sent letter of inquiry.
Mrs. Nani Wazumabe	<i>Kama ʻĀina</i>	A	-	CSH sent letter of inquiry but it was returned.
Mrs. Jackie Woosley	Hui Malama O Lānaʻi	Y	Y	CSH sent letter of inquiry. Ms. Woosley had no comment other than to say that she is glad that the new facilities will be built.

Section 6 Summaries of Kama ʻĀina Interviews

Information presented in this study was shared during previous consultation regarding the Kamoku *athupua ʻa*. Because the Kamoku *athupua ʻa* has been researched extensively and to avoid exhausting the community, CSH conferred with *kāpuna* and *kama ʻāina* who supported CSH and the use of information previously shared to be related to the proposed Lānaʻi Community Health Center project area. This information was incorporated with any specific comments about the Lānaʻi Community Health Center project.

6.1 Ms. Alberta (Morita) de Jetley

Ms. Alberta Morita de Jetley's family moved to Lānaʻi in 1951 when her father became the island's game warden with the Territory of Hawaii. After graduating from Lānaʻi High School, she moved to Oahu before moving to Hana, Maui in 1968. She lived in Hana until 1996 but returned to Lanai from 1980 to 1984 when she acquired the lease of Hotel Lanai and from 1986 to 1990 when she wrote a monthly newsletter for Castle and Cooke. In 1996, she returned to Lanai to live permanently. Ms. de Jetley is the owner of Benne's Farm, an 18-acre farm near Lanai Airport. Ms. de Jetley is also the Publisher and Editor of *Lanai Today*, a monthly newspaper for the Lānaʻi community.

Mrs. de Jetley's concerns are focused largely on the future of Lānaʻi's economy, sustainability and overall viability as a community. Mrs. de Jetley runs the community paper because she thinks it is a critical part of supporting small business and the community interests on Lānaʻi. She feels she has a vested interest in the well being and economy of Lānaʻi, and wants to see the island do well. She believes that stopping growth on Lānaʻi will have a negative effect on the community's future and feels that the community needs to be 'pro-business' if it wants to have a viable economy. She states, 'we should be working on ways to promote the community.'

Mrs. de Jetley is aware of the state hunting lands located *makaʻi* of Lānaʻi City but does not consider this type of hunting a traditional Hawaiian activity. She further explains that Axis deer were introduced to Lānaʻi in 1923 while Mouflon sheep and game birds were introduced in the 1950's and 1960's.

6.2 Mrs. Martha Evans

Mrs. Martha Evans is the Vice Principal of Lānaʻi High and Elementary School. She has been a resident of Lānaʻi since the 1970's when she moved there to work as a teacher. A person of Hawaiian ancestry, Mrs. Evans is also a member of the grass roots organization, Lanaians for Sensible Growth, as well as the Chair of the Lānaʻi Archaeology Committee. Mrs. Evans submitted her *mana ʻo* via e-mail on March 15, 2009. Mrs. Evans recalled stories regarding night marchers when she first started her teaching job. She stated that the night marcher trail began above Lanai Avenue, went through the yard at the *manaka* corner of Lanai St. and Sixth St., then continued along through the Lānaʻi High and Elementary School property, and passed by the last cottage of the teacher lodging. Mrs. Evans also remembers there being a culturally significant *poʻhaku* or stone outside of the last cottage, but she cannot recall its significance.

6.3 Mr. Robert Hera

Mr. Robert Hera moved to Lāna'i with his family from Kona in 1936. His family had been working on the coffee farms. They came to Lāna'i on the S.S. Humuula, a steam freight ship. Both he and his parents worked for Dole Company upon arrival in Lāna'i. Throughout his thirty-year career with Dole, Mr. Hera held a variety of positions outside of actual pineapple field work, they included positions in agriculture and engineering, water systems and utilities departments. In addition to the utilities maintenance, Mr. Hera helped with the general upkeep of the city, eventually becoming a superintendent with the company.

Mr. Hera explained that the Lāna'i Community Health Center project area has been developed for as long as he can remember. He does not think that the expansion will impact any cultural activities.

Mr. Hera spoke of the teachers cottages, located near the adjacent school property, and described how pilots during WWII used to fly over and drop letters for the teachers. He said he also used to entertain at the teacher cottages, playing Hawaiian music. He spoke of an airstrip that was once in the area. It was destroyed; trenches were dug through the airstrip after Pearl Harbor was bombed to avoid the possibility of enemy planes landing there. Sikorsky aircraft used to land there as well.

Mr. Hera's sentiment is that the new facilities for the health center, will benefit the community of Lāna'i.

6.4 Mr. Albert Morita

Mr. Albert Morita is *kama'āina* of Lāna'i, a retired Department of Land and Natural Resources (DLNR), Division of Conservation and Resources Enforcement (DOCARE) officer and currently sits on the board of directors for the Lāna'i Culture and Heritage Center (LCHC). His familiarity with the study area comes from growing up on Lāna'i and working in the field for 30 years as a DOCARE officer.

Mr. Morita explained that the project area has been in pineapple cultivation as long as he can remember. He explains that as a child, stone artifacts were often found during the plowing of the pineapple fields. He remembers mainly *ulu maika*, and fire pits (*imz*), and therefore believes there is a likelihood that these things may be uncovered during grading and grubbing for the school expansion.

The lower elevations west of the city, from the sea cliffs (*pali*) to the edge of the pineapple fields were territorial hunting grounds since the 50's and remain today under the State DLNR as hunting grounds. These lands were used as ranchlands before hunting. In addition, Hunting Unit 3 has been included in the hunting area. One can hunt large game; axis deer, dall sheep, and bird game; turkey, pheasant, gray Franklin, chucker, and doves (lace necked and barred) in this area.

Regarding more traditional practices, Mr. Morita recalls individuals collecting verberna (*ka'uwāwā*) to make a poultice for bruises on themselves or their horses, in lands on the outskirts of town. He also recalls individuals harvesting *'uhaloa (Waltheria indica)*, which grows wild in the same areas, for its medicinal purposes.

Mr. Morita draws attention to the area of Hōkūhau. He explains that according to Robert Hobdeys map in the book titled "The Story of Lāna'i" by George C. Munro, this area is located east of the project area. Its meaning is Morning Star. Mr. Morita suggested researching this area more thoroughly due to its proximity to the project area. He also suggested Kenneth P. Emory's work. Mr. Morita comments on the above mentioned map and book noting their accuracy and intimate knowledge of Lāna'i and is grateful this family got together to write it. It is a very important historical document.

6.5 Mr. Gary Onuma

Mr. Gary Onuma worked as a Game Manager for Castle & Cooke and grew up near the project area, therefore, he is intimately familiar with the area. As a child Mr. Onuma recalls finding stone artifacts, but explains that the area has been heavily cultivated since the 1930's and archaeological feature remnants would be scarce today. He notes that because this project site is part of the center of town, it has already been disturbed and the health center construction can cause no damage to any traditional practices. He also explains that there is a hunting area just below town, where axis deer can be found. He explains that some axis deer live in the proposed project area and will be displaced by construction, but insists that axis deer find new habitat easily. Mr. Onuma mentions the sewage treatment plant nearby and states that it may be a cause of bad odor.

6.6 Auntie Irene (Cockett) Perry

Auntie Irene Perry was born in Keōmoku in 1917. Her father was Robert Cockett from Maui. Auntie Irene said that she lived on Maui briefly before returning to Keōmoku. Sometime around 1928 her family moved up to Kō'ele and her father worked for the ranch. They lived in a house next to the main ranch house. She spent her childhood playing, fishing and traveling via horseback to her *tutu's* (Ke'i'ikaunani's) home at Palawai Basin.

As a child living in Keōmoku, Auntie Irene used to ride on horseback up to Lāna'i City. From Keōmoku, she explained, they traveled up through Lāna'i'hale to get to Kō'ele, "all over and through the mountain and down." Auntie Irene describes growing up at Keōmoku, fishing and preparing dried fish, turbot and *he'e*. They remember carrying these dried snacks as well as *kālua* pig to school in their shirt pocket.

Auntie Irene attended school at Kō'ele. Driving around Kō'ele, Auntie Irene pointed to the hill where the original school was located. She also pointed to the location of the old slaughter house and a pasture that was utilized for grazing after the company gave up pineapple.

When asked what her knowledge regarding the high occurrence of Hawaiian stone artifacts said to have been found during plowing of the pineapple fields was, she said she was aware of all the stone artifacts but did not know exactly how the area was utilized by Hawaiians in traditional times.

6.7 Ms. Diana Shaw

Ms. Diana Shaw is the Director of the Lāna'i Community Health Center. She shared her reasons regarding the need of the proposed new health center and how it will benefit the community. Ms. Shaw states that the current health center facilities are located *manuka* and uphill

of Lāna'i City at 478 Lauhala Place, making it difficult for seniors and anyone without a car to walk here. Additionally, Ms. Shaw spoke of the small size of the current building which is currently 900 square feet, and can accommodate only 14 patients per day, with space for only one provider per day.

