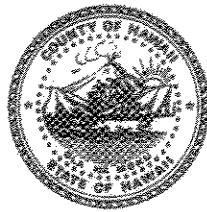


William P. Kenoi  
Mayor



Lono A. Tyson  
Director

Ivan M. Torigoe  
Deputy Director

**County of Hawai'i**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

25 Aupuni Street • Hilo, Hawai'i 96720  
(808) 961-8083 • Fax (808) 961-8086  
[http://co.hawaii.hi.us/directory/dir\\_envmng.htm](http://co.hawaii.hi.us/directory/dir_envmng.htm)

November 10, 2009

Office of Environmental Quality Control  
State of Hawai'i  
235 South Beretania Street, Suite 702  
Honolulu, Hawai'i 96813

Attention: Ms. Katherine Puana Kealoha, Esq., Director

**Subject:** Queen Lili'uokalani Village Subdivision Large Capacity Cesspool  
Conversion Project, Final Environmental Assessment Filing for  
Publication, TMK Plats: (3) 7-04-011, 012, and 013  
North Kona, Hawai'i

Dear Ms. Kealoha,

The County of Hawai'i Department of Environmental Management has reviewed the comments received during the 30-day public comment period which ended on October 8, 2009. The agency has determined that this project will not have significant environmental effects and has issued a Negative Declaration, also referred to as a Finding of No Significant Impact (FONSI). Please publish this notice in the November 23, 2009 issue of the OEQC's *The Environmental Notice*.

We have enclosed a completed OEQC Publication Form, one hard copy of the Final EA, and one (1) CD containing the Final EA and project summary.

If you have any questions on this matter, please contact Mr. Lyle Hirota, Deputy Division Chief at (808) 961-8333 ([lhirota@co.hawaii.hi.us](mailto:lhirota@co.hawaii.hi.us)) or Ms. Dora Beck, P.E., Wastewater Division Chief at (808) 961-8513 ([dbeck@co.hawaii.hi.us](mailto:dbeck@co.hawaii.hi.us)).

Best Regards and Aloha,

Lono A. Tyson

DIRECTOR

enclosures

cc: Jared Chang, SSFM International, Inc.  
Ivan Torigoe, Deputy Director  
Dora Beck, P.E., Wastewater Division Chief

# FINAL ENVIRONMENTAL ASSESSMENT

## QUEEN LILI‘UOKALANI VILLAGE SUBDIVISION LARGE CAPACITY CESSPOOL CONVERSION PROJECT

**NORTH KONA, HAWAII**  
**NOVEMBER 2009**

**PROPOSING AGENCY:**



**COUNTY OF HAWAII  
DEPARTMENT OF ENVIRONMENTAL  
MANAGEMENT  
25 AUPUNI STREET  
HILO, HI 96720**

**PREPARED BY:**

**SSFM**  
INTERNATIONAL  
SSFM INTERNATIONAL, INC.  
501 SUMNER STREET, SUITE 620  
HONOLULU, HI 96817

**FINAL ENVIRONMENTAL ASSESSMENT**

**FOR**

**QUEEN LILI‘UOKALANI VILLAGE SUBDIVISION**

**LARGE CAPACITY CESSPOOL CONVERSION**

**PROJECT**

**North Kona, Hawai‘i**

**NOVEMBER 2009**

*PROPOSING AGENCY:*



County of Hawai‘i  
Department of Environmental Management  
25 Aupuni Street  
Hilo, Hawai‘i 96720

*PREPARED BY:*



SSFM International, Inc.  
501 Sumner Street, Suite 620  
Honolulu, Hawai‘i 96817

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## **CHAPTER 1: INTRODUCTION**

### **1.1 INTRODUCTION**

The County of Hawai'i, Department of Environmental Management (DEM) is proposing to construct wastewater system improvements to serve the Queen Lili'uokalani Village (QLV) Subdivision within the Kailua-Kona community in the North Kona District on the Island of Hawai'i. The improvements are planned to establish an approved collection system replacing the large capacity cesspools presently serving this subdivision. This project is referred to as the "Queen Lili'uokalani Village Subdivision Large Capacity Cesspool Conversion Project."

#### **Project Summary**

In 1998, the U.S. Environmental Protection Agency (EPA) promulgated regulations (40 CFR 144.14) which required the elimination of all large capacity "gang" cesspools (LCCs) used for wastewater disposal by April 5, 2005. LCCs were banned because untreated sewage disposed into these cesspools is allowed to drain and percolate directly into the soil and groundwater potentially causing impacts to public health along with other environmental concerns. Due to the quantity of LCCs that exist throughout Hawai'i County, EPA and County officials have worked together to reach an agreement that allots the County a longer timetable to close these LCCs.

The subdivision was developed in the early 1970's by a private developer and the Queen Lili'uokalani Trust (QLT) in cooperation with federal, state, and county agencies as an experimental affordable housing project. Normal subdivision, roadway, and other codes were modified to see if there would be a cost savings. The QLT leased the lots to individual families and the common areas to the homeowners' association. A total of 182 residential lots and a common homeowners' association parcel are provided within this subdivision. There are also many undeveloped open areas which are common areas owned by the homeowners' association.

The County of Hawai'i constructed LCCs as a low-cost wastewater disposal solution. Based on information from the EPA and field inspections, there are 30 LCCs identified for conversion within the boundary of the QLV subdivision. The County proposes to construct a new sewer collection system located within public rights-of-way or new sewer easements. Sewer system improvements will thus serve properties that are currently connected to LCCs based upon those landowners consultations with the County.

Figure 1.1 shows the general location of the QLV Subdivision, figure 1.2 depicts the location on the U.S.G.S. quadrangle map, and figure 1.3 shows the aerial photo of the project area. Table 1.1 summarizes the pertinent project-related information.



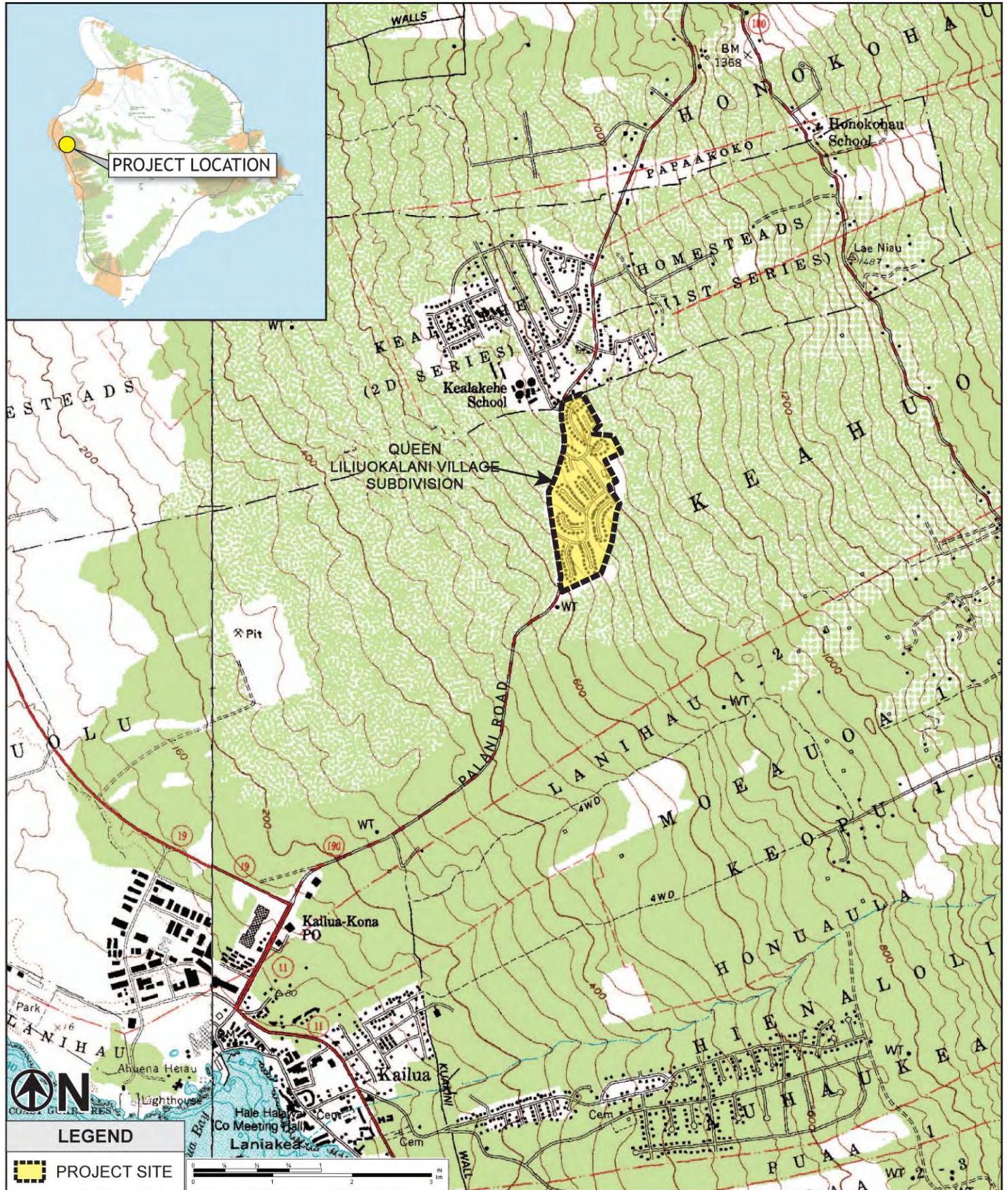
**GENERAL LOCATION MAP**

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion  
County of Hawaii, Department of Environmental Management, Technical Services Section

**Figure 1.1**

Source:  
SSFM International Inc.





**USGS QUADRANGLE PROJECT LOCATION MAP**

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion  
County of Hawaii, Department of Environmental Management, Technical Services Section

**Figure 1.2**

Source:  
USGS Quadrangle





AERIAL VIEW LOCATION MAP

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion  
County of Hawaii, Department of Environmental Management, Technical Services Section

Figure 1.3

Source:  
(Aerial) Digital Globe



**Table 1.1 Project Summary**

Project Name:	Queen Lili'uokalani Village Subdivision Large Capacity Cesspool Conversion Project
Proposing Agency:	Department of Environmental Management County of Hawai'i 25 Aupuni Street Hilo, Hawai'i 96720 Contact: Ms. Dora Beck, P.E., Wastewater Division Chief
Authorized Agent:	SSFM International, Inc. 501 Sumner Street, Suite 620 Honolulu, Hawai'i 96817 Contact: Mr. Jared K. Chang
Proposing Agency:	Department of Environmental Management, County of Hawai'i
Project Description:	This project involves the construction of new sewer collection systems for treatment to serve the existing 51.6-acre Queen Lili'uokalani Village Subdivision within the Kailua-Kona community in the North Kona District of the Island of Hawai'i. These improvements would allow for the closure of existing large capacity "gang" cesspools (LCC) currently serving this subdivision. The project will improve the longevity of the wastewater system in that community as well as assure compliance with the EPA mandated conversion.
Project Location:	The proposed project is located within the Kailua-Kona community, Keahuolu Ahupua'a, North Kona District of the Island of Hawai'i.
Land Ownership:	The Sewer collection system improvements would predominately occur within the rights-of-way of existing County roadway.
Total Land Area:	51.6 acres
Tax Map Key:	There are no TMK numbers for the County roadways right-of-way which improvements are planned. TMK plat numbers for privately owned parcels to be serviced by the new sewer collection and treatment systems are identified below: Tax Map Key parcels (3) 7-04-011, -012, and -013
State Land Use:	Urban
County Zoning:	Single Family Residential, RS-15
SMA Designation:	Not within the County's Special Management Area.

## **1.2 PURPOSE FOR ENVIRONMENTAL ASSESSMENT**

The Queen Lili'uokalani Village (QLV) Subdivision LCC Conversion Project will involve the use of County funds and property (County roadways) for the construction of proposed sewer collection system improvements. As a result, this project is subject to the environmental documentation requirements prescribed under Chapter 343, Environmental Impact Statements, Hawai'i Revised Statutes (HRS) and Title 11, Chapter 200 (Environmental Impact Statement Rules) of the State Department of Health's Administrative Rules (HAR).

This Final Environmental Assessment (Final EA) was subsequently prepared to address the probable impacts on the surrounding environment resulting from the proposed sewer improvements within the QLV subdivision. This document was prepared in conformance to the regulatory process and documentation requirements prescribed under Chapter 343, HRS, and Title 11, Chapter 200, HAR.

Hawai'i County DEM will serve as the Proposing Agency for this project. This project subsequently involves an "Agency Action" being undertaken by this department under the State's environmental regulations. As a result, the County DEM will serve as the "Approving Agency" for this Environmental Assessment. A Negative Declaration, also referred to as a Finding of No Significant Impact (FONSI), is warranted for this project.

## **1.3 CLEAN WATER STATE REVOLVING FUND PROGRAM**

This project may be funded by federal funds through the State of Hawaii's Clean Water State Revolving Fund (SRF) Program which would constitute a federal action, and will require the project to meet all National Environmental Policy Act (NEPA) and Hawai'i SRF program requirements.

### **Program Background**

The Federal Water Quality Act of 1987 created the State Revolving Fund Loan Program, commonly known as the SRF. This federal act authorized low interest loans for the construction of publicly-owned wastewater treatment works, for implementation of a non-point source pollution control management program, and for implementation of an estuary conservation and management program (DOH, 2005).

The State Department of Health (DOH), Environmental Management Division, Wastewater Branch administers the statewide engineering and financial functions relating to water pollution control, municipal and private wastewater treatment works program, and individual wastewater systems program. This branch is responsible for the overall management and implementation of the Clean Water State Revolving Fund (CWSRF) Program. This CWSRF Program assists both County and State agencies by providing low interest loans to construct, modify or rehabilitate point source and non-point source water pollution control projects necessary to prevent contamination of groundwater and coastal water resources, and to

protect and promote the health, safety and welfare of the citizens of the State of Hawai'i (EMD, no date).

Sources of point and non-point source pollution are many and can consist of several categories. As a result, pollution control projects such as the QLV LCC Conversion project address eliminating these pollution sources and therefore are eligible for CWSRF funding.

### **Environmental Assessment Documents (EAD) Compliance**

The State DOH oversees the environmental review process for all SRF proposed projects so that they are in compliance with all State and Federal requirements. Under the CWSRF Program requirements, Environmental Assessment Documents (EAD's) are required to provide an assessment of the impact of a proposed project on the local environment. These EAD's consist of an Environmental Assessment, the EA Checklist, and a Certification form.

Under program requirements, the EAD's need to address various criteria which are: 1) OEQC criteria related to environmental documents; 2) State environmental review process (SERP) criteria; and 3) Federal criteria which consist of various Federal "cross-cutting" authorities. Following the procedures and requirements of Chapters 343, HRS and Title 11, Chapter 200, HAR address the OEQC and SERP criteria (DOH, 2005). This Draft EA thus includes the information and forms to address these criteria associated with these EAD's in compliance with these CWSRF Program requirements.

## **1.4 LAND USE CLASSIFICATIONS AND DESIGNATIONS**

Information on the existing state and county land use designations associated with the Queen Lili'uokalani Village LCC and surrounding areas are described below. Discussion of the project's consistency with these land use designations and applicable regulations are explained later in this document.

### **STATE LAND USE DISTRICT**

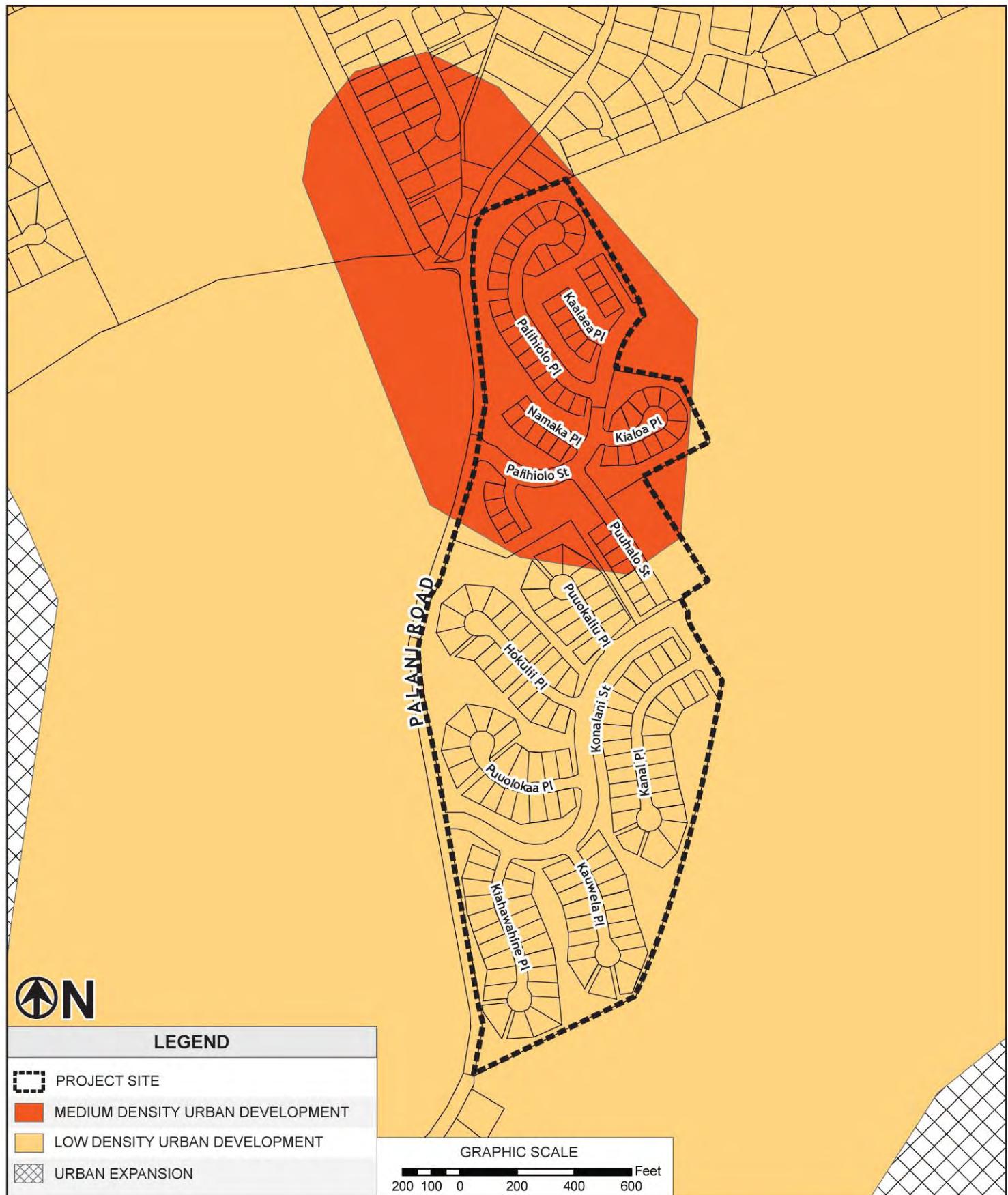
Under Chapter 205, HRS, all lands in the State of Hawai'i are classified into four major land use districts (State Land Use Districts): Urban, Rural, Agricultural, and Conservation. Permitted uses within the these districts are prescribed under Title 13, Chapter 205 (Land Use Commission), HRS, and the State Land Use Commission's Administrative Rules prescribed under Title 15, Subtitle 3, Chapter 15, HAR. Land uses within Urban Districts are governed by the ordinances or regulations of the county within which the urban district is situated.

The State Land Use Commission Land Use District Boundary Map for the Queen Lili'uokalani Village Subdivision indicates that the proposed sewer system improvements and service area along with the immediate surrounding areas would occur within properties designated as "Urban District".

**COUNTY OF HAWAI'I GENERAL PLAN LUPAG**

The County of Hawai'i's General Plan was updated in 2005, and adopted under Ordinance 05-69. This General Plan serves as a policy document for the long-range comprehensive development of the Island of Hawai'i. It is used to guide the pattern of future development in the County based upon long-term goals and the visions, values, and priorities important to the people of the County (County of Hawai'i, 2005). The updated Land Use Pattern Allocation Guide (LUPAG) Maps from this General Plan thus establish the future land use patterns for the County which includes the community of Kailua-Kona. Figure 1.4 shows the LUPAG land use designations for the QLV subdivision. The sewer improvements planned within the QLV subdivision will affect properties predominantly designated as "Medium Density Urban" land use.

Medium Density Urban designated areas are established for village and neighborhood commercial use and single-family and multi-family residential use and related functions. These urban centers and clusters provide physical, social, governmental and economic concentrations so that the total activities of the community can be more readily and easily conducted. Low Density Urban designated areas primarily residential, with ancillary community and public uses, and neighborhood and convenience-type commercial uses; overall residential density may be up to six units per acre (County, 2005). The sewer improvements planned under this project would not conflict with the LUPAG designations for parcels being affected which also includes County roadways. Discussion of the project's consistency with the General Plan is provided later in this document.



**LAND USE PATTERN ALLOCATION GUIDE MAP**

*Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion*  
County of Hawaii, Department of Environmental Management, Technical Services Section

**Figure 1.4**

Source:  
County of Hawaii, Planning Dept.  
(2005)



### **COUNTY OF HAWAI‘I ZONING DISTRICT**

The Zoning Code for the County is prescribed under Chapter 25 of the Hawai‘i County Code 1983 (2005 Edition). This Zoning Code is applied and administered within the framework of the General Plan, and for the purpose of promoting health, safety, morals, or the general welfare of the County.

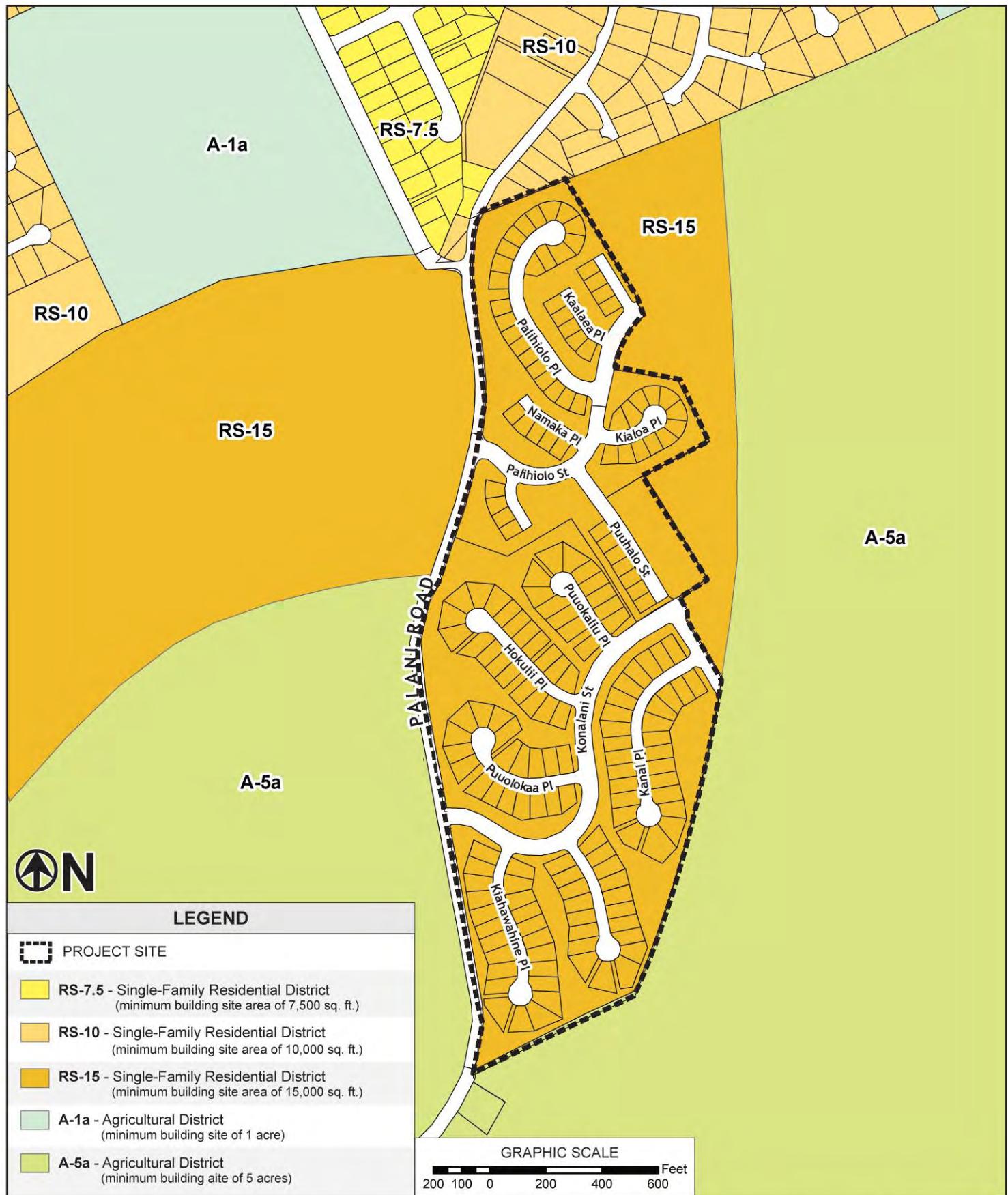
Under the Zoning Code, various zoning districts are established which regulate the type of development and permitted uses of property, and are depicted on zoning district maps. The County’s Zoning Districts for the QLV is designated as a Single-Family Residential District, 15,000 square feet minimum lot size (RS-15) (see figure 1.5). The Single-Family Residential District provides for lower or low and medium density residential use, for urban and suburban family life. The QLV was an “experimental” affordable residential housing project, and although the zoning is designated as RS-15, the lots are considered non-conforming because they range in size from 3,500 to 10,177 square feet, less than the minimum 15,000 square foot required by the Zoning Code.

This project would be consistent with the County’s Zoning Code because it involves a government function for public benefit by providing improved and more reliable sewer collection service to the community. Such use is also permitted in any zoning district. Greater discussion of the project’s consistency with the Zoning Code is provided in Chapter 7.

### **SPECIAL MANAGEMENT AREA**

Under Chapter 205A (Coastal Zone Management), HRS, the County is given authorization to regulate land uses located within the established Special Management Area (SMA) for the Island of Hawai‘i. Review of the County of Hawai‘i’s Special Management Area map for the North Kona district determined that the QLV project area is outside of the SMA boundary. The SMA boundary near these communities generally runs along the coastline up to about 1,000 feet inland.