Ms. Shaw explained that the Lāna'i Community Health Center serves the Lāna'i population which is 200% below the poverty level. She further explains that the majority of their patients are the *kāpuna*. Ms. Shaw says that the new proposed location will be much easier for patients to access. The proposed new location is on flat ground and adjacent to the Lāna'i Senior Center, the Lāna'i Art Center, and the Lāna'i High & Elementary School. This location would make access easier for all patients and provide optimum space to accommodate more individuals. Ms. Shaw also notes that some of the Lāna'i Community Health Center facilities will be used for Lāna'i Art Center activities. These will include art classes for children, and may one day be used to provide art therapy services to patients. Ms. Shaw believes that the proposed new facilities will bring a much needed improvement and will greatly benefit the community of Lāna'i.

Section 7 Traditional Cultural Practices

The identification of traditional cultural practices for a cultural impact assessment takes into account, past, current and potential future cultural practices. Traditional cultural practices include those practices of any ethnic group who has influenced the culture of the study area and include subsistence hunting practices as well as traditional Hawaiian cultural practices. Traditional cultural practices are identified by community members through the consultation process.

7.1 Gathering for Plant Resources

7.1.1 Medicinal Plant Gathering

Gathering of plant resources in the upland portion of the study area consists of the collection of *ha'uāwī* (*Verbena litoralis*) and *'uhala* (*Waltheria indica*). The leaves, stems and roots of *'uhala* were grinded and strained and made to gargle to soothe the sore throat (Abbott 1992: 101). Mr. Montia recalls *ha'uāwī* being used as a poultice for bruises on individuals and horses. He remembers individuals collecting these medicinal plants from around Lāna'i City, in areas of fallow pineapple fields (Dagan *et al* 2009c).

7.1.2 Subsistence Plant Gathering

Mr. Yamato (Dagan *et al* 2009c) explains that he used to hike into the forest *mauka* of Lāna'i City to collect *pepetao akua*, commonly referred to as *pepetao* (*Auricularia auricula*), a tree fungus that both Mr. Yamato and Mr. Oyama agreed is excellent in chop suey. Mr. Yamato said it often grew on *kukui* nut trees (*Aleurites moluccana*). Mr. Yamato also explained that *pepetao*, when dried, could be stored for years and freshens up nicely by soaking in water when ready to use. Mr. Yamato said that he continued to collect *pepetao* until about ten years ago (Dagan *et al* 2009c).

Mr. Yamato also describes traveling *mauka* to collect bamboo shoots. He said that he continued to collect bamboo shoots about once a year until a fence was recently constructed blocking his access. Quava (*Psidium guajava*) and *Lilikoi* or passion fruit (*Passiflora edulis*) are two other fruits that Mr. Yamato, Mr. Oyama, Aunty Irene Perry and several of the ladies at the senior center remember collecting (Dagan *et al* 2009c).

7.1.3 Gathering *Maile*

Aunty Irene also recalled collecting *maile* (*Alyxia oliviformis*) from the mountains. It is unclear where exactly where she went to gather this plant or for what purpose. *Maile* has been known to be utilized as a decorative lei in *hula*.

7.2 Trails and Traditional Access Routes

No traditional Hawaiian trails within the present study area were mentioned during the consultation process. However, several individuals consulted described accessing the upland areas *mauka* of Lāna'i City for recreation and to gather edible foods such as *liliko'i*, quava, bamboo shoots and *pepetao*. It is unclear as to what routes they utilized; however, it was noted that one access point had recently been fenced and access blocked (Dagan *et al* 2009c).

7.3 Traditional Hawaiian Stone Tool and Craft Manufacture

Native Hawaiians utilized *pohaku*, stones of various qualities, for a variety of purposes. The *ulu maika* stone was designed as a sort of bowling disk used to play a game called *Maika*. *Maika* was a common traditional game played during the *Makahiki* season, the time of peace. To play this game, two stakes would be set in the ground about six inches apart. The player would then stand a distance from the stakes, further being more challenging, and attempt to roll the *ulu maika* between the stakes. Slingstones or *pohaku ma'a* were used as a weapon in warfare, hunting, and also as sport.

Throughout the consultation process, it was revealed that Hawaiian stone artifacts including *ulu maika*, *pohaku ma'a* and *imu* stones (fire pit stones) have been discovered and are known to be a common occurrence in the pineapple fields surrounding the city and throughout formerly cultivated areas on Lāna'i. Mr. Kapa Maly, in a written statement regarding Hawaiian habitation of this upland area, said, "Kamoku was noted for its upland forest and springs, with areas which the Hawaiians developed into an extensive forested dry land agricultural system, in Kō'ele, Kaihola and Nīmīwai region" (June 4, 2009 Maui County Cultural Resource Commission meeting). Although several individuals had found stone artifacts and surmised that Hawaiians had clearly left these items behind, few consulted were familiar with more detailed knowledge concerning Hawaiian habitation of these areas (Dagan *et al* 2009c).

Mr. Albert Morita spoke of finding *ulu maika* and *imu*. There is a possibility of uncovering traditional stone tools during ground altering activities for the new health center. Mrs. Sandra Ropa recalls finding Hawaiian stone artifacts in the pineapple fields as a child and vividly remembers not being allowed to bring them into the house. Mr. Takeo Yamato also said that he found *ulu maika* in the pineapple fields and Mr. Oyama confirmed that *ulu maika* were everywhere (Dagan *et al* 2009c).

7.4 Fresh Water Resources

As mentioned above, Mr. Maly has stated: "Kamoku was noted for its upland forest and springs, with areas which the Hawaiians developed into an extensive forested dry land agricultural system, in Kō'ele, Kaihola and Nīmīwai region" (Dagan *et al* 2009c). The mention of freshwater "springs" in these areas prompted further research of these resources. The place names of Nīmīwai, meaning pouring water (Emory, 1924; 31) and Kaihola, the name of the gulch, associated spring and the *iholewa* variety of banana (Emory 1924; 31), speaks to the known and relative lushness of these upland areas, Kaihola being the location of one of the principal springs on the island (Emory 1924; 47).

In his book, *The Story of Lāna'i*, Mr. George C. Munro, the manager of the Lanai Ranch from 1911 to 1930, recalls a large boulder that had been modified to collect water located at Kō'ele. Several holes measuring three inches wide and three inches deep had been made in the surface of this boulder (Munro 2007: 126). This boulder and its whereabouts were not mentioned by any individuals consulted. It was also said that Mr. Frederick Hayselden (Walter Murray Gibson's son-in-law in charge of the ranch in the late 1800's) built eight to ten cement lined cisterns whose purpose was to catch water that dripped off the roofs of buildings at Kō'ele (Munro 2007: 128).

Mr. Munro also described a reservoir dug by Mr. Hayselden as being located behind the ranch manager's house. This reservoir caught storm water from the Kaihola Gulch and was used to water livestock. This same reservoir exists today as a pond at what is now the Lodge at Kōele, a Four Seasons Resort. In an April 2009 article in *The Lāna'i Times*, Aunty Irene Perry speaks of the days when she lived at Kō'ele in a house next to the main ranch managers house. Mr. Kenne Williams, the author of the article, explains that this same pond was the source of Aunty Irene's drinking water. Aunty Irene is quoted as saying, "Sometimes when it would rain, the pond would overflow and run down the hill" (Lāna'i Times, Williams 2009:10). This statement substantiates that this historic reservoir did, in fact, catch storm waters and shows that it was utilized for the same purpose many years after it was built. Aunty Irene recalls getting supplies of water from Maui as well, carried over on the sampan that the Kaoupuiki family ran between the islands (Dagan *et al* 2009c).

This reservoir was also dry for a time. Mrs. Nani Watanabe (CCRC) recalls playing in it as a child in the 1940's and explains that it was dry (Dagan *et al* 2009c). In a 1988 archaeological study, it was also described as being dry (Hammatt *et al* 1988: 5). It is known that Kaihola stream was an intermittent stream and did not flow year-round, but it is unknown if other activities had caused the stream to flow elsewhere or to not flow at all during the times when the reservoir was dry.

Another reservoir described by Mr. Munro was located at the lower end of Kaihola Gulch and is described as stone-lined, with the capacity to hold 400,000 gallons (Munro 2007:128). It is said that water from up the valley was piped into this reservoir. In addition, Mr. Munro describes a pump and waterline installed to pump water from Maumalei Gulch into Kaihola reservoir (Munro 2007: 129). At a June 4, 2009 CCRC meeting, Mr. Steve Bumar made mention of a reservoir located behind the 17th hole at the golf course, the Experience at Kōele (Dagan *et al* 2009c). Descriptions from these two sources, coupled with research of historic and modern day photos, suggests these are the same reservoir, although it is unknown if any remnant of this reservoir exists today.

Fresh water resources also include brackish wells located in the coastal area at Kaumālapa'u. Mrs. Sandra Ropa recalls her grandparents' home and describes a garden that they grew that could tolerate the brackish water available there (Dagan *et al* 2009c). Mr. George Munro also describes brackish wells located at Kaumālapa'u. He noted that these ancient Hawaiian wells were shallow and sealed on the seaward side by a mixture of mud and straw in an effort to minimize salt water seepage. One of these wells was located in Kaumālapa'u Gulch. Mr. Munro describes the water in this well as being ten feet below the surface (Munro 2007: 125).

7.5 Agricultural Practices

Mr. Munro begins his chapter on agriculture with the following passage:

Hawaiians are believed to have first colonized Lāna'i about the year 1400. Their first cultivations would likely be along the shore of the east side and in taro patches in Maunalei Gulch. The shore areas got very little rainfall, but water from the mountains soaked them during the wet season. These lowlands and taro patches would not be injured by such work, as yearly freshets bring rich soil from

the mountains and deposit it on these lands. They may have found later that the extensive uplands on the west side had more rainfall but were not subject to flooding from freshets. The soil rich with the deposits of centuries from the forest that had covered it, was light enough to be easily handled with their primitive tools. As the population increased, therefore, they took up cultivation in that area (Munro 2007: 47).

The few mid-nineteenth century Land Commission Award (LCA) claims for lands within Kamoku Ahupua'a near the current project area may reflect the long-term effects of Kalani'ōpu'u's raid on Lāna'i in 1778. It is said that Kalani'ōpu'u's raid was so thorough that virtually all of Lāna'i's inhabitants were killed. His forces then raided their crops leaving nothing left to eat but the famine food of *kupala* (Kamakau 1992: 09-91). Mr. Munro goes on to explain that by killing all who farmed the western uplands, and raiding all the crops, the soils were left exposed. With no one to reestablish cultivation, these soils were blown away, thus leaving portions of the island denuded of its topsoil (Munro 2007: 47).

The four Kamoku LCA grants made at the time of the *Māhala* include LCA 3719 to Kalaihoa, LCA 6833 to Kaaiia, LCA 8556 to Kaauweaina and LCA 0630 to the Noa Pali. These claims consisted of *moku mauu* (grass lands or pastures), sweet potato plots and gourd fields. Pali was the *konohiki* of the area and his LCA extended into neighboring Kalulu and Kaurolu ahupua'a. Munro mentions the probable crops in these areas to have been taro, sweet potato and yams (Munro 2007: 47).

Mr. Maly also described the area as having been utilized by Hawaiians in traditional times for dry-land agriculture as well as forest resources. Today, stone artifacts such as *utu maika*, sling stones and various lithic tools, have been found over the years despite intense cultivation of the pineapple fields.

Historic research and community consultation found that historic gardening practices also occurred adjacent to the proposed health center's location, at the present-day high and elementary school location. Not only did individual families typically have their own gardens, but a truck garden called Minami Gardens was located at the school site before the school was moved from its Kō'ele location. Mr. Jusaku Minami ran the family garden which may have extended from Fraser Avenue to where the county park is today. Mr. Minami worked at the garden after hours as he maintained a day job with the pineapple company where he worked as a *huna* for a *wahine* gang. His mother, Nami, as well as one other individual worked in the garden full-time. They grew Japanese potatoes or *araimo*, carrots lettuce, cabbage, bananas and *won bok* (Dagan et al 2009c).

Minami Gardens supplied Lāna'i City with supplemental produce. Family members including daughter, Mrs. Susan Miyamoto and son Mr. Shigeto Minami, would accompany their father in an old car through the camp to sell their produce. Mr. Shigeto Minami recalls ringing a bell to let people know they were there. He explains that most families had their own smaller gardens, but that they provided vegetables to the camp stores and to the single men who had traveled from abroad to work in the pineapple plantation. It is believed that the garden operated at the current school location from about 1924, when the Minamis moved to Lāna'i, until about 1937. Mr. Shigeto Minami explained that when plans were made to move the school from Kō'ele to the

garden location, their garden was moved about a mile away, by the Protestant church (Dagan et al 2009c).

The Minami family lived behind the current Senior Center, in one of the original plantation homes. When asked, Minami family members and *kāpuna* describe the landscape surrounding Lāna'i City as being uncultivated. They explained that the pineapple fields began considerably further *makai* in the 1920's, and that the school location and the ball park located west of it was Minami Gardens (Dagan et al 2009c).

7.6 Hunting Practices and Deer Habitat

Previous research documented in the study *Cultural Impact Assessment for the Lāna'i High and Elementary School Expansion Project, Kamoku Ahupua'a, Lāhaina District, Lāna'i Island [TM5C (2) 4-9-002: 058 (por.) and TM5C (2) 4-9-014: 002]* (Dagan et al 2009b) found that the Health Center is approximately two miles southeast and east of the State of Hawai'i Hunting Units 1 and 3 (public hunting areas). The game mammals and game birds that populate these areas include axis deer, mouflon sheep, *kolohala* or the Chinese ring-necked pheasant, wild turkeys, gray francolin, gambles quail, erekel francolin and doves.

Lāna'i residents, as well as other residents of the state, hunt as a subsistence practice. And this practice has become a strong tradition in some communities. While many Lānaians might agree that hunting is a strong tradition on Lāna'i and individuals such as Mrs. Sandra Ropa explained that food supplied from hunting deer was a significant part of their diet. Mrs. Alberta de Jetley notes, however, that sport hunting is not a traditional Hawaiian practice, but rather an introduced recreational sport (Dagan et al 2009c).

Kamā'aina contacted during consultation for the school expansion explained that the state leases these lands from Castle & Cooke and that sport hunting activities has continued since the 1950's. It is believed that these public hunting areas are the most popular game mammal hunting areas in the state contributing significantly to the Lāna'i lifestyle and economy.

Contacts consulted said that a small population of axis deer have made their home in the fallow pineapple fields west of the city (Dagan et al 2009b). Axis deer populations will not be affected by the construction of the new Health Center facilities.

7.7 Honoring the Kāpuna

The proposed Lāna'i Community Health Center is directly adjacent to the Lāna'i Senior Center. The Senior Center is a place where many of the *kāpuna* on Lāna'i congregate daily. They come here to socialize, talk story with friends, have lunch, watch T.V. and relax. For those who cannot travel on their own, a Maui Economic Opportunity (MEO) bus shuttles them from their homes to the Senior Center and back each day. For seniors who cannot make the trip, Mrs. Masticampo and Mrs. Alboro deliver hot lunches to them at their homes each day.

The Lāna'i Senior Center acts as a multi-purpose center and individuals consulted refer to the Senior Center as the community Town Hall. Here a variety of classes may take place, from hula and ukulele lessons to hunter education classes. Often times these classes are free of charge. The Senior Center is the most popular location to book for celebrations such as birthdays, reunions,

graduation parties and wedding receptions. Nearly all business and community meetings take place at the Senior Center.

It was found in the cultural impact assessment for the Lānaʻi Senior Center (Dagan *et al* 2009c) that the Senior Center plays a vital role in the community on Lānaʻi. Mrs. de Jexley said that the community enjoys the warm and homey atmosphere of the Senior Center. Mr. Onuma explained that the Senior Center is heavily utilized by the community as a place where the seniors have lunch, socialize and attend classes and referred to the Senior Center as their "town hall", a place where families throw parties, and groups hold community meetings. Mr. Herra also mentioned that he utilized the Senior Center when teaching hunters education classes. He said the Senior Center serves the community in many ways that reach beyond the actual Senior Center services. Mr. Oyama stated that the Senior Center is constantly being used by different organizations and that there is a real need for a new and bigger center. Mrs. Roppa feels that the proposed new Senior Center is currently the most important project in Lānaʻi City. It was further explained by Mr. Maly and Mr. Hokama that the population on Lānaʻi is ageing and that the seniors depend on the services the Senior Center provide and are in need of additional services (Dagan *et al* 2009c).

The Senior Center which provides services to seniors, and acts as a town hall to the community, also houses the most cherished cultural resource, the *kipuna* themselves. Traditionally, elders of most cultures are honored and cared for. Being the individuals who have given life to all others and for their knowledge and their experience, *kipuna* at the Lānaʻi Senior Center are highly respected and well cared for. The reverence and care given the *kipuna* form a distinct cultural focal point in this community. As stated by Mr. Hutaff of the Maui County Cultural Resource Commissioner, the *kipuna* are the cultural resource. He explains that the community must see to it that they are properly cared for and that their needs are met (Dagan *et al* 2009c).