The improvements planned are situated well inland of this boundary. As a result, this project is not subject to the County of Hawai‘i assessment and processing procedures established under the Planning Commission’s Rule 9, Special Management Area.



**COUNTY OF HAWAII ZONING MAP**

*Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion*  
County of Hawaii, Department of Environmental Management, Technical Services Section

**Figure 1.5**

Source:  
County of Hawaii, Planning Dept.  
(2005)



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## **CHAPTER 2: PROJECT DESCRIPTION**

### **2.1 GENERAL PROJECT LOCATION**

The Queen Lili'uokalani Village Subdivision LLC Conversion Project is located within the Kailua-Kona community on the western side of the Island of Hawai'i in the North Kona District. This District extends from Anaeho'omalu Bay on the north boundary to Kealakekua on the southern boundary to near the summit of Mauna Loa on the east. The North Kona District is situated between the South Kohala District on its northern border and the South Kona District on its southern border. The project area is situated about 2 miles mauka of the Queen Ka'ahumanu Highway. Palani Road runs along the western border of the subdivision.

The QLV subdivision is bordered by the Palani Road on the west. Palani Road is the end section of Highway 190, intersecting with Highway 180 on the north (Māmalahoa Highway) and Highways 11 and 19 on the south end. Palani Road is a main thoroughfare providing vehicular access into the main business district of Kailua-Kona. The QLV subdivision encompasses an area of about 51.6 acres near the center of the western portion North Kona district. There are 182 residential properties and a homeowners' association parcel within QLV. The project area can be found on Tax Map Key (TMK) plats (3) 7-4-11, (3) 7-4-12, and (3) 7-4-13 (see Figure 2.1).

#### **2.1.1 Surrounding Land Use**

The existing settlement pattern in the North Kona district is agricultural and residential, with more density populated areas closest to the ocean. The areas surrounding the QLV subdivision are designated as Important Agricultural and Medium Density Urban land use classifications. The Kona Macadamia Acres subdivision is immediately adjacent and west of QLV. To the north is Hale Palani and Kailua Heights subdivision and Jacaranda Acres. To the east is open land. Downtown Kailua-Kona is located about 2.5 miles makai of the project site.

The surrounding land uses in the North Kona District involve activities that generally serve the tourist and agricultural industries. Currently, there are about 4,080 visitor units including hotels, resort condominiums, bed and breakfast operations and other transient units. North Kona accounts for 45 percent of the total hotel rooms on the Island of Hawai'i.

Besides tourism, North Kona also has a significant agricultural industry with the production of Kona coffee, fruits, macadamia nuts, and vegetables, particularly tomatoes. Timber and fishing are small industries in Kona. The Kailua-Kona Wharf is considered a major center for big game fishing and annual international tournaments. Additionally, a small boat harbor at Honokohau has been constructed just outside of Kailua Village to complement the big game fishing. The Old Kailua Industrial Area and Kaloko Industrial Area provide the largest concentration of industrial activities within West Hawai'i. Kona is considered the government, commercial, and industrial center of West Hawai'i.

### **2.1.2 Existing Wastewater Collection and Disposal System**

Historically, the primary methods of wastewater collection and disposal within the State of Hawai'i included either individual wastewater systems (IWS) or large capacity cesspools (LCC). The IWS consist of privately owned cesspools or small septic disposal systems to service single-family residential units while LCC serves more than one single-family unit or public facilities with the capacity to serve 20 or more people per day. Large cesspools were among the earlier forms of community sewage collection and disposal systems.

Currently, the only properties south of Queen Kaahumanu Highway, about 1.5 miles south of QLV, are serviced by sanitary collection system, that ultimately discharges into the Kealakehe Wastewater Treatment Plant (WWTP). The WWTP was completed in 1992 with a design capacity of 5.3 million gallons per day. A sewer master plan recently prepared for North Kona Expansion area has included QLV into its filter service area for Kealakehe WWTP, located about 5 miles west of the Study area.



**TAX MAP KEY BOUNDARIES, (TMK) (3) 7-4-11, 12, AND 13 - EXISTING LCC LOCATIONS**

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion  
County of Hawaii, Department of Environmental Management, Technical Services Section

**Figure 2.1**

Source:  
(GIS Data) State Office of Planning  
SSFM International Inc.



## **2.2 PROJECT AREA CONDITIONS**

### **2.2.1 Improvement Area and Ownership Information**

The QLV subdivision wastewater system consists of eighteen (18) EPA-registered Large Capacity Cesspools (LCCs) and twelve (12) unregistered cesspools for a total of 30 cesspools within its boundary. Figure 2.1 shows the existing system for the community in the QLV subdivision. It is not known if all or any of these 12 additional cesspools are LCCs. For the most part, these 12 additional cesspools are located nearby one of the existing 18 LCCs.

The residential lots within the subdivision are privately owned; the homeowner's association has ownership of the common lots. The population of QLV is estimated assuming 182 existing homes and an average of 2.69 persons per household (2000, U.S. Census), for a total of approximately 490 persons.

The majority of property affected by the construction of sewer improvements planned will occur within County-owned roadways. However, there are some privately-owned parcels that would also be used for improvements. Information associated with these roadways and properties are identified below.

The following fourteen (14) roadways would be used for construction of new sewer:

Palani Road	Konalani Street
Kiahawahine Place	Hokulii Place
Kauwela Place	Puuokaliu Place
Kanal Place	Namaka Place
Puuolokea Place	Kialoa Place
Palihiolo Street	Palihiolo Place
Puuhalo Street	Kaalaea Place

These roads are all under the jurisdiction of the County of Hawai'i, and generally consist of two-lane roadways either striped or unmarked which serve the residential areas of this community. With the exception of Palani Road, these roadways have unpaved shoulders and have no paved sidewalks. Open grassed areas present along some roads are frequently used for parking. Figure 2.1 showed the location of these roadways. Appendix A includes several photos of the project area roadways.

## **2.2.2 Project Service Area**

This project is intended to provide improved wastewater service to the QLV community. Consequently, the proposed sewer system improvements are intended to service residential properties and the common homeowners' association parcel within these communities, and no other uses will be serviced with these improvements. The off-site collection alternatives are addressed in the North Kona Expansion area Sewer Master Plan (June 2007).

## **2.2.3 Background on Existing Sewer Collection System**

The County of Hawai'i constructed LCC's as a low-cost wastewater solution and pipeline easements were granted by the Queen Lili'uokalani Trust (QLT) to the County. In the original agreement with the QLT, the County agreed to construct, reconstruct, install, maintain, operate, repair, and remove underground sewer pipelines, manholes, and other equipment for the subdivision. Some of the engineering design issues associated with the QLV subdivision wastewater system include:

- Over time, permanent or semi-permanent structures have been constructed over the easements;
- The County is unaware of the operating condition of the existing sewer lines; and
- The QLV Homeowner's Association has had an historic interest in subdividing and consolidating the common areas where many of the LCCs were installed.

## **2.3 PROJECT NEED AND OBJECTIVES**

### **2.3.1 Need for Project**

In 1998, the U.S. Environmental Protection Agency (EPA) promulgated regulations under 40 CFR 144.14 requiring the elimination of all large capacity "gang" cesspools presently used for wastewater disposal. Under these regulations, such existing LCCs need to be closed by April 5, 2005. Consequently, the County of Hawai'i is required to eliminate all large capacity "gang" cesspools presently used for wastewater disposal under these regulations issued by the U.S. EPA. However, due to the quantity of LCCs that presently exist throughout Hawai'i County, EPA officials and County officials have worked together to reach an agreement that allot the County a longer timetable to close these LCCs. Specifically, the County of Hawai'i, Department of Environmental Management has a Consent Agreement and Final Order (CAFO) with the EPA to close all LCCs in the QLV subdivision by June 1, 2010 or be subject to significant fines.

LCCs were banned by the EPA because of the quantity of untreated sewage is disposed into the cesspools. This disposal method raises public health and environmental concerns because they allow untreated sewage to percolate directly into the soil and ground water. This increases the likelihood of releasing disease causing pathogens and other contaminants, such as nitrate, into ground water aquifers, streams, and eventually the ocean. Consequently, improved treatment methods for sewage are needed to mitigate effects on the environment.

### **Background on Large Capacity Cesspools**

Large capacity cesspools are defined as a cesspool serving multiple (two or more) dwellings, a community or regional development, or any non-single-family residential building or business that generate sanitary wastes, containing human excreta from 20 or more persons per day. Sanitary waste, also referred to as domestic waste, consists of liquids or solid wastes originating from human activities, such as wastes collected from toilets, showers, washbasins, sinks used for cleaning domestic areas, food preparation, clothes or dishwashing operations (DOH, August 2004).

A cesspool is considered an LCC if it receives sanitary waste from multiple dwellings. Examples of this include a cesspool serving a duplex, an apartment building or townhouse development, a residential condominium, or multiple single-family dwellings clustered together. A cesspool serving a non-residential building is considered an LCC if it receives sanitary waste containing human excreta from 20 or more persons in a single day. Examples of this includes schools, churches, visitor centers, golf course clubhouses, park restroom facilities, retail businesses, restaurants or food establishments, hotels, and commercial or industrial uses.

### **Queen Lili'uokalani Village LCCs**

The QLV subdivision was developed in the early 1970's by a private developer and the Queen Lili'uokalani Trust (QLT) in cooperation with federal, state, and county agencies as an experimental affordable housing project. Normal subdivision, roadway, and other codes were modified to see if there would be a cost savings. The QLT leased the lots to individual families and the common areas to the homeowners' association. A total of 182 residential lots are provided within this subdivision. The wastewater systems constructed and serving this community for the last 35 years consists of sewer lines for collection and LCCs for disposal that have been maintained and operated by County of Hawai'i. The County thus needs to develop a plan to address these issues affecting these communities given the EPA requirements for closures of LCCs.

#### **2.3.2      Project Objectives**

The County DEM has subsequently initiated this proposed sewer system project due to the EPA mandate to close existing LCCs. This project is intended to address the closure of these LCCs within the QLV community, and to construct a new sewer collection system. The County has consulted with the community to properly address and resolve improvements needed.

The objective of this project is to service those properties that are currently serviced by the QLV existing sewer system. The County is subsequently proposing to replace the existing LCCs with a new sewer collection system located within the public rights-of-way and new sewer easement.

## **2.4 DESCRIPTION OF PROJECT**

This section discusses the proposed wastewater collection system improvements that is planned to service the proposed areas within the QLV community. Design criteria and guidelines were used to estimate projected flows from these service areas to size the collection system.

### **2.4.1 Project Design Criteria**

The design of the proposed sewer system improvements was based upon several guidelines and criteria. Based upon these criteria, alternatives were developed that were evaluated by the County DEM which resulted in the eventual selection of the proposed collection system improvements and disposal method.

The *Design Standards of the Department of Wastewater Management, Volume 1*, (July, 1993) of the Department of Wastewater Management, City and County of Honolulu, State of Hawai'i (henceforth referred to as C&C Standards) were used for the design of the wastewater collection system.

The design period used for the QLV community to address treatment of flows and the sizing of the collection system was 20 years (2026). The system's design was based on accommodating estimated flows from within QLV that may occur over the next 20 years.

None of the parcels within the project's service area or in the immediate vicinity were identified as future growth areas under the County *General Plan*'s LUPAG map for this district. It was thus assumed that each parcel within the study areas would retain its current zoning during the design period (20 years).

The future wastewater generation volumes were estimated from the state of Hawai'i HAR §11-62, and are based upon current zoning district and its land use. According to HAR §11-62, a typical three-bedroom residence produces wastewater volumes of approximately 750 gallons per day. The QLV service area includes 183 parcels including the homeowners' association parcel. Based on the Hawaii County Real Property Tax records, the estimated volumes were determined to be 141,500 gallons per day because not all residences were considered to be three-bedroom homes.

### **2.4.2 Overall Improvements Proposed**

Sewer collection system improvements will consist of constructing new sewer mains and laterals within the public roadway rights-of-way to serve designated areas within QLV.

The County will be responsible for the new sewer collection improvements, and will implement a maintenance program to continually inspect and monitor these systems in order to prevent system failures.

A new sewer collection system serving properties within QLV would consist of installing new gravity sewer mains within the right-of-way of several existing roadways and new sewer

easements. These sewer mains would be 8-inch lines and total about 13,590 lineal feet in length. In addition, plastic covers on new sewer manholes installed with this collection system is planned to be used to limit the amount of storm water inflow/infiltration into the system. Figure 2.2 shows the preliminary plans for these improvements.

Due to the existing topography of the service area, these sewer mains would generally gravity flow from the northern side of the area to the southern side. There would be one major gravity sewer collector main situated along Palani Road.

Sewer laterals (6-inch in diameter) would also be constructed from these sewer mains to the property lines of all parcels being served by this system. The design of these standard sewer laterals to each property would be in accordance with current County standards. Property owners will then be required to connect their existing plumbing from their residence or structure to the County's new sewer lateral provided. Each property owner would be responsible for installing and maintaining their connections to these sewer laterals.

Easements would be established within the County roadways utilized for the new sewer collection system constructed under this project. With this new collection system, the existing sewer line easements would be returned to the property owners. For portions of the collection system routed within privately-owned property, easements of approximately 15 feet in width for the sewer main will similarly be obtained from the owners.