One of the biggest needs of the *kipuna* is healthcare. This makes the Lānaʻi Community Health Center an important asset to the community of Lānaʻi. Many of the *kipuna* contacted for this cultural impact assessment stated that they themselves used the health center on a regular basis. However, a large number of the *kipuna* also said that it was very difficult for them to reach the current health center facilities because of the location. The current location of the health center is *mauka* of town and can only be accessed by going uphill. This makes access difficult for elderly patients and patients without a car. The proposed location for the new health center facilities would be on flat ground and adjacent to the Senior Center and the Lānaʻi Art Center. This proposed location is intended to make access easier for all patients. In addition, the proposed Lanai Community Health Center would serve more patients on a daily basis by providing the necessary space for additional healthcare providers.

Section 8 Summary and Recommendations

The story of Kauliūʻau is the story of how Lānaʻi was freed from spirits and made habitable for humans. Lānaʻi remains as unique as the stories of its beginnings. Historically Lānaʻi was an island with resources that would support only a small population. The most extensive *loʻi* systems were located in Maunalei Gulch, the only perennial stream on the island on the northeast, while the uplands of the study area were utilized for their forest resources and seasonal cultivation of dryland crops. As described in the historic literature, Lānaʻi has a connection to Maui and Lanaians have traditionally been the subject of the Maui chiefs. But a devastating raid by Hawaiʻi island chief, Kalamī ʻŌpuʻu, would be the catalyst for critical environmental and social changes on Lānaʻi. The war of Kamokūit was said to have left its scar on this island in the form of denuded soils and barren lands. From the time of the Kamokūit raid in 1778 until the arrival of the first missionaries, it is said that the *ahupuaʻa* of Kamoku was left largely uncultivated (Munro 2007: 47). With the *Māhele aina* and the division and privatization of lands on Lānaʻi, vast acreages were transferred from Kamehameha III and the *konaka maoli* to several different property owners which included: Walter Murray Gibson, Charles Gay, W. M. Giffard, James Dole and today, David Murdoch of Castle & Cooke Resorts. These different owners saw the island through very different phases of its history, from the Mormon colonist settlement at Palawai, the ranching era of Lanai Ranch, the pineapple plantation of the Hawaiian Pineapple Company, and today the Five-Star resort vacation destination of Castle & Cooke Resorts LLC.

Today the community remains small, but the events of Lānaʻi's history have shaped a unique and culturally diverse population here. It is a tightly knit community, where everyone literally knows everyone. Like the proposed new Senior Center, the High School expansion and the affordable housing projects, the Lānaʻi Community Health Center is viewed by the majority of individuals contacted as a necessary improvement to their health care facilities. The proposed location, adjacent to the Senior Center, across the street from the school and at the town center, is viewed as the most appropriate location, for ease of access for their seniors and families. It could be said that the proposed new Lānaʻi Community Health Center supports one of the cultural resources of the study area, the *kipuna*.

8.1 Recommendation

Individuals consulted for this study largely support the construction of a new Lānaʻi Community Health Center. It is recommended that the Lānaʻi community remain informed about status and timelines regarding construction of the proposed health center.

There will be no adverse impacts to cultural resources or traditional cultural practices by the proposed project, to the contrary, the project is viewed as an enhancement to this community.

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Appendix A Guidelines for Assessing Cultural Impacts from the State of Hawaii Office of Environmental Quality Control

Guidelines for Assessing Cultural Impacts

Adopted by the Environmental Council, State of Hawaii November 19, 1997

1. INTRODUCTION

It is the policy of the State of Hawaii under Chapter 343, HRS, to alert decision makers, through the environmental assessment process, about significant environmental effects which may result from the implementation of certain actions. An environmental assessment of cultural impacts gathers information about cultural practices and cultural features that may be affected by actions subject to Chapter 343, and promotes responsible decision making.

Articles IX and XII of the State Constitution, other state laws, and the courts of the state require government agencies to promote and preserve cultural beliefs, practices, and resources of native Hawaiians and other ethnic groups. Chapter 343 also requires environmental assessment of cultural resources, in determining the significance of a proposed project.

The Environmental Council encourages preparers of environmental assessments and environmental impact statements to analyze the impact of a proposed action on cultural practices and features associated with the project area. The Council provides the following methodology and content protocol as guidance for any assessment of a project that may significantly affect cultural resources.

Background

Prior to the arrival of westerners and the loss of private land ownership, Hawaiians freely accessed and gathered resources of the land and seas to fulfill their community responsibilities. During the Mahele of 1848, large tracts of land were divided and control was given to private individuals. When King Kamehameha III was forced to set up this new system of land ownership, he reserved the right of access to privately owned lands for Native Hawaiian ahupua'a tenants. However, with the later emergence of the western concept of land ownership, many Hawaiians were denied access to previously available traditional resources.

In 1978, the Hawaii constitution was amended to protect and preserve traditional and customary rights of Native Hawaiians. Then in 1995 the Hawaii Supreme Court confirmed that Native Hawaiians have rights to access undeveloped and under-developed private lands. Recently, state lawmakers clarified that government agencies and private developers must assess the impacts of their development on the traditional practices of Native Hawaiians as well as the cultural resources of all people of Hawaii. These Hawaii laws, and the National Historic Preservation Act, clearly mandate federal agencies in Hawaii, including the military, to evaluate the impacts of their actions on traditional practices and cultural resources.

If you own or control undeveloped or under-developed lands in Hawaii, here are some hints as to whether traditional practices are occurring or may have occurred on your lands. If there is a trail on your property, that may be an indication of traditional practices or customary usage. Other clues include streams, caves and native plants. Another important point to remember is that, although traditional practices may have been interrupted for many years, these customary practices cannot be denied in the future.

These traditional practices of Native Hawaiians were primarily for subsistence, medicinal, religious, and cultural purposes. Examples of traditional subsistence practices include fishing, picking ophi and collecting limu or seaweed. The collection of herbs to cure the sick is an example of a traditional medicinal practice. The underlying purpose for conducting these traditional practices is to fulfill one's community responsibilities, such as feeding people or healing the sick.

As it is the responsibility of Native Hawaiians to conduct these traditional practices, government agencies and private developers also have a responsibility to follow the law and assess the impacts of their actions on traditional and cultural resources.

The State Environmental Council has prepared guidelines for assessing cultural resources and has compiled a directory of cultural consultants who can conduct such studies. The State Historic Preservation Division has drafted guidelines on how to conduct ethnographic inventory surveys. And the Office of Planning has recently completed a case study on traditional gathering rights on Kauai.

The most important element of preparing Cultural Impact Assessments is consulting with community groups, especially with expert and responsible cultural practitioners within the ahupua'a of the project site. Conducting the appropriate documentary research should then follow the interviews with the experts. Documentary research should include analysis of mabele and land records and review of transcripts of previous ethnographic interviews. Once all the information has been collected, and verified by the community experts, the assessment can then be used to protect and preserve these valuable traditional practices.

Native Hawaiians performed these traditional and customary practices out of a sense of responsibility: to feed their families, care the sick, nurture the land, and honor their ancestors. As stewards of this sacred land, we too have a responsibility to preserve, protect and restore these cultural resources for future generations.

TEXT OF ACT 50, SLH 2000

A BILL FOR AN ACT RELATING TO ENVIRONMENTAL IMPACT STATEMENTS
UNOFFICIAL VERSION

HOUSE OF REPRESENTATIVES H.B. NO. 2895 H.D.1

TWENTIETH LEGISLATURE, 2000

STATE OF HAWAII

A BILL FOR AN ACT

RELATING TO ENVIRONMENTAL IMPACT STATEMENTS.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The legislature finds that there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawai'i's culture, and traditional and customary rights.

The legislature also finds that native Hawaiian culture plays a vital role in preserving and advancing the unique quality of life and the "aloha spirit" in Hawaii. Articles IX and XII of the state constitution, other state laws, and the courts of the State impose on government agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians as well as other ethnic groups.

Moreover, the past failure to require native Hawaiian cultural impact assessments has resulted in the loss and destruction of many important cultural resources and has interfered with the exercise of native Hawaiian culture. The legislature further finds that due consideration of the effects of human activities on native Hawaiian culture and the exercise thereof is necessary to ensure the continued existence, development, and exercise of native Hawaiian culture.

The purpose of this Act is to: (1) Require that environmental impact statements include the disclosure of the effects of a proposed action on the cultural practices of the community and State; and (2) Amend the definition of "significant effect" to include adverse effects on cultural practices.

SECTION 2. Section 343-2, Hawaii Revised Statutes, is amended by amending the definitions of "environmental impact statement" or "statement" and "significant effect", to read as follows:

"Environmental impact statement" or "statement" means an informational document prepared in compliance with the rules adopted under section 343-6 and which discloses the environmental effects of a proposed action, effects of a proposed action on the economic [and] welfare, social welfare, and cultural practices of the community and State; effects of the economic activities arising out of the proposed action, measures proposed to minimize adverse effects, and alternatives to the action and their environmental effects.

The initial statement filed for public review shall be referred to as the draft statement and shall be distinguished from the final statement which is the document that has incorporated the public's comments and the responses to those comments. The final statement is the document that shall be evaluated for acceptability by the respective accepting authority.

"Significant effect" means the sum of effects on the quality of the environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State's environmental policies or long-term environmental goals as established by law, or adversely affect the economic [or] welfare, social welfare[,], or cultural practices of the community and State."

SECTION 3. Statutory material to be repealed is bracketed. New statutory material is underscored.

SECTION 4. This Act shall take effect upon its approval.

Approved by the Governor as Act 50 on April 26, 2000

2. CULTURAL IMPACT ASSESSMENT METHODOLOGY

Cultural impacts differ from other types of impacts assessed in environmental assessments or environmental impact statements. A cultural impact assessment includes information relating to the practices and beliefs of a particular cultural or ethnic group or groups.

Such information may be obtained through scoping, community meetings, ethnographic interviews and oral histories. Information provided by knowledgeable informants, including traditional cultural practitioners, can be applied to the analysis of cultural impacts in conjunction with information concerning cultural practices and features obtained through consultation and from documentary research.

In scoping the cultural portion of an environmental assessment, the geographical extent of the inquiry should, in most instances, be greater than the area over which the proposed action will take place. This is to ensure that cultural practices which may not occur within the boundaries of the project area, but which may nonetheless be affected, are included in the assessment. Thus, for example, a proposed action that may not physically alter gathering practices, but may affect access to gathering areas would be included in the assessment. An ahupua'a is usually the appropriate geographical unit to begin an assessment of cultural impacts of a proposed action, particularly if it includes all of the types of cultural practices associated with the project area. In some cases, cultural practices are likely to extend beyond the ahupua'a and the geographical extent of the study area should take into account those cultural practices.

The historical period studied in a cultural impact assessment should commence with the initial presence in the area of the particular group whose cultural practices and features are being assessed. The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs.

The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man-made and natural, including submerged cultural resources, which support such cultural practices and beliefs.

The Environmental Council recommends that preparers of assessments analyzing cultural impacts adopt the following protocol:

1. identify and consult with individuals and organizations with expertise concerning the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or ahupua'a;
2. identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
3. receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
4. conduct ethnographic, historical, anthropological, sociological, and other culturally related documentary research;
5. identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
6. assess the impact of the proposed action, alternatives to the proposed action, and mitigation measures, on the cultural resources, practices and beliefs identified.

Interviews and oral histories with knowledgeable individuals may be recorded, if consent is given, and field visits by preparers accompanied by informants are encouraged. Persons

interviewed should be afforded an opportunity to review the record of the interview, and consent to publish the record should be obtained whenever possible. For example, the precise location of human burials are likely to be withheld from a cultural impact assessment, but it is important that the document identify the impact a project would have on the burials. At times an informant may provide information only on the condition that it remain in confidence. The wishes of the informant should be respected.

Primary source materials reviewed and analyzed may include, as appropriate: Mahele, land court, census and tax records, including testimonies; vital statistics records; family histories and genealogies; previously published or recorded ethnographic interviews and oral histories; community studies, old maps and photographs; and other archival documents, including correspondence, newspaper or almanac articles, and visitor journals. Secondary source materials such as historical, sociological, and anthropological texts, manuscripts, and similar materials, published and unpublished, should also be consulted. Other materials which should be examined include prior land use proposals, decisions, and rulings which pertain to the study area.

3. CULTURAL IMPACT ASSESSMENT CONTENTS

In addition to the content requirements for environmental assessments and environmental impact statements, which are set out in HAR §§ 11-209-10 and 16 through 18, the portion of the assessment concerning cultural impacts should address, but not necessarily be limited to, the following matters:

1. A discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained.
2. A description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken.
3. Ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained.
4. Biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area.
5. A discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken. This discussion should include, if appropriate, the particular perspective of the authors, any opposing views, and any other relevant constraints, limitations or biases.
6. A discussion concerning the cultural resources, practices and beliefs identified, and, for resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site.

7. A discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area, affected directly or indirectly by the proposed project.

8. An explanation of confidential information that has been withheld from public disclosure in the assessment.

9. A discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs.

10. An analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.

11. A bibliography of references, and attached records of interviews which were allowed to be disclosed.

The inclusion of this information will help make environmental assessments and environmental impact statements complete and meet the requirements of Chapter 343, HRS. If you have any questions, please call 586-4185.

Appendix B Formal Letter Responses

DRAFT

February 25, 2010

Wilson Okamoto Corporation
1907 South Beretania Street #400
Honolulu, Hawaii 96826

Dear John L. Sakaguchi:

SUBJECT: Draft Environmental Assessment, Draft Assessment Notice, Lanai's Community Health Center, CHDC Project, No. 09-044, Lanai's CHS, Lanai, Hawaii.
TRK: 49-006-011

Malalo for the opportunity to comment on the above project for the Lanai's Community Health Center for Lanai's City. This project will be a new health center and improvement on the current health center and services for the community. Your letter for comments has also been distributed to the Maui-Lanai Islands Burial Council for their review and comment.

The project area has been previously delineated and the SHPD History and Culture Branch do not anticipate any burial or other relationships in the area. Our archaeological branch will be sending in their responses to these comments. This letter acknowledges there is probably no impact to traditional Hawaiian cultural practices for at least since the town was built in the 1920's.

The middle of the Lanai's Town Square and its boundaries are currently under consideration and review for nomination to the National Historic Register and this project may or may not be within those boundaries and would be impacted by those rules for design and so on.

Please call me directly at 938.692.8025 or email at Phyllis.L.Chuan@hawaii.gov should you have any questions.

Sincerely,
P. Coehee Cayan
Phyllis Coehee Cayan
History and Culture Branch Chief

cc: Nancy McMillan, Deputy SHPD, State Archaeologist
Ross Stephenson, Architecture Historian

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
401 KANUIKILA BOULEVARD, ROOM 135
HONOLULU, HAWAII 96819

7953-01 JS
3/1/10
cc: AHU
CSH
en

LOG NO: 20100627
DOC NO: 1002PC08

MAR 01 2010
WILSON OKAMOTO CORPORATION

7553-01
2/15/10
PH: (808) 594-1888

STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

Wilson Okamoto Corporation
Attn: John L. Sakauehi, AICT, Senior Planner
1977 South Beretani Street, Suite 400
Honolulu, HI 96826

HRD10-4825

March 02, 2010

Re: Draft Environmental Assessment, Pre-Assessment Notice; Lanai Community Health Center, CBDC Project No. 08-94; Lanai City, Lanai, Hawaii; TMK: 4-9-006-011; Request for Comment.

Aloha e Mr. Sakauehi:

Thank you for the opportunity to comment on the above-referenced project.

The Office of Hawaiian Affairs (OHA) is in receipt of the above-referenced Draft Environmental Assessment (DEA) Pre-Assessment Notice. Applicant Lanai Community Health Center (LCHC) is requesting construction of a new health care facility in Lanai City which will provide accessible primary medical care, dental care, behavioral health services, prenatal, family planning, nutrition and preventive health education services open to the low- and moderate-income, underserved, high-risk, and underserved residents of Lanai, State of Hawaii, funds, and land leased from Center-Care & Cooks Resorts LLC, will be used for operation of the LCHC. OHA offers the following comments.

We look forward to reviewing the DEA's analysis and mitigation measures relating to the project's impact primarily on historic and cultural properties and/or resources. We note that in January 2009, the County of Maui Planning Department and the State of Hawaii Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD) issued a Draft National Register of Historic Places Registration Form for Lanai City Business Country Town historic district, a 17-block area located in the center of Lanai City. We understand that the Draft Registration Form is still under review.

OHA further understands that the LCHC project is located on the southwestern edge of the historic district. The Draft Registration Form identifies three (3) existing buildings on the

Wilson Okamoto Corporation
Attn: John L. Sakauehi, AICT, Senior Planner
1977 South Beretani Street, Suite 400
Honolulu, HI 96826

project site as non-contributing buildings, which were constructed in 1965 as among a total of 10 dormitories built by Panatation Housing Ltd. We anticipate more detailed elaboration on this matter in the completed DEA, as well as discussion on the historical context pertaining to this historic district and Lanai Island.

Lastly, in the event that historic properties, including Iwi Kopuna (humpat butahi), are encountered during construction work for the LCHC project, OHA requests to be informed and asks for applicant's compliance pursuant to Chapter 6E, HRS, and Section 13-300, H.A.R, as follows:

1. Stop all construction/disturbing activity in the immediate area.
2. Leave all remains in place.
3. Immediately notify the SHPD and the county police department.