#### **2.4.3 Development Schedule and Estimated Construction Costs**

Completion of the environmental review process is expected in the Fall of 2009. Finalization of design plans, obtaining ministerial permits, and completion of construction documents is thus expected by the end of 2009. Consequently, construction is expected to begin in late 2009/early 2010 and be completed within 1 year (end of 2010). No discretionary land use approvals would be required for this project. The estimated County construction costs for this sewer collection system is \$16.7 million. It is estimated that a typical connection for a residence to the sewer lateral being provided would be about \$3,500.

#### **2.4.4 Required Permits and Approvals**

##### **Federal Permits**

Coastal Zone Management Program

Federal Consistency Review (if Federal Funds are used)

##### **State of Hawai'i Permits**

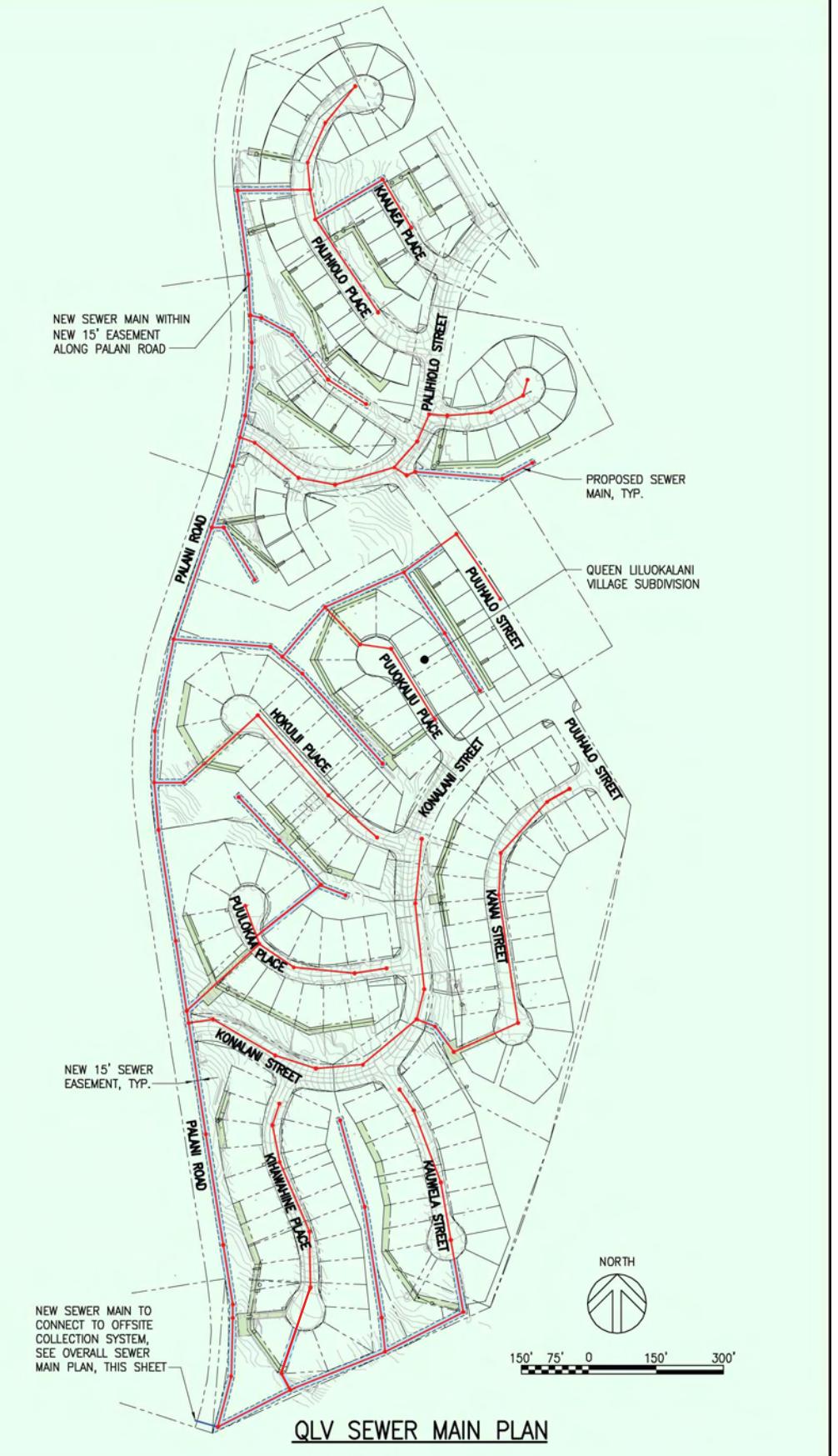
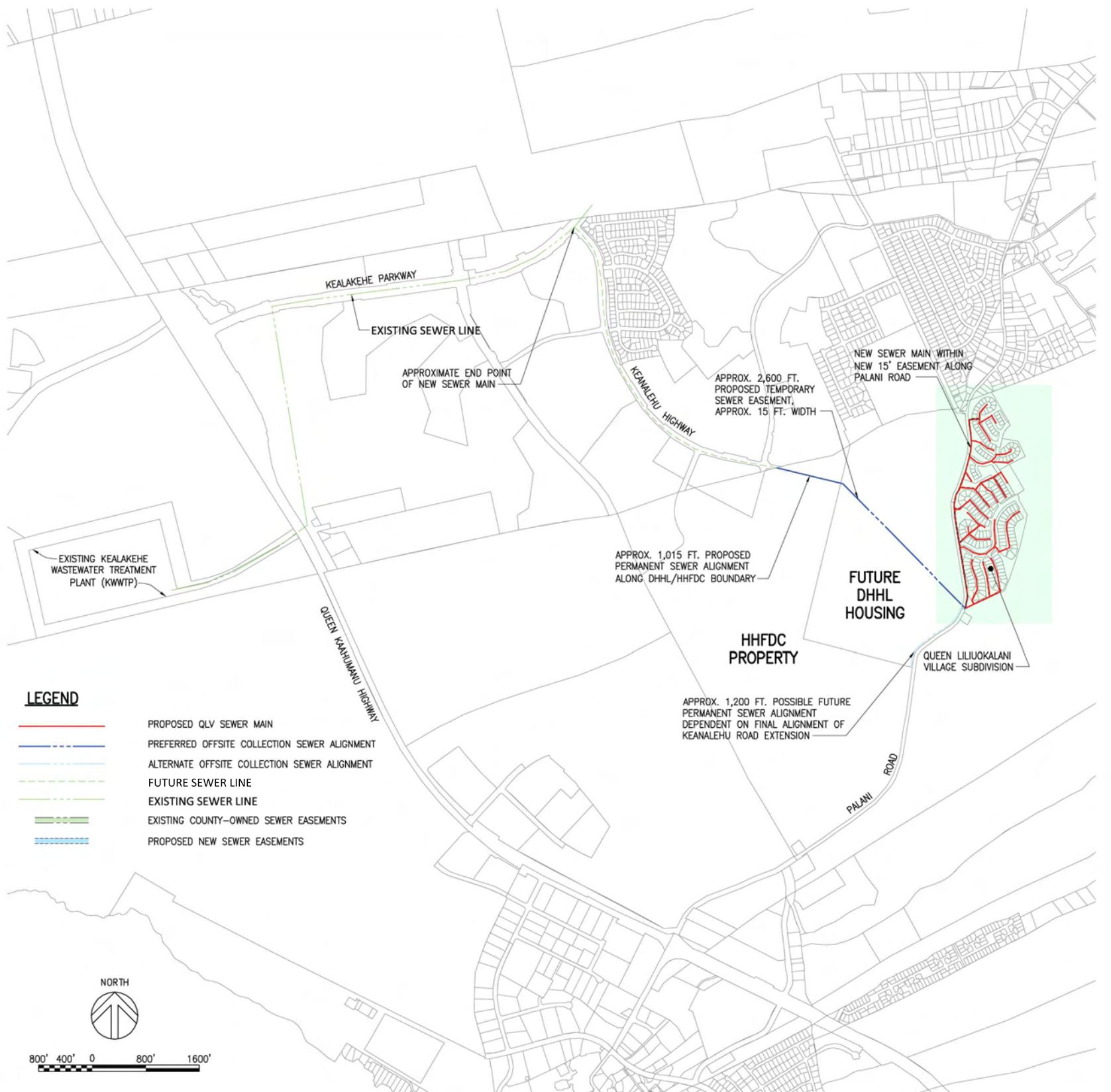
DOH Noise Variance (if required)

DOH NPDES Construction Storm Water Permits

HDOT Permit to transport oversized equipment and/or overweight load on State highways

##### **County of Hawai'i Approvals and Permits**

Ministerial Permits (Building Permit, Grading Permit, Work with Right-of Way Permit)



## PROPOSED SEWER MAIN

Figure 2.2

## 2.5 ALTERNATIVES CONSIDERED

This section discusses alternatives associated with the proposed project that were considered and evaluated by the County DEM. These alternatives include the “No Action Alternative” along with different collection system design alternatives serving the QLV subdivision. Some alternatives were subsequently eliminated from further consideration because they didn’t sufficiently meet the project need and objectives as compared to the improvements being proposed.

### 2.5.1 Criteria Used in Evaluating Alternatives

Various criteria were used in the evaluation of design alternatives developed for this project. The type of wastewater collection system that is most appropriate for the study area is dependent upon several factors. As a result, the following major criteria were identified and used in the evaluation of collection systems alternatives.

- Existing topography. The preferred sewer collection system should be gravity sewer lines to take advantage of the area’s topography, and to minimize construction and maintenance costs.
- Expected growth patterns of service area. Anticipated land use development and growth patterns within the proposed service areas were considered.
- Land acquisition. The County may need to acquire private land or obtain new utility easements associated with the proposed improvements. Thus, preferred sewer collection system alignments along with treatment and disposal improvements should minimize or eliminate the need for land acquisition or new utility easements.
- Initial construction costs. Initial construction costs were major factors considered in evaluating the preferred sewer collection system alignment.
- Future costs of operating and maintenance (O&M). The approximate future costs estimated for operations and maintenance associated with the system were considered in the evaluation process. The County DEM’s objective was to minimize the amount of future O&M costs.
- Reuse of existing cesspools as seepage pits. The State DOH allows existing cesspools to be used as a seepage pit for treated wastewater effluent subject to review and permitting. Thus, the project sponsors considered using cesspools as seepage pits which would also result in a reduction of construction and land acquisition costs.

### 2.5.2 No Action Alternative

The No Action Alternative would involve the County not proceeding with the implementation of sewer system improvements serving the QLV subdivision. This situation would not support the County’s effort to close all LCCs as mandated under the EPA regulations.

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It would also not support their effort to achieve this objective under the extended timetable permitted under the County’s agreement with EPA. A daily fine could be issued to the County by the EPA of up to \$32,500 per day which amounts to \$11,862,500 in fines per year. Such fines could also be made retroactive back to April 5, 2005 deadline under the 1998 EPA regulation. These fines would have a significant impact on the County’s fiscal condition and operations affecting the residents of the County of Hawai‘i.

This alternative would also conflict with the County’s prior consultations with the QLV community to properly address and resolve improvements needed for the closure of the LCCs and sewer system improvements. Based upon these consultations, the County has already developed a workable plan that would address the EPA mandate. The No Action Alternative would significantly conflict with the County’s efforts already expended to address these items.

The type of collection system that is most appropriate for the study area depends on several factors. The following criteria are the most important factors considered when the collection systems alternatives were developed.

### **2.5.3 Collection System Alternatives**

The following paragraphs present each proposed alternative. See the table below which compares the alternatives.

#### **Alternative 1 – Small Septic**

Alternative 1 proposes to keep intact and reuse the existing sewer collection lines and to avoid installing a significant amount of new sewer collection lines. This alternative proposes to install a greater number of septic tanks which range from 1,500 to 16,500 gallons. There are approximately 22 new septic tanks proposed for this alternative. The intent of this alternative will be to reuse as many of the existing large capacity cesspool as seepage pits. Systems which cannot reuse the existing LCCs will construct new leachfields. The new septic tanks will be required to be pumped by the County (or private contractors) periodically of the accumulated sludge.

These septic tanks are a temporary solution and there is limited area to construct this alternative within QLV. In the future, these septic tanks could be connected via additional new sewer lines to a collection system to be located within Palani Road right-of-way, which would convey wastewater to the Kealakehe WWTP.

#### **Alternative 2 – Large Septic**

Alternative 2 proposes to use larger septic tanks (5,250 to 17,250 gallons) to treat the wastewater. Because fewer septic tanks than Alternative 1 would be constructed, more collection lines will be necessary to collect and convey the wastewater to the large septic tanks. Approximately 10 new septic tanks would need to be constructed for this alternative. Both new leach fields and seepage pits will be used to dispose of the treated effluent. The new septic

tanks will be required to be pumped by the County (or contractors) periodically of the accumulated sludge.

These septic tanks are a temporary solution and would need to be located on property outside of QLV that is currently privately owned. In the future, these septic tanks could connect to the collection system to be located within Palani Road right-of-way, which would convey wastewater to the Kealakehe WWTP.

#### **Alternative 3 – Alternate Wastewater Treatment Units**

Because of the current density and developed nature of the subdivision, this alternative is proposed to limit the new land acquisition or easements required. This option attempts to use gravity sewer collection lines and sewer force mains within the road right-of-ways to collect the wastewater. The wastewater would then be sent to either an aerobic treatment unit (ATU) or membrane bioreactor treatment unit (MBR). These methods of processing and treating the wastewater need to be considered because the large septic tanks mentioned in Alternative 1 and 2 above have a maximum volume of 15,000 gallons/day (per HAR 11-62). However, these ATUs and MBR units are more of a permanent type of system and will require considerably more capital costs and operational and maintenance costs than the previous two options. It is estimated that three, County-owned treatment units will be required for this option. These treatment units would need to be located on property outside of QLV that is currently privately owned.