Thank you again for the opportunity to comment on this project. Should you have any questions, please contact Jerome Yasuhara, Compliance Specialist III, at (808) 594-0239 or by email at jyasauehi@ohahawaii.org.

"O wau iho no, me ka he'aha'aha."

Clyde W. Nani'o
Clyde W. Nani'o
Chief Executive Officer

c: Trustee Boyd P. Mosey
c: OHA Maui/Lanai Island - CRC

PHONE (808) 594-1825

FAX (808) 594-1825



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

IRD 10/4825

March 16, 2010

Anna Cordova, Archaeologist
Colleena Madeiros Degan, Archaeologist
Cultural Surveys Hawaii
1903 Main Street
Wahiawa, Hawaii 96793

RE: Cultural Impact Assessment consultation
Lana'i Community Health Center Project
Kamoku Ahupua'a, Lahaina District, Maui, Island
Tax Map Key: (2) 4-9-006:011

Aloha e Anna Cordova and Colleena Madeiros Degan,

The Office of Hawaiian Affairs (OHA) is in receipt of your March 10, 2010 letter initiating consultation and seeking comments regarding a cultural impact assessment (assessment) for the proposed construction of a new Community Health Center on the Island of Lanai. Based on the information contained within your letter, the study area for the assessment will be the ahupua'a of Kamoku. The assessment will also depend on the cultural significance of the Lana'i Community Health Center itself due to the services and activities that will be held there and the individuals who will benefit from its services. It will provide:

OHA recommends that consultation be initiated with the following individuals and community organizations who may be willing to share their knowledge regarding this assessment: Ms. Pearl 'Ahi He-ole, OHA's Community Resource Coordinator; Mr. Keith Maly, Executive Director of the Lana'i Cultural and Heritage Center; Mr. Scott Obitaniana, Ms. Nani Wai'anae and Ms. Malulu Evans. Please remember that this list is not all encompassing and we are sure additional individuals will be identified as you move forward with your consultation process.

We applaud your efforts to perform a Field Inspection and Literature Review to address the project's history, City Business County Town or Historic District. Such recognition would put Lana'i on a list of the Nation's significant historic places worthy of preservation. We also seek assurances that a comprehensive review of archaeological studies related to the assessment area will be conducted to determine whether an archaeological assessment or inventory survey is warranted.

Anna Cordova, Archaeologist
Colleena Madeiros Degan, Archaeologist
Cultural Surveys Hawaii
March 16, 2010
Page 2 of 2

Thank you for initiating consultation at this early stage and we look forward to the opportunity to review the draft assessment and provide additional comments. Should you have any questions, please contact Kathryn Keala, at (808) 594-1848 or kathk@shlucap.com.

'O waha iho no me ka 'ua'i'o,

Clary W. Namu O
Chief Executive Officer

C: OHA Lana'i CRC office

RECEIVED



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
461 KAMOLELA BOULEVARD, ROOM 333
HONOLULU, HAWAII 96807



LANA'I HISTORICAL SOCIETY
1000 W. HANALEI AVENUE
HONOLULU, HAWAII 96813
TEL: 808-253-4640
WWW.LANAIIHSOCIETY.COM

LOG NO: 2010.0621
DOC. NO: 1003PC002

March 17, 2010

MEMORANDUM

TO: Colleen Medicus Dagan, Archaeologist
Cultural Surveys Hawaii; 1993 Main Street, Wailuku, Hawaii, 96783

FROM: Phyllis Coocchie Cayman, History and Culture Branch Chief

Subject: KAMOKU 10: Cultural Impact Assessment (CIA) Community Contact Letter for the Lana'i Community Health Center Project, Kamohi'Alapua'a, Lahaina District, Lana'i Island. (TMK: (2) 4-9-006:011)

Missable for the opportunity to comment on this CIA regarding the proposed Lana'i Community Health Center Project located at the above parcel which is just north of the Lana'i Senior Center between Houston Street and Gay Street, and 68 and 70 Street.

The department notes that the current buildings built in 1965 are designated as non-contributing buildings (and will be demolished) and will not be an impact on the current nomination to the National Register of Historic Places for the Lana'i City Business Courtyer Town Historic District (Lana'i City BC). The department also notes that any cultural practices in this area would be maintained and limited to current use and should be verified by the Lana'i folks referenced below.

Further talk story with the kupuna and/or folks familiar with the historical use of that particular parcel may be helpful in your CIA research. Please contact these folks for more local history of possible cultural impacts:

1. Mr. Kopa Maui, Executive Director, Lana'i Culture and History Center (LCHC) Phone: 808-565-7177
2. Mr. Albert Medina, Boarding Officer, LCHC board of director member amed@alaba.net
3. Aunty Irene Coocchie Cayman, LCHC officer, LCHC board of director member (arrange with Kopa to see her)
4. Undo Soa Kaopuka, Kupuna (arrange with Kopa to see him)
5. Na Kupuna at the Lana'i Seniors Center, daily until noon. See Miggie Jusitampo at the center.
6. Alberta Morita DeLelley, Commercial Farmer/Editor of Lana'i Times. Phone: 808-543-0808

Any questions, please call me at 808-692-8025 or via email at Phyllis.L.Cayman@hawaii.gov

C: Mr. Hinaano Rodrigues, SHPD Maui Cultural Historian
Mr. Ross Stephenson, SHPD Architecture Historian



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
461 KAMOLELA BOULEVARD, ROOM 333
HONOLULU, HAWAII 96807



LANA'I HISTORICAL SOCIETY
1000 W. HANALEI AVENUE
HONOLULU, HAWAII 96813
TEL: 808-253-4640
WWW.LANAIIHSOCIETY.COM

LOG NO: 2010.0108
DOC. NO: 1004HR03

April 19, 2010

Ms. Colleen Medicus Dagan
Ms. Anna Cordova
Cultural Surveys Hawaii; 1
1993 Main Street
Wailuku, Hawaii; 96793

Dear Colleen Dagan and Anna Cordova:

SUBJECT: Request for Information Regarding a Cultural Impact Assessment for the Lana'i Community Health Center Project, Kamohi'Alapua'a, Lahaina District, Island of Lana'i. TMK: (2) 4-9-006:011.

This is in response to your request for any information that might assist your firm in gathering knowledge of traditional cultural activities and/or traditional cultural rights that may be impacted by the development of the above property.

The Maui SHPD office recommends contacting the following persons in addition to a letter sent previously by myself dated March 17, 2010 Log No. 2010.0621 Doc. No. 1003PC002.

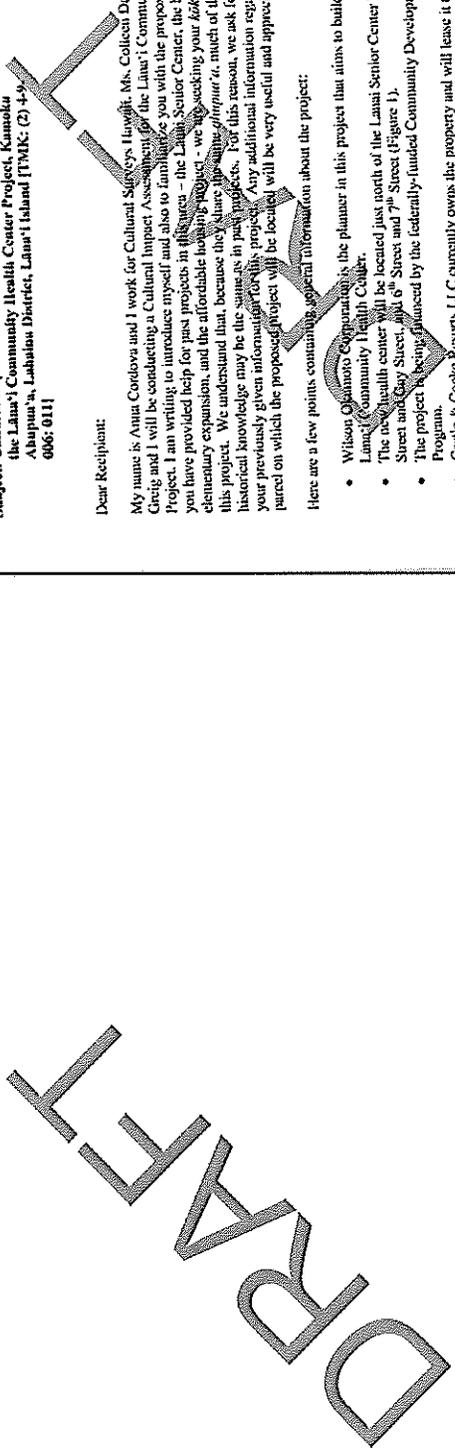
1. The Lana'i Archaeological Consultant, Marsha Evans at Phone: 808.640.0629.
2. Aunty Pua Pua, the Lana'i Representative to the MLJBC at Phone: 808-565-7136 or P.O. Box 630761, Dept. 7, H11108703.
3. Alberta Morita, Former DOCCARE Officer at email: amort@alabalaba.net or Phone: 808.565.6448.