#### **Alternative 4 – Collection System to Kealakehe Wastewater Treatment Plant**

The option of collecting all the existing sewer laterals into several sewer mains and conveying the wastewater via new/existing sewer lines down to Kealakehe WWTP was considered. The County anticipates the need to implement improvements to its municipal sewer system. Such improvements include assessing its gravity sewers, force mains, manholes, and pump stations serving the Kealakehe WWTP. As a result, the County DEM recently completed its North Kona Sewer Master Plan Report (June 2007). Although this alternative has high construction costs, it is determined to be the preferred alternative. There are four components to Alternative 4:

1. Design and construct gravity-fed sewer mains within County road rights-of-way and new and existing sewer easements within the QLV subdivision as well as gravity-fed sewer mains within the rights-of-way of other existing and proposed County roads outside of QLV. Approximately 13,590 linear feet of 8-inch gravity collector sewer mains will be constructed within the QLV subdivision.
  - a. Outside of QLV, sewer mains will be constructed to allow a connection to the Kealakehe WWTP as proposed in the Sewer Master Plan as follows:
    - i. 2,600 lineal feet through future DHHL Housing

- ii. 1,015 lineal feet along DHHL/HHFDC Boundary
- b. A total of approximately 3,615 LF of sewer lines will need to be constructed outside of QLV. The Keanalehu Road Extension is currently in preliminary design. Thus, if this alternative is selected, the County of Hawai'i DEM-TSS will have to coordinate with the Department of Public Works-Engineering to ensure that a sewer line is installed within the road extension at the time of construction. At the intersection of Keanalehu Highway and Kealakehe Parkway, the new sewer main will connect to the planned sewer line that is part of the North Kona Improvement District sewer master plan. The wastewater will then be directed to the existing Kealakehe Wastewater Treatment Plant (KWWTP) for treatment and disposal. A preliminary report from Brown and Caldwell (DEM-TSS design consultant for the KWWTP Expansion) has been prepared. This report indicates the increased capacity of KWWTP by modifying the plant's treatment method.
- 2. Design and construct sewer laterals from the sewer trunk lines to each parcel. Each individual property owner would be required to connect a lateral line to the County's new sewer trunk line. The wastewater would flow by gravity (or by a pump system in the event the residence's plumbing pipes are located below the invert elevation of the sewer main) from the home to the County-owned sewer line. Each homeowner would be responsible for owning and maintaining its sewer laterals, and pumps if applicable, within private property. The County would not be responsible for maintaining sewer systems located on private property.
- 3. Set up and obtain new sewer easements. The County would set up new sewer easements where wastewater from certain parcels needs to be routed either through adjacent parcels or through the open spaces owned by the QLV Home Owners Association in order to reach the new sewer mains. This would avoid the installation sewer lift (pump) stations.
- 4. Utilize existing sewer easements where necessary. Existing sewer easements will be used for the same purpose as the new sewer easements, as discussed in number 3 above.

**Table 2.1 Comparison of Sewer Alternatives**

	<b>Alternative 1 — Small Septic</b>	<b>Alternative 2 – Large Septic</b>	<b>Alternative 3 — Alternate Wastewater Treatment Units</b>	<b>Alternative 4 – New Sewer Connecting to Main along Palani Road</b>
Approximate Length (lineal feet) of New Gravity Sewers	800	3,400	4,000	13,590
Approximate Length (lineal feet) of New County Gravity Sewers outside of QLV				3,615
Approximate Length (lineal feet) of New Sewer Force mains	0	0	800	0
Number of Proposed County-Owned Septic Tanks	22 (see calcs for sizes)	10 (see calcs for sizes)	0	0
Number of Proposed County-Owned Treatment Units	0	0	3	0
Approximate area (acres) of New Utility Easements (assume 15' wide easement)	1.0	1.7	0.98	0.61
Approximate area (acres) Land Acquisition	0	0	TBD	0
Approximate Initial Construction Cost	\$1,656,000	\$2,790,000	\$3,308,400 plus land acquisition for the pump stations	\$16,700,000
Does Alternative Service all of the QLV subdivision?	Yes	Yes	Yes	Yes

## **2.5.4 Preferred Collection System**

Alternative 4 - New Sewer Connecting to Main along Palani Road would be the preferred collection system because it provides a permanent solution to the closing of the large capacity cesspools. The wastewater from QLV would be directed to the Kealakehe WWTP located approximately 5 miles west of the study area. The expansion capacity of the Kealakehe WWTP is being studied separately from this report.

Alternative 4 is the recommended wastewater collection system because this alternative provides a standard sewer lateral to each property in accordance with current County standards. In addition, Alternative 4 allows the use of an existing regional treatment plant instead of one dedicated to QLV only (Alternative 3), which would be less cost-efficient for the County.

Alternative 1 – Small Septic Tanks is not recommended, because these small septic tanks are a temporary solution and there is limited area to construct this alternative within QLV. In addition, most of the existing LCCs cannot be reused as leachfields and new leachfields located outside of QLV on property that is currently privately owned would need to be constructed. The new septic tanks will be required to be pumped by the County (or private contractors) periodically of the accumulated sludge.

Alternative 2 – Large Septic Tanks is not recommended because these large septic tanks are a temporary solution and new land would need to be acquired. In addition, the tanks would require regular pumping. The effectiveness of the Large Septic Tanks would depend on the QLV residents' proper consideration of the items and substances that they dispose of down their drains. And, the County would need to acquire land from adjacent, private property owners.

Alternative 3 - Alternate Wastewater Treatment Unit is not recommended because alternative treatment is a temporary solution and new land would need to be acquired. In addition, these systems require high costs for the County to maintain. For small communities, it is difficult to calibrate the cycle times for these units. Post equalization may be required where more treatment is needed. Sludge must be disposed of frequently. Each unit requires a treatment plant operator. There are additional permitting requirements. Land acquisition will be required.

No Action Alternatives - Doing nothing is inadvisable due to the liability associated with taking no corrective action to close the existing LCC's out of compliance with EPA requirements.

## CHAPTER 3: PHYSICAL AND BIOLOGICAL ENVIRONMENT

This chapter describes the surrounding environment in the vicinity of the project. The probable environmental impacts associated with the construction and operation of the cesspool conversion improvements are discussed, and mitigative measures are identified if necessary.

### 3.1 CLIMATE, TOPOGRAPHY, SOILS, GEOLOGY, AND GEOLOGIC HAZARDS

#### Climate

Climate on the Island of Hawai'i, as well as within the State of Hawai'i, can be characterized as having low day-to-day and month-to-month variability. Differences in the climates of various areas are generally attributable to the island's geologic formation and topography creating miniature ecosystems ranging from tropical rain forests to dryer plains along with corresponding differences in temperature, humidity, wind, and rainfall over short distances (Dept. of Geography 1998). The entire state of Hawai'i lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east of the islands. Areas along the eastern coasts of the islands are particularly affected by the trade winds and are usually well-ventilated nearly year round.

Throughout the Hawaiian Islands, summer is the drier season near the lowland coastal areas, except on the Kona Coast. Near the Kona Coast of the Island of Hawai'i, summer rainfall exceeds winter rainfall with February being the driest month and September the wettest. There is a marked diurnal wind regime, with well-developed and reliable land and sea breezes, especially in the summer. Summer is also the season with a high frequency of late afternoon or early evening showers. Conditions on the Kona Coast are somewhat warmer and decidedly drier than in windward locations of the island.

Temperatures in the Kailua-Kona area are very moderate with average daily minimum and maximum temperatures ranging from 61.3 degrees Fahrenheit (F) to 77.9 degrees F, as measured at the Kainaliu weather station located approximately 10 miles south of the QLV subdivision (Western Regional Climate Center 2005). Rainfall averages 63.08 inches per year. The Kailua-Kona International Airport located approximately 6 miles north of the QLV subdivision recorded an annual minimum and maximum temperature of 66.9 to 82.7 degrees F. The average total precipitation at the airport is 24.00 inches per year. The mean annual wind speed at the airport is 8.3 miles per hour (mph), and usually varies between approximately 4 and 12 mph during the day.

## **Topography**

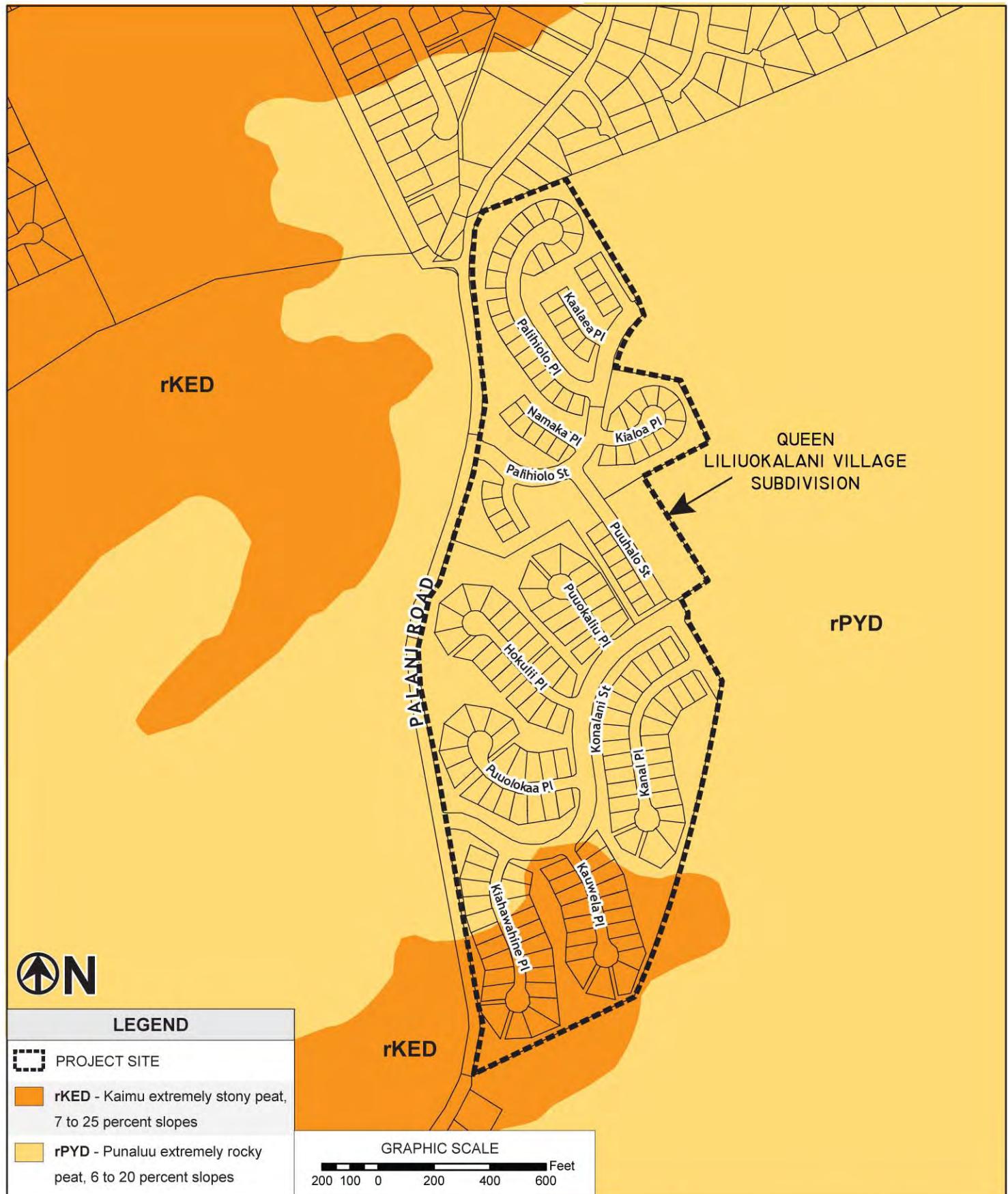
The QLV subdivision is positioned within the Keahuolu Ahupua'a which generally runs in an east-west direction. It covers an area extending from the Pacific Ocean at Kaiwi Point in a westerly (mauka) direction to an approximate elevation of 4,000 feet then southerly to the Waiaha Stream, and then easterly (makai) to Kailua-Kona town. The watershed of Waiaha Stream extends from sea-level to the top of Hualalai Mountain – a dormant volcano, which rises 8,271 feet above mean sea level (msl).

The land within the QLV subdivision slopes generally from northeast to southwest at approximately six to ten percent. The distance between the ocean shoreline and project area is approximately 2 miles. Elevations of the project site vary between 600 and 1,000 feet above msl.

## **Soils**

As indicated in the Soil Survey of Island of Hawai'i (SCS, 1973) the QLV subdivision is situated on land consisting of the Kaimu and Punaluu Series. The soil in the northern ¾ of the subdivision is classified at rPYD or Punaluu extremely rocky peat, 6 to 20 percent slopes. Rock outcrops occupy 40 to 50 percent of the surface. The surface layer is back peat about 4 inches thick, underlain by Pahoehoe lava bedrock. The soil is medium acidic. The peat is rapidly permeable, and the Pahoehoe lava is very slowly permeable, although water moves rapidly through the cracks. Runoff is slow and the erosion hazard is slight. Roots are matted over the Pahoehoe lava. The remaining southern ¼ of the subdivision is on soil classified as rKED. The profile shows the surface layer is very dark brown extremely stony peat about 3 inches thick. It is underlain by fragmental A'a lava. This soil is neutral in pH. Permeability is rapid, runoff is slow, and the erosion hazard is slight.