Should you have any questions or concerns, please feel free to contact our Cultural Historian, Mr. Hinaano Rodrigues at 808-253-4640.

Sincerely,
Phyllis Coocchie Cayman
Ms. Phyllis "Coocchie" Cayman
History and Culture Branch Chief
State Historic Preservation Division

cc: Mr. Hinaano Rodrigues, SHPD Cultural Historian

Appendix C Community Contact Letters



CULTURAL SURVEYS HAWAII
ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL DOCUMENTATION SERVICES - SINCE 1986



Oahu Island
10, Waialae Avenue
Honolulu, HI 96814
Tel: (808) 262-9077
Fax: (808) 262-9596

Maui Island
1793 Main Street
Wailea, Hawaii 96795
Tel: (808) 261-9999
Fax: (808) 261-9994

Honolulu Office
1166 Kalia Road
Honolulu, Hawaii 96813

CSH Job Code: Lanai 10

March 22, 2010

Subject: Cultural Impact Assessment Community Contact Letter for the Lanai Community Health Center Project, Kamoku Ahupua'a, Lanai District, Lanai Island [TMK: (3) 4-9-006:011]

Dear Recipient:

My name is Anita Cordova and I work for Cultural Surveys Hawaii. Ms. Colleen Dugan, Ms. Thuy Le-Gregg and I will be conducting a Cultural Impact Assessment for the Lanai Community Health Center Project. I am writing to introduce myself and also to familiarize you with the proposed project. Just as you have provided help for past projects in this area - the Lanai Senior Center, the high school and elementary expansion, and the affordable housing project - we are seeking your *kaia* and guidance for this project. We understand that, because they share the same *ahupua'a*, much of the traditional and historical knowledge may be the same as in past projects. For this reason, we ask for permission to use your previously given information for this project. Any additional information regarding the specific parcel on which the proposed project will be located will be very useful and appreciated.

Here are a few points containing general information about the project:

- Wilson Oshiro Corporation is the planner in this project that aims to build new facilities for the Lanai Community Health Center.
- The new health center will be located just north of the Lanai Senior Center between Houston Street and Gary Street, just off 6th Street and 7th Street (Figure 1).
- The project is being financed by the federally-funded Community Development Block Grant Program.
- Castle & Cooke Resorts, LLC currently owns the property and will lease it to the health center.
- The project is located within an area that is being considered for nomination to the National Register of Historic Places as the Lanai City Business County Town Historic District.
- There are three buildings located on the current project site. They were built in 1965 by Plantation Housing Ltd. and are listed as non-contributing buildings. They will be removed to make room for the new construction.

WWW.CULTURALSURVEYS.COM - INFO@CULTURALSURVEYS.COM

CULTURAL SURVEYS HAWAII

ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL DOCUMENTATION SERVICES - SINCE 1982

CSI Job Code: **Kamoku 10**

Wednesday, February 10, 2010

Subject: Cultural Impact Assessment Community Contact Letter for the Lanai Community Health Center Project, Kamohā Ahupua'a, Lahaina District, Lanai Island [TMK: (2) 4-9-006: 006: 011]

Dear Recipient:

On behalf of the County of Maui, Community Development Block Grant Program, the Lanai Community Health Center and Wilson Okamoto Corporation, Cultural Surveys Hawaii, Inc. is conducting a Cultural Impact Assessment (CIA) for the proposed Lanai Community Health Center (hereafter referred to as "the health center") project. The project is located in Lanai City, Kamohā Ahupua'a, Lahaina District, Lanai Island [TMK: (2) 4-9-006: 011]. More specifically, the proposed health center will be just north of the Lanai Senior Center between Houston Street and City Street and 6th Street and 7th Street.

The area is approximately 42,857 square feet, and is currently owned by Castle & Cooke Resorts, LLC who will lease it to the health center. The parcel will be subdivided, and the health center will use approximately 25,007 square feet of the proposed portion for the new facility. Currently existing on the property are three buildings which were once bus stop dormitories by workers employed by the plantation. Two of those buildings are now abandoned, and a portion of the third building houses the existing administration offices for the Lanai Community Health Center and the activity room for the Lanai An Community Development Block Grant Program. This grant was issued so that the health center could plan and design a new health center in order to serve low- and moderate-income residents of Lanai. The health center would provide the following:

- accessible primary medical care
- dental care
- behavioral health services
- prenatal and family planning
- nutrition and preventive health education services



WWW.CULTURALSURVEYS.COM - INFO@CULTURALSURVEYS.COM

Page 2

Cultural Surveys Hawaii
Wednesday, February 10, 2010

In addition to the CIA, Cultural Surveys Hawaii is also currently performing a field inspection and Literature Review in order to address the project's historic preservation review process. The project area is located in Lanai City within an area that is being considered for nomination to the National Register of Historic Places as the Lanai City Business Country Town historic district. In the registration form submitted to the National Register of Historic Places, the three buildings located on the current project site are listed as non-contributing buildings. These buildings were built in 1965 by Plantation Housing Ltd. among a total of nine dormitories. Because they are non-contributing buildings, they will be removed to make room for the new construction.

The purpose of the CIA is to evaluate potential impacts to traditional cultural practices as a result of the proposed project.

We are seeking your *kāhuna* or help and guidance regarding the following aspects of our study:

- General history and present and past land use of the project area
- Knowledge of cultural resources which may be impacted by the Lanai Community Health Center area - for example, traditional plant gathering sites, historic sites, archaeological sites, and burials.
- Knowledge of traditional gathering practices in the area - both past and ongoing.
- Cultural associations of the project area, such as legends and traditional uses.
- Referrals of *kāhuna* or elders who might be willing to share their cultural knowledge of the project area and the surrounding *ahupua'a* lands.
- Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the proposed Lanai Community Health Center area.

We invite you to contact us, Anna Corbova or Colleen Modéiros Dugan, at 1-808-242-9882. You may also contact us by e-mail at anna@culturalsurveys.com and colleen@culturalsurveys.com if you have any information you would like to share.

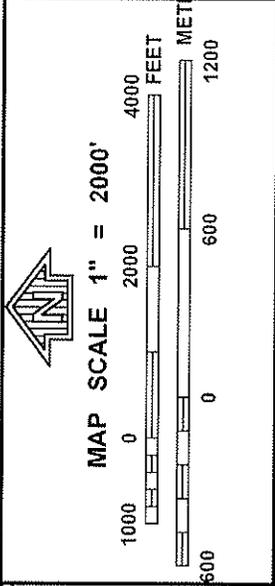
Muhaha,

Anna Corbova, Archaeologist
Colleen Modéiros Dugan, Archaeologist

Cultural Impact Assessment Community Contact Letter for the Lanai Community Health Center Project, Kamohā Ahupua'a, Lahaina District, Lanai Island [TMK: (2) 4-9-006: 011]

Appendix D

Supporting Information



NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0500E

FIRM
FLOOD INSURANCE RATE MAP
MAUI COUNTY,
HAWAII

PANEL 500 OF 825
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS
 COMMUNITY NUMBER 150003
 PANEL SUFFIX 0500
 MAUI COUNTY HAWAII

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

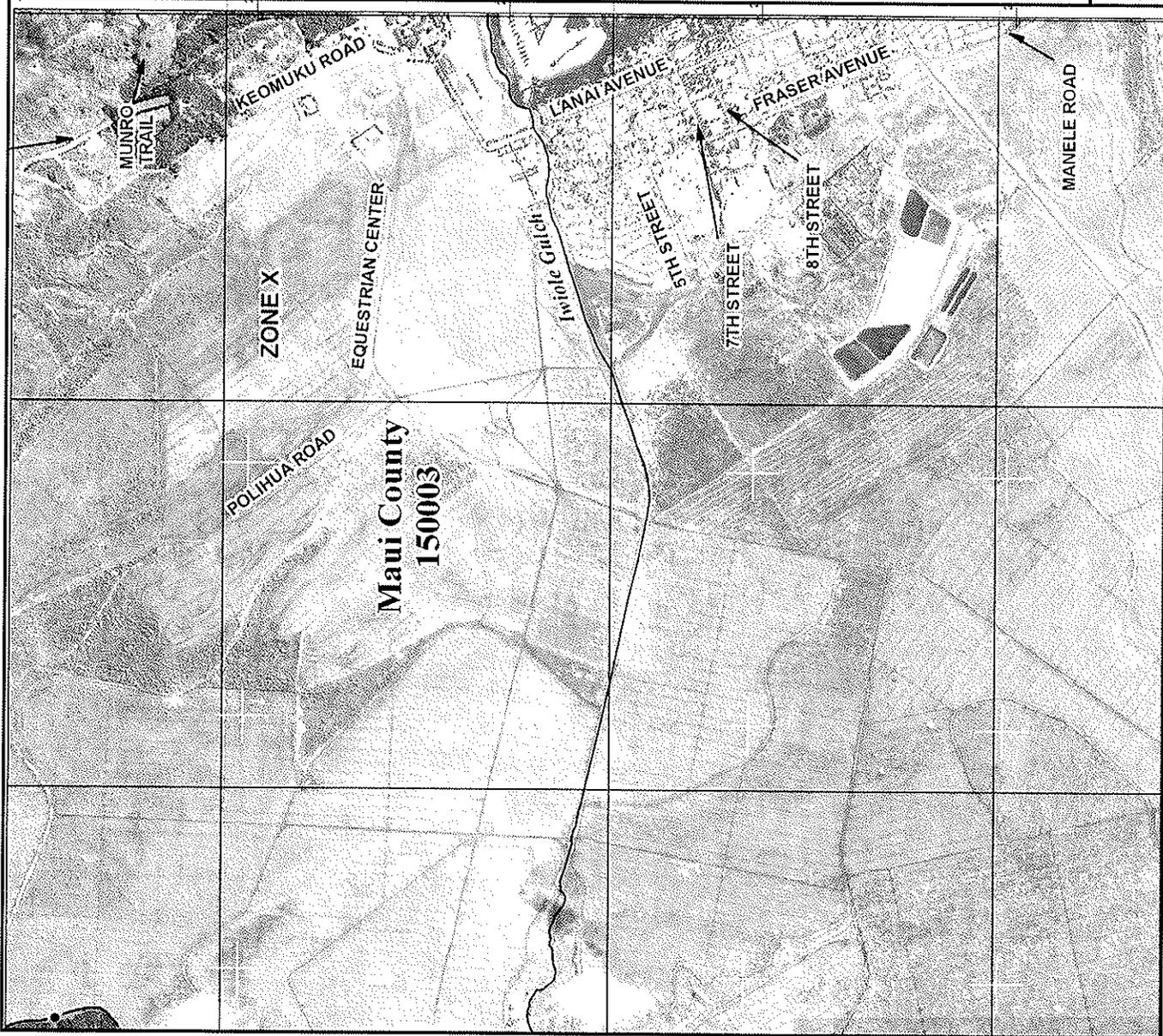
MAP NUMBER
1500030500E

MAP REVISED
SEPTEMBER 25, 2009

Federal Emergency Management Agency



This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps, check the FEMA Flood Map Store at www.nsc.fema.gov



Section 4

2008 AIR QUALITY DATA

To protect the state's air quality from degradation, the Department of Health's Clean Air Branch is responsible for regulating and monitoring pollution sources to ensure that the levels of criteria pollutants remain well below the state and federal ambient air quality standards. Data collected from the ambient air network is validated by the Air Surveillance and Analysis Section to ensure that the reported data is of good quality and meets all quality control and assurance requirements.

In March 2008, a second vent opened at the Kilauea volcano causing the SO₂ emissions to double. Consequently, the Special Purpose monitoring stations in communities near the volcano recorded higher levels of SO₂ and PM_{2.5}, with occasional exceedances of the NAAQS for those pollutants.

The EPA considers the volcano a natural, uncontrollable event and therefore the state is requesting exclusion of these NAAQS exceedances from attainment/non-attainment determination.

Excluding the exceedances due to the volcano, in 2008 the state of Hawaii was in attainment of all NAAQS.

Explanation of Summary Tables 4-1 through 4-14:

- Summaries are by pollutant and averaging period, with the number of occurrences exceeding the NAAQS or, in Table 4-14, the number of exceedances of the state H₂S standard (there is no federal H₂S standard);
- The "Annual Statistics Maximum" is the highest and second highest valid values recorded in the year for the averaging period. For PM_{2.5}, the maximum and 98th percentile concentrations are provided and for O₃, the 4th highest daily maximum value is also displayed;
- The "Annual Statistics Annual Mean" is the arithmetic mean of all valid values recorded in the year;
- "Possible Periods" is the total number of possible sampling periods in the year for the averaging period;
- "Valid Periods" is the total number of acceptable sampling periods after data validation;
- "Percent Recovery" represents the amount of quality data reported;
- Attainment with the NAAQS is determined according to 40 CFR 50.

Explanation of Tables 4-15 through 4-23:

- For each pollutant and averaging period, the lowest and highest concentrations for each month is presented;
- The month with the highest value recorded in the year for each site is highlighted.



Sole Source Aquifer Designations in EPA, Region 9

The U.S. EPA's Sole Source Aquifer Program was established under Section 1424(e) of the U.S. Safe Drinking Water Act (SDWA.) Since 1977, it has been used by communities to help prevent contamination of groundwater from federally-funded projects. It has increased public awareness of the vulnerability of groundwater resources.

How did this program start? SDWA regulations implementing the sole source aquifer statute were first proposed in 1977 for the Edwards Underground Reservoir in San Antonio, Texas. These regulations guided U.S. EPA in the subsequent designation of 64 sole source aquifers across the United States.

What does the Sole Source Aquifer Program do? The Sole Source Aquifer program allows for EPA environmental review of any project which is financially assisted by federal grants or federal loan guarantees. These projects are evaluated to determine whether they have the potential to contaminate a sole source aquifer. If there is such a potential, the project should be modified to reduce or eliminate the risk, or federal financial support may be withdrawn. This doesn't mean that the Sole Source Aquifer program can delay or stop development of landfills, roads, publicly owned wastewater treatment works or other facilities. Nor can it impact any direct federal environmental regulatory or remedial programs, such as permit decisions.

The Sole Source Aquifer Program's review authority extends only to projects funded with **federal assistance** that are to be implemented in designated sole source aquifer areas. (For regulations applicable to new private development, you should consult with your local, county or state environmental health agency.)

Typical projects reviewed by the U.S. EPA include housing projects undertaken by Housing and Urban Development, and highway construction and expansion projects undertaken by the Federal Highway Administration. In 1991, the U.S. EPA reviewed 152 federal assistance projects totaling \$571 million; of these projects, 25 had to be modified to prevent contamination of sole source aquifers. Modifications included the redesign of bridges and highways to prevent spills of hazardous materials.

How do you designate an aquifer as a "Sole Source" Aquifer? As the name implies, only a "sole source" aquifer can qualify for the program. To be a sole source, the aquifer must supply more than 50% of a community's drinking water. Any individual, corporation, association, or federal, state or



local agency may petition the U.S. EPA for sole source aquifer designation, provided the petition includes sufficient hydrogeologic information. An outline describing how such petitions should be prepared is contained in *The Sole Source Aquifer Designation Petitioner Guidance*, copies of which are available at EPA Regional offices (see contact information below.)

What about Boundaries? Determination of sole source aquifer boundaries is a difficult aspect of the designation process since the "designated area includes the surface area above the aquifer and its recharge area." Thus, some sole source aquifers extend across state boundaries. The 10,000 square-mile Eastern Snake River Aquifer, for example, includes portions of Idaho, Nevada, Utah, and Wyoming.

In Region 9: nine sole source aquifers have been designated in the following areas as shown on the map: Upper Santa Cruz and Avra Basin Aquifer, covering parts of Pima, Pinal, and Santa Cruz Counties, Arizona; Naco-Bisbee Aquifer, Arizona; Ocotillo-Coyote Wells, Imperial County, California; Fresno Aquifer, California; Scotts Valley Aquifer, Santa Cruz County, California; Campo-Cottonwood Aquifer, San Diego County, California; Northern Guam Aquifer, Guam; Southern Oahu Aquifer, Hawaii; and Molokai Aquifer, Hawaii.

Region 9 SSA maps are on the web at www.epa.gov/safewater/ssanp.html. For more information about SSA designation and project reviews, please call David Albright, manager of the Ground Water Office, at (415) 972-3971 or email albright.david@epa.gov.

Project Location



NOT TO SCALE

PROJECT SITE

Lana'i City

KAMOKU HOMESTEAD

Hulupu'unui

Pu'ukoa

Pumping Station

Pu'uanāhawai'i

KAUMALAPA U

PALANAI

BASIN

15,800 LF
14,600 LF

RUNWAY PROTECTION ZONE (RPZ)

Beacon

Lan 2

Ilialana

Lana'i Airport

LANAI AIRPORT

CONTOUR INTERVAL 10 METERS

Pepeiaohuluhulu Hill

Miki



AIRPORT LOCATION MAP



WILSON OKAMOTO
C O R P O R A T I O N

ENGINEERS | PLANNERS | CONSULTANTS

1907 South Beretania Street Suite 400

www.wilsonokamoto.com

Honolulu, Hawaii, U.S.A. 96826

PH 808-946-2277 FX 808-946-2253