Figure 3.1 graphically shows the soil association with the QLV subdivision. Construction of the new sewer system will result in some soil erosion. Mitigation measures for reducing impacts to soil resources are the same as that described in the hydrologic resources section.



HAWAII COUNTY SOIL SURVEY

*Queen Liliuokalani Village Subdivision Cesspool Conversion*  
County of Hawaii, Department of Environmental Management, Technical Services Section

Figure 3.1

Source:  
NRCS, Hawaii State Office



## **Geology**

The exposed lava flows in the Kailua-Kona community are due to the volcanic activity of the Hualalai Volcano. Hualalai is currently dormant, but considered volcanically active, having last erupted in 1801. The base of the Hualalai volcano is not exposed. Its volcanics are composed of post-shield stage lavas and pyrocalstics of alkalic basalt, rare hawaiite, the Waawaa Trachyte Member, and the Kona ash beds. The Hualalai volcanics are connected with the Mauna Loa's Kau basalt.

The lava flows associated with the Keauhou aquifer system (discussed further below in Section 3.1.2, Groundwater), are less than 5,000 years old. Due to higher rainfalls in the mauka areas, short and shallow stream valleys have been eroded into the surface of the volcano. The most prominent is the Waiaha Stream near Holualoa. Sediments in the region mainly consist of beach deposits and reworked tephra.

## **Earthquakes**

Earthquakes in the Hawaiian Islands are primarily associated with volcanic eruptions resulting from the inflation or shrinkage of magma reservoirs beneath which shift segments of the volcano. Although difficult to predict, an earthquake of sufficient magnitude causing structural or other property damage may occur in the future. Most of the earthquakes that have occurred in the past have been volcanic earthquakes causing little or no damage. The seismic risk classification of the Island of Hawai'i is Zone 4 Seismic Probability Rating (USGS 1997), which indicates a 10 percent chance of severe shaking in a 50-year interval. New construction could be impacted by seismic activity resulting in destruction and possible injury or loss of life.

The Island of Hawai'i experiences thousands of earthquakes each year; however, most are so small that they can only be detected by instruments. There are some strong enough to be felt, and a few cause minor to moderate damage. Earthquakes may occur before or during a volcanic eruption, or may result from the underground movement of magma that comes close to the surface. A few of the island's earthquakes are less directly related to volcanism. These originate in the zones of structural weakness at the base of the volcanoes or deep within the earth beneath the island.

Non-volcanic Hawaiian earthquakes reflect the long-term accumulation and release of lithospheric stresses, rather than short-term processes associated with the motion of magma before or during an eruption. The long-term stresses consist in part of stresses generated in the crust and mantle by the weight of the volcanic rock that composes the islands. In that sense, most Hawaiian earthquakes that are not directly associated with eruptions are nonetheless broadly related to volcanic activity.

The locations of larger damaging earthquakes of magnitude 6 or greater since 1868 on the

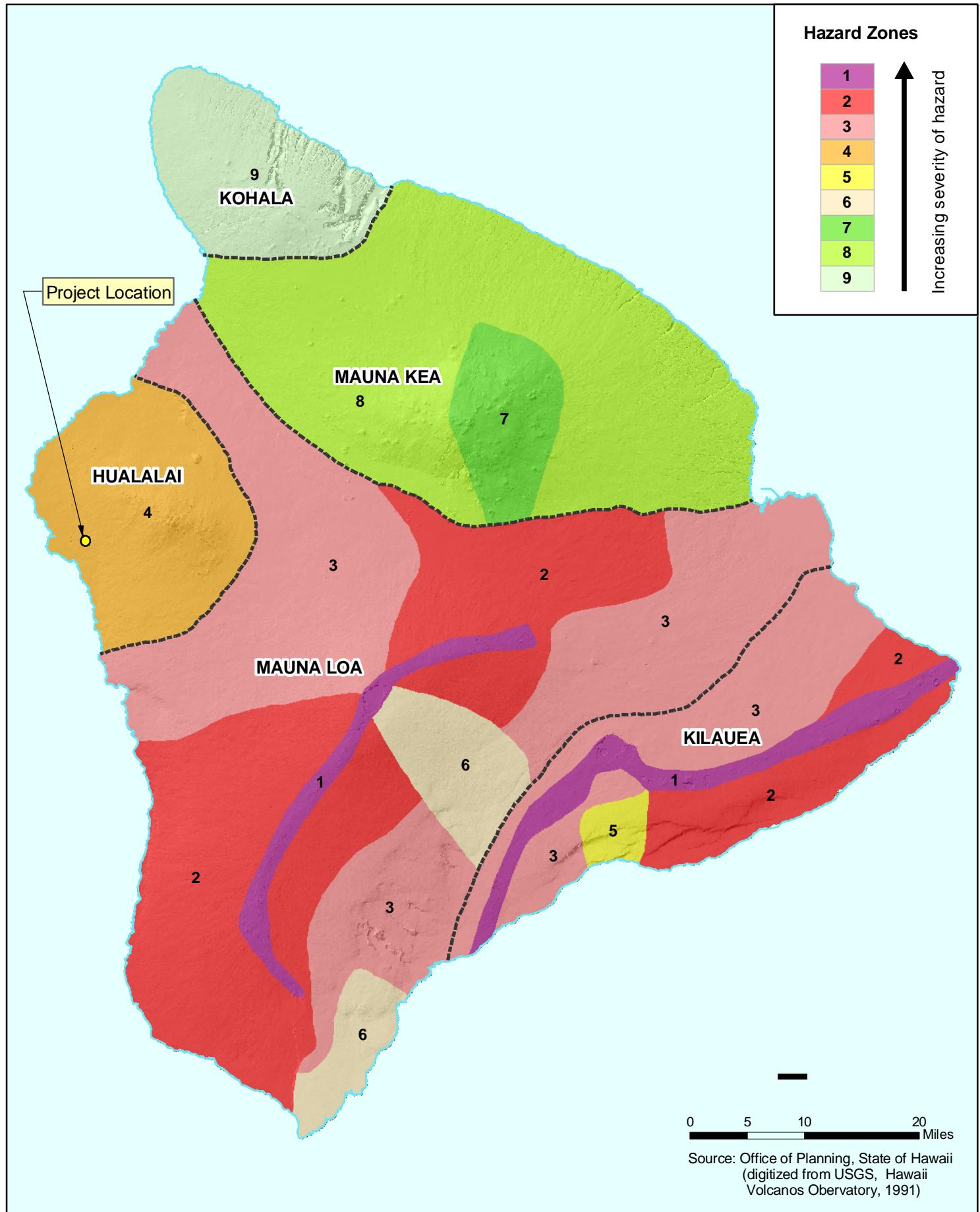
Island of Hawai'i have generally occurred on the southern half of the island primarily on the eastern end. The most recent large earthquake on this south flank occurred in June 1989 with a magnitude of 6.1. The largest earthquake in recent history occurred about 10 miles from the QLV subdivision on October 15, 2006, and registered a magnitude of 6.7. The October 15th earthquake is probably not directly related to future volcanic eruptions. A magnitude 6.9 tremor on August 21, 1951, damaged homes on the Kona coast and triggered numerous damaging landslides. The largest earthquake on the Island of Hawai'i on record was a magnitude 7.9 that occurred in 1868 near the south coast which triggered a tsunami that drowned 46 people and which spawned numerous landslides that resulted in 31 deaths.

### **Lava Flow Hazards**

Volcanic hazard zone maps developed for the Island of Hawai'i were revised by the U.S. Geological Survey in 1987. The current map divides this island into zones ranked from 1 through 9 based on the probability of coverage by lava flows, with Zone 1 having the most repeatedly active vents in historic time, and Zone 9 being least active. Lava flow risks are defined according to geology, seismic and volcanic activity history, and recent scientific predictions. Hazard zones from lava flows are based mainly on the location and frequency of both historic and prehistoric eruptions. Hazard zones also take into account larger topographic features of the volcanoes that will affect the distribution of lava flows.

Based upon this map, the QLV subdivision area was given a hazard zone rating of 4 which includes the entire Kailua-Kona town area. This hazard rating is for areas having a greater distance from active vents and topography making it less likely that flows will cover that area. There is a small percentage of the area that has been covered with lava in the past 10,000 years. Large eruptions of lava reach the ocean on average about 300 years. The percentage of Hualalai Mountain that has been subject to damage from lava in the last 750 years is less than 15 percent. Hualalai volcano is considered dormant, having last erupted in 1801 (USGS, 1997).

Property loss and economic devastation are the most frequent consequences of lava flow. Based on the probability of lava flows in Zone 4 there is a low concern for developing infrastructure in the QLV region. Figure 3.2 indicates the Volcanic Hazard Zones for the Island of Hawai'i.



SSFM International, Inc.  
501 Sumner Street, Suite 620  
Honolulu, Hawaii 96817

### QUEEN LILIUOKALANI VILLAGE VOLCANO HAZARD ZONE

SCALE: 1:700,000

DATE: September 2007

FIGURE  
**3.2**

### **Hurricane Hazards**

The three major elements that make a hurricane hazardous are: 1) strong winds and gusts, 2) large waves and storm surge, and 3) heavy rainfall (FEMA, 1993). Of these three, only strong winds and heavy rainfall could affect the project. The project site is not located along the shoreline and is at an elevation over 500 feet above msl. As a result, this location makes impacts from large waves and storm surge highly improbable.

Although unpredictable, the Island of Hawai'i has historically received less threat and damage from hurricanes as compared to the Island of Kaua'i. Only above-ground structures, if constructed with this project, would be affected by high winds of a hurricane passing close to the island.

### **Tsunami Inundation and Flooding**

The Flood Insurance Rate Map (FIRM), Community Panel Number 1551660707C (unprinted) for the project area was reviewed to determine existing floodways. Based upon this FIRM, the project site is not located within any designated floodway. The properties are designated Zone X which is an area determined to be outside the 500-year flood plain.

### **Brush Fires**

Humans are the number one cause of wildfires in the state and the numbers of fires are increasing. Hawai'i County has a Fire Prevention Bureau that works to prevent fires before they can cause injuries and property damage. The State Department of Land and Natural Resources, Division of Forestry and Wildlife has authority under Chapter 185, Hawai'i Revised Statutes, Land Fire Protection Law, for the prevention, pre-suppression, and suppression of wildfires for forest reserves. It also has the authority to cooperate with established fire control agencies for the protection of lands not within the Department's protection areas. This project will comply with all fire code requirements.

### **Impacts and Mitigation Measure**

In general, climate, seismic, and geologic conditions impose no constraints on the proposed action. There are no designated floodways within the QLV subdivision. The project site is also not located within a tsunami inundation area because it is located several miles away from the shoreline at an elevation of over 500 feet above msl.

The wastewater collection, treatment, and disposal systems will be designed in accordance with applicable building standards for Seismic Zone 4, as well as all applicable County Building Department requirements. In general, the risk of earthquakes should impose no major constraint on the project because the entire West Hawai'i region is subject to varying degrees of hazards. As required by County Code, all construction will conform to the appropriate Zone 4 Seismic Probability Rating and other local, state, or federal requirements.

## 3.2 HYDROLOGIC RESOURCES

### Groundwater

The occurrence of groundwater resources in the State of Hawai'i is highly variable in extent and type. Aquifers range from being limited in size to being very extensive, and from being isolated to being connected with other aquifers. Under the State's Water Resource Protection Plan, aquifers of the Island of Hawai'i have been classified under an aquifer coding system. This system is comprised of Aquifer Sectors, and then Aquifer Systems located within these sectors. An Aquifer Sector reflects an area with broad hydrogeological (subsurface) similarities while maintaining traditional hydrographic (surface), topographic and historical boundaries. The Aquifer System is an area within a sector that is more specifically defined by hydrogeologic continuity, particularly hydraulic connections among aquifer types and units. The Department of Water Supply of the County of Hawai'i operates under a Water Commission, a nine-member commission whose duty is to manage, control, and operate the Department and its properties.

The QLV subdivision is situated within the Hualalai Aquifer Sector and the Keauhou Aquifer System (80901). Groundwater aquifers of the Hualalai volcanics are known to extend at least 4 miles inland to the Mamalahoa Highway. Beyond about five miles, high level groundwater may only exist in one of the Hualalai rift zones.

The Kailua-Kona community is served by nine separate wells and one shaft. The bulk of the water for the area is the four Kahaluu wells that supply a total capacity of 14.9 million gallons per day (mgd). In 2005, the water usage for the community was about 8.5 mgd. The QLV subdivision is provided water from a 16-inch diameter pipeline located on the eastern (mauka) property boundary. The Department of Water Supply operates a 0.10 million gallon (MG) reservoir located adjacent to the southern property boundary of the QLV subdivision, next to Palani Road. It has plans to construct a new 1.0 MG reservoir adjacent to the existing 0.1MG tank. The new tank and associated 20-inch water mains run along the eastern and southern boundaries of QLV.

### Surface Water

There are no large fresh water surface streams or ponds on or near the QLV subdivision. The QLV subdivision is located about 2 miles from the Waiaha Stream, an intermittent stream that acts as the southern boundary of the Keahuolu Ahupua'a.

### Impacts and Mitigative Measures

The project will not directly or indirectly affect perennial or intermittent streams, wetlands, anchialine ponds, or other special aquatic sites. The proposed project will benefit the groundwater resources because the closure of the large capacity cesspools will eliminate the

direct discharge of untreated sanitary wastewater into groundwater resources.

To minimize water quality impacts and to protect the soil resources during construction, activities will conform to Chapter 10, Erosion and Sediment Control, Hawai'i County Code. A National Pollutant Discharge Elimination System (NPDES) construction site stormwater discharge permit must be obtained by the contractor before the project commences. The construction site stormwater NPDES permit will include completion of a Storm Water Pollution Prevention Plan (SWPPP) that identifies the best management practices (BMPs) that will be used during construction. These BMPs may include, but will not be limited to, the following:

- Revegetation using hydromulch or curlex-type of geotextile immediately following restoration;
- Prior to ground disturbance, installing silt fences, stormwater ponds, check dams, and other barriers;
- Regular inspection of sediment control devices and immediately after periods of heavy rainfall by trained personnel;
- Planting of a temporary cover crop;
- Installing covers over soil stockpiles;
- Installation of vehicle-entrance sediment barriers;
- Washing of vehicles in the designated wash area before they egress the project site;
- Regular inspection and maintenance of equipment to check for and stop leaking hoses and fittings; and
- Equipping the job site with spill kits and training personnel in its use along with proper waste disposal.

The new sewer lines will be hydrostatically tested in accordance with state standards, requiring an additional industrial process NPDES permit. This permit will specify conditions to minimize adverse impacts to adjacent areas, surface waters, and groundwater, by specifying the discharge location and water quality parameters. If no suitable location for discharge is available, the water will be hauled to an existing facility licensed to accept such waste.

### **3.3 BIOLOGICAL RESOURCES**

#### **Botanical Resources**

The vegetation in the Kailua-Kona region primarily consists of hardy dry land grasses and shrubs with a few scattered trees. Most of the area is dominated by an unremarkable array of grasses and weeds interspersed with a few common native species.

The project area and surrounding areas have a history of intense disturbance from urban development. The project site exists in an urbanized single family residential neighborhood. Because the construction area will be within existing paved streets and previously disturbed

areas, no federally listed endangered or threatened plants will be affected by the project.

### **Avifauna and Fauna**

No avian species listed as endangered, threatened, proposed, or as a candidate species by the U.S. fish and Wildlife Service or by the State of Hawai'i under its endangered species program are known to be present on the project site or in the immediate vicinity. The project site is not located within a State designated Natural Area Reserve. Furthermore, it is not within an area designated as habitat for the recovery of Hawaiian forest birds because these areas are generally situated above the 3,000-foot elevation. Avian species present on the project site would likely consist of introduced species such as various types of pigeons and doves, babblers, silveryeyes, saltators, and cardinals.

Vegetation on the project site consists predominantly of introduced species and weeds reflecting decades of disturbance as part of large scale residential developments. The project site does not contain wetlands or important forest reserves that are suitable for endangered, threatened, proposed, or candidate species.

The only mammals observed on the project site were domestic dogs (*Canis f. familiaris*). Mammals likely to be present in the area include feral or domestic cats (*Felis catus*), roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), Polynesian rat (*Rattus exulans hawaiensis*), and European house mouse (*Mus domesticus*), as well as small Indian mongoose (*Herpestes a. auropunctatus*). Most animal species in this part of Kona, including birds, mammals and invertebrates, are alien. However, two native endangered species, Hawaiian Hawks (*Buteo solitarius*) and Hawaiian hoary bats (*Lasiurus cinereus semotus*), are often seen in the area and in many other parts of the Island of Hawai'i. The native trees favored by Hawaiian Hawks for nesting are not present in the alien vegetation on the project site, but the habitat is suitable for both foraging and roosting for Hawaiian hoary bats, which are relatively indiscriminate.

### **Impacts and Mitigation Measure**

Existing mammalian species present are introduced alien species which compete with native species over the same natural resources. There is nothing unique about the project site or its vegetation. There are similar habitats in and around the Kailua-Kona area. Consequently, the project will not have significant impacts on native avian or mammalian resources present within the general project area. No adverse impacts to threatened or endangered plant species will occur due to the lack of ecosystems in the project area that would support these species. The erosion control features required for the construction will mitigate impacts to the existing vegetation.

The principal potential impact that the project poses to the endangered Hawaiian hoary bats is during the clearing and grubbing of the site. Female bats while caring for their young are extremely vulnerable to disturbance. While carrying young and feeding them the adult bats are

under immense stress, and move relatively slowly. To reduce the potential for interactions between clearing and grubbing activity and Hawaiian hoary bats, it recommended that clearing and grubbing not be undertaken during the period that bats are caring for young, which occurs between the months of June and August.

### 3.4 AIR QUALITY, NOISE, AND VISUAL RESOURCES

#### Air Quality

Ambient air quality standards (AAQS) have been established by both Federal and State governments that limit ambient concentrations of particulate matter less than 10 microns (PM<sub>10</sub>), sulfur dioxide, nitrogen dioxide, carbon monoxide (CO), ozone, and lead. In addition, a State standard has been established for hydrogen sulfide. State AAQS are more stringent than the comparable national limits (NAAQS) except for the standards for sulfur dioxide, particulate matter and lead, which are set at the same levels. A summary of both State and National AAQS is presented below in table 3.1.

**Table 3.1 Summary of National and State Ambient Air Quality Standards 1/**

Pollutant	Sampling Period	NAAQS Primary	NAAQS Secondary	State Standards
Particulate Matter Less Than 10 Microns (PM <sub>10</sub> )	Annual	50	50	50
	24-Hour	150	150	150
Sulfur Dioxide	Annual	80	n/a	80
	24-Hour	365	n/a	365
Nitrogen Dioxide	Annual	100	100	70
Carbon Monoxide	8-Hour	10	10	5
	1-Hour	40	40	10
Ozone	1-Hour	235	235	n/a
Hydrogen Sulfide	1-Hour	n/a	n/a	35
Lead	Quarter	1.5	1.5	1.5

1/ All concentrations in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) except for carbon monoxide which is in milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ).

Hawaii's standards are not divided into primary and secondary standards as are the National standards. Primary standards are intended to protect public health with an adequate margin of safety while secondary standards are intended to protect public welfare through the prevention of damage to soils, water, vegetation, man-made materials, animals, wildlife, visibility, climate, and economic values.

Air quality in Hawai'i is generally characterized as relatively clean and low in pollution. Northeast tradewinds that are predominant throughout the year typically carry emissions and other air pollutants from inland areas out toward the ocean. Air quality in the project area is believed to be relatively good, except for occasional impacts from upwind-sulfur dioxide

volcanic emissions that convert to a particulate-sulfate volcanic haze (vog) and localized traffic congestion, particularly in the Kailua-Kona community.

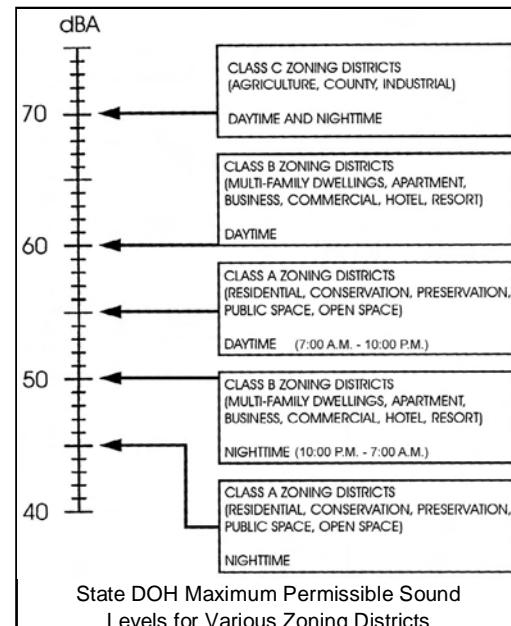
The State Department of Health (DOH) has monitoring stations on the Island of Hawai'i. The closest air quality monitoring station to the project area is located at Captain Cook, approximately 13 miles south of the QLV subdivision. Based upon the DOH 2004 air quality data for the Island of Hawai'i, there were no occurrences of PM10, PM2.5, ozone, sulfur dioxide, carbon monoxide, or hydrogen sulfide greater than the National and State standards (CAB, 2002).

### **Noise**

Potential noise impacts associated with this project would mainly be associated with short-term construction activities. Due to the nature of this project, no long-term noise impacts from project-related vehicular traffic or noise impacts from operation of collection system are anticipated.

The State DOH has established guidelines and standards for assessing environmental noise impacts, and has set noise limits as a function of land use. Three classes of zoning districts are defined which specify maximum permissible sound levels due to stationary noise sources such as air-conditioning units, exhaust systems, generators, compressors, pumps, etc. These levels are enforced for locations at or beyond the property line and shall not be exceeded for more than 10 percent of the time during any 20 minute period. The noise limits which apply are a function of the zoning and time of day (see exhibit below→).

Existing noise levels in the QLV project areas are generally associated with vehicular traffic along Palani Road and Mamalahoa Highway and general activities associated with residences such as children playing, radio or television noise, or voices. Most of the proposed collection system route will occur along residential roadways within these communities. There are also other uses that generate other sources of existing noise within these project areas. These include some commercial sites and schools. Existing noise generated from residential lots is not expected to currently generate considerable noise volumes that may exceed State DOH standards. Similarly, the schools and commercial sites should be meeting applicable noise limits.



Noise from construction activities are regulated under Title 11, Chapter 46 (Community

Noise Control) of the State DOH Administrative Rules. Under these regulations, the project area and immediate vicinity fall under the Class A zoning district. This district allows daytime (7 a.m. to 10 p.m.) maximum permissible sound levels of up to 55 dBA. Construction activities are not planned at night, so the night time noise level restriction should not be applicable.

#### Short-Term Noise Impacts from Construction Activities

Construction activities will temporarily increase ambient noise levels within the vicinity of the work area. The project would involve excavation, grading, and associated construction activities for the installation of a sewer collection system that will generate some audible noise. The actual noise levels would be dependent upon the construction methods and equipment employed by the contractor during each stage of the construction process. 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.

However, noise impacts from these activities would be relatively short-term and minor given the type and size of the sewer improvement being constructed by the County DEM. Construction equipment would be equipped with mufflers as required under DOH regulations. In cases where construction noise exceeds, or is expected to exceed, the maximum permissible noise level allowable to property line limits, a noise permit would be obtained from the DOH by the contractor to allow these activities.

This permit includes restrictions to mitigate potential noise impacts resulting from short-term construction activities. Such restrictions would be followed by the contractor. Specific permit restrictions included as conditions under this permit for construction activities are:

- No permit shall allow construction activities generating noise levels beyond the maximum permissible sound level at the property line before 7:00 a.m. and after 6:00 p.m. of the same day, Mondays through Fridays.
- No permit shall allow construction activities generating noise levels beyond the maximum permissible sound level at the property line before 9:00 a.m. and after 6:00 p.m. on Saturdays.
- No permit shall allow construction activities generating noise levels beyond the maximum permissible sound level at the property line on Sundays and holidays.

#### Visual Resources

Review of the County's draft General Plan's section on natural beauty (Planning Dept., 2005) identified the backdrop of Hualalai Volcano as the predominant visual attribute of the region. The steep green slopes can be viewed from the coast, and from higher elevations, spectacular vistas can be seen of the ocean, coastline and horizon.

### **Impacts and Mitigation Measures**

Other than minor impacts during construction due to fugitive dust and equipment, it is not anticipated that this project will affect the air quality or increase the current noise levels in the QLV subdivision or the surrounding Kailua-Kona community. The planned project will be below ground and there will not be impact to the visual resources of the area.

The contractor will be required as part of their contract with the County to include a dust control plan and to implement measures such as water sprinkling and site housekeeping measures to minimize dust.

Development would entail limited excavation, grading, compressors, vehicle and equipment engine operation, and construction of new infrastructure. These activities would generate noise exceeding 95 decibels at times, impacting nearby sensitive noise receptors. In cases where construction noise is expected to exceed the Department of Health's (DOH) "maximum permissible" property-line noise levels, contractors would obtain a permit per Title 11, Chapter 46, HAR (Community Noise Control) prior to construction. DOH would review the proposed activity, location, equipment, project purpose, and timetable in order to decide upon conditions and mitigation measures, such as restriction of equipment type, maintenance requirements, restricted hours, and portable noise barriers.

No important view planes or scenic sites recognized in the Hawai‘i County General Plan would be affected. Some initial impact to visual character would occur because of vegetation clearing, mostly involving landscaped or non-native wild vegetation, and creation of paved surfaces. The project would not substantially affect the scenic character of this area.

### **3.5 HAZARDOUS AND TOXIC WASTE CONDITIONS**

The project area does not contain known hazardous or toxic substances. The area does not have a history of containing landfills or industrial activities that would result in storage of hazardous or toxic materials. In addition, the construction of the project would not introduce hazardous or toxic materials into the project area.

### **3.6 HISTORICAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES**

North Kona and South Kona are culturally significant areas in the history of Hawai‘i because of the mild climates, rich agricultural lands, and close proximity to both upland and marine resources. From the time of ‘Umi a Liloa, the great chief, Kona has been favored as a place of residence by many ruling chiefs and their families (KCDP, 2008). These favorable environment conditions have resulted in the large settling of Hawaiian populations in these areas which were able to support a vast array of ancient Hawaiian subsistence gathering and cultural uses. Since the early 1900’s, there have been many studies and surveys conducted on the area’s resources documenting the history and archaeology of Keahuolu ahupua‘a, as well as identifying many significant surface and subsurface findings.

### 3.6.1 Historical and Archaeological Resources

An inventory survey conducted in 1990 by Donham, provides a comprehensive overview and evaluation of the previous archaeological work and historical documentary research conducted within Keahuolu ahupua'a. The lands evaluated in this overview are located immediately adjacent to the QLV Subdivision and thus relevant to this project. During this survey 239 sites were identified located within lands adjacent to areas north of Palani Road. In Appendix C, a historical overview on Keahuolu by Helen Wong Smith, is taken directly from Donham's survey report.

#### Background on Queen Lili'uokalani Village Off-Site Sewer Line

The Queen Lili'uokalani Village Off-Site Sewer Line project involves the construction of an off-site sewer line to serve the Queen Lili'uokalani Village (QLV) subdivision situated east of Palani Road. This proposed sewer line would connect the QLV subdivision with the existing County of Hawai'i sewer facility on Keanalehu Drive. The subject project in this Final EA consists of the "on-site" improvements, which will be connected to County's sewer system via the "off-site" improvements proposed by the QLV Off-Site Sewer Line project. The Draft EA for the QLV Off-Site Sewer Line Project is available to the public on the Office of Environmental Quality Control's (OEQC) website titled "2009-08-08-HA-DEA Queen Lili'uokalani Village Sewer Line."

In June 2008, PHRI completed a Cultural Impact Assessment for the Queen Lili'uokalani Village Off-site Sewer Project. The scope of this study included a thorough review of archaeological information and research on the subject area as well as adjacent areas. A total of 21 independent archaeological projects were identified to have identified historical or archaeological features within Keahuolu ahupua'a with the most recent completed in 2007 and oldest completed in 1919. Of the 21 projects identified over 10 involved features in the area's "coastal" zone. A review of the remaining Keahuolu projects revealed there were no known significant historical or archaeological features within the existing QLV Subdivision project site (PHRI, 2008). The following Table 3.2 was taken from this study and shows the collection of selected studies found containing Keahuolu sites or feature surveys.

**Table 3.2 Selected Archaeological Projects within Keahuolu<sup>1</sup>**

Year	Author	Scope	Zone	Findings
1919	Stokes	<i>Heiau Survey</i>	Coastal/Inland	3 <i>heiau</i>
1930	Reinecke	Reconnaissance Survey	Coastal	12 sites primarily habitation platforms & enclosed yards
1970	Emory	Site Inventory	Coastal/Inland	2 <i>heiau</i> discussed
1970a	Newman	Inspection	Coastal	Historic burials and "bait cups"

<sup>1</sup> Rosendahl, Paul and Helen Wong-Smith (PHRI). (2008). Cultural Impact Assessment Queen Lili'uokalani Village Offsite Sewer Project. Prepared for Queen Lili'uokalani Trust c/o Belt Collins. State of Hawai'i: Author.

1972	Bevacqua	Reconnaissance Survey	Coastal	9 sites
1973	Neighbor Island Consultants	Reconnaissance Survey	Coastal	Historic burials located
1975	Sinoto	Reconnaissance Survey	Coastal	7 sites – temporary structures
1978	Ching	Reconnaissance Survey	Coastal	59 sites – salt pans, cave shelters, paving cairns
1979	Rosendahl	Reconnaissance Survey	Coastal	4 complexes, 2 modified sinkholes, 2 wall sections, 1 cairn, 1 rock shelter, 2 petroglyph areas, 1 walled enclosure
1980	Estioko-Griffin & Lovelace	Reconnaissance Survey	Coastal	35 sites – caves, petroglyphs, burials, house sites
1980	Folk	Reconnaissance Survey & Test Excavations	Coastal	21 sites in 3 <i>kipuka</i> – 7 pavements, 3 caves, 2 platforms, 4 historic/recent campsites, 1 burial/shrine, animal enclosure, 3 habitation areas
1980	Neller	Reconnaissance Survey	Coastal	
1983	Soehren	Survey	Inland	Sisal plantation remnants
1983	Rosendahl	Survey	Inland	2 sites – agricultural and habitations, possible ceremonial and burial. One site was later found destroyed
1984	Schilt	Field Work	Coastal/Inland	Kuakini Highway realignment crossing 24 <i>ahupuaa</i> . Within Keahuolu – cairn and modified outcrop
1990	Donham	Reconnaissance Survey	Coastal/Inland	139 sites – <i>pahoehoe</i> quarry, agricultural excavations, rock mounds, modified blisters or outcrop, the majority interpreted as agricultural features
1989	PHRI	Inventory Survey	Inland	Sites indicate relatively intensive agricultural activities
1990	PHRI	Inventory Survey	Inland	32 sites – agricultural/boundary-related, temporary habitation
1993	O'Hare & Rosendahl	Inventory Survey	Inland	18 sites – agricultural, temporary habitation, burial, historic dump, transportation feature, quarry and marker
1993	PHRI	Field Inspection	Inland	16 sites – ceremonial and burials
2007	Haun	Inventory Survey and Assessment	Inland	5 sites – agricultural, temporary and permanent habitation

In 1990, PHRI conducted an archaeological inventory survey of a portion of the proposed Palani Road Improvements project area. This survey field work identified 32 sites containing 44 component features. Agricultural and boundary-related components accounted for up to 30 of the 44 features, while the remaining 14 components included a single special-purpose cave (14218), 13 features believed to represent temporary habitation, including one small cave, five bedrock outcrops, and seven surface features. Based on the findings of this survey, 31 of the 32 identified sites are assessed as significant solely for information content. No further work was recommended for 21 of the 31 sites while the ten remaining sites carried recommendations for further data collection. The one remaining site, the Great Wall of Kuakini (14235), was recommended for preservation.

A site identified by the 1990 PHRI survey is located near the proposed location of the sewer line crossing Palani Road. This property is identified as Site 14239 and described as being a modern age boundary wall which parallels Palani Road, measuring about 0.8 meters wide and ranging from 0.5 to 1.2 meters in height. This wall is constructed of stacked pahoehoe boulders and contains a rubble-filled core in certain parts. There were no other cultural materials observed in association with the wall except where the wall intersected through other existing archaeological sites. The recommended action for this site was no further action necessary. (PHRI, 1990).

In the 2008 PHRI Cultural Impact Assessment, there was another project identified that covered surveyed areas adjacent to the project site, i.e. QLV Subdivision. In January 1983, Lloyd Soehren conducted an archaeological survey on a large Keahuolu Parcel along the mauka side of Queen Ka'ahumanu Highway and adjoining the Queen Lili'uokalani Village Subdivision between 800 and 1000 feet above mean sea level (MSL). Soehren identified the area as part of the former sisal plantation. He did not identify any archaeological sites but did note the entrance to a small lava tube near the west boundary, which he deemed void of any Hawaiian cultural activity (PHRI, 2008).

In 2005, Clark and Rechtman (RCL, 2005), prepared an archaeological inventory survey of Alternative 3 of the Palani Road Transmission Main Water Supply Project. The survey covered a 20 foot to 50 foot corridor that spanned 10,800 feet along Palani Road in the vicinity adjacent to this project site.

As a result of the 2005 survey, seven archaeological sites were recorded within the current project area. One of the sites (Site 14239) is a continuation of a core-filled wall paralleling Palani Road that had been recorded by another archaeologist in 1990, as described above. Three of the sites related to pre-contact/historic agriculture, were previously recorded (but not formerly reported on) during inventory fieldwork conducted by Rechtman Consulting, LLC. In addition to the recorded sites, several agricultural features, likely pre-contact in age, were noted to the east of the survey corridor where it crosses the western edge of TMK 7-4-08: 001 along the eastern edge of the Queen Liliuokalani Village Subdivision. Agricultural features were likely present within the present survey corridor prior to the development of the subdivision (RCL, 2005).

In conclusion, all of the recorded sites provide evidence for the Historic Period use of the general project area, which matches the project expectations. The intensive residential and agricultural use of this area following the late nineteenth and early twentieth century granting programs obliterated or obscured much of evidence of the earlier pre-contact land use. The 2005 Clark and Rechtman archaeological inventory survey was submitted to the State Historic Preservation Division, which concurred with the findings and recommendations of the survey in a letter of February 3, 2006.

### **Probable Effects on Historic Sites and Resources**

Research of available information was conducted to determine the presence of historic sites in the immediate vicinity of the proposed sewer improvements for the project. A review of the County's General Plan and the National and State Register of Historic Place took place to identify any properties which were located within the project site or adjacent areas. Upon review, it was determined that no national or state historic registered properties are currently located within the project site.

Construction of the new sewer collection system serving the QLV Subdivision is not expected to have a significant impact on historic sites or resources. Sewer mains and laterals associated with the collection system would be entirely constructed within existing County roadways and rights-of-way, which are not known to have historic sites or resources present.

SHPD has raised concerns about the new 15-foot easement being proposed along the east edge of Palani Road. A new sewer line is proposed to be located within this easement situated between Palani Road and the adjacent residences within QLV subdivision. This area has been previously disturbed during construction of the subdivision, road, paved shoulder lanes, sidewalks, and roadway maintenance activities. There is potential for construction activities to encounter subsurface historic properties or resources such as human remains or cultural deposits. However, the potential for encountering such a resource is expected to be low due to the areas previous disturbance and current soil types associated with the project area which are not sandy soils as previously discussed. Also, these areas were likely disturbed from agricultural activities conducted in the past (sisal cultivation), along with the construction of the residences and roadways associated with the Queen Lili'uokalani Village Subdivision.

Nonetheless, in the event subsurface human remains, cultural layer, artifacts or other indications of human activity older than 50 years are encountered during construction activities, all work would stop immediately and the State Historic Preservation Division notified at (808) 933-7653. The treatment of any human remains encountered would be determined, and conducted in accordance with the applicable requirements of Chapter 6E, HRS and Chapter 13-300, HAR. Furthermore, as a precautionary measure, construction personnel involved in development activities on the site would be informed of the possibility of inadvertent cultural finds, and would be made aware of the appropriate notification measures to follow.

#### **3.6.2 Cultural Resources**

A Cultural Impact Assessment (CIA) was completed in 2008 by Paul H. Rosendahl, Ph.D., Inc. (PHRI) for a proposed off-site sewer line project located immediately adjacent to the QLV LCC project. The primary objective of the CIA was to identify any native Hawaiian traditional and customary rights currently being practiced within or adjacent to the project area that could be negatively impacted or affected by the proposed sewer line project (PHRI, 2008).

This CIA found that few cultural practices have currently occurred or continues to occur within the proposed sewer line project area. The cultural practices noted included gathering of ocean resources and specific plant from the 300-foot elevation makai (seaward). The QLV LCC project is located approximately 2 miles from the shoreline at an elevation around 4,000 ft. Thus the project is not located within these shoreline gathering areas.

### **Impacts and Mitigation Measures**

In summary, archival research discussed above did not identify specific natural or cultural resources with associated cultural beliefs and practices identified within the proposed QLV LCC Conversion project area. The proposed project does not appear to impact culturally valued resources or cultural practices, nor restrict access to areas that are used for such practices.

Construction of the new sewer collection serving the QLV subdivision is not expected to have a significant impact on historic sites or resources. Sewer mains and laterals associated with the collection system would predominantly be constructed within existing County roadways. Some other segments of the sewer mains would be routed within privately-owned property; however, these parcels are not known to have historic sites or resources present.

There is the potential for construction activities to encounter subsurface historic properties or resources such as human remains or cultural deposits. However, the potential for encountering such resources is expected to be low due to the current soil types associated with the project areas which are not sandy soils as previously discussed. Also, these areas were likely disturbed from large scale agricultural activities conducted along with the construction of the residences and roadways associated with these communities.

Nevertheless, in the unlikely event that other archaeological resources, iwi, native Hawaiian subsurface human remains, cultural layer artifacts, or other indications of human activity older than 50 years are encountered during construction activities, all work would stop immediately and the SHPD Hawai'i Office notified at (808) 933-7653.

## CHAPTER 4: ECONOMIC AND SOCIAL FACTORS

This chapter discusses the project's probable impact on economic and fiscal factors associated with the State and County, as well as social factors such as changes in resident population, housing, and character of the community.

### 4.1 SOCIOECONOMIC CONTEXT

The proposed sewer system improvements project is not expected to change the existing resident population in the North Kona District. There are no new residential units or visitor units associated with this project, and no in-migration of individuals to reside within the district would result. Consequentially, there should be no impact on the existing resident population.

Research was done to determine the population of QLV. Based on the U.S. Census Bureau population record for the 96740 zip code (Kailua-Kona) area, the population was estimated to be 25,132 in 2005. Assuming QLV has 182 existing homes and an average of 2.69 persons per home, the estimated population of QLV was determined to be approximately 490 persons. Table 4.1 summarizes the population and characteristics of the area compared to the county and state.

**Table 4.1 Population Summary**

Area	Population	Median Age	Persons/Household	Ethnicity (Percent)
Kailua-Kona				White: 47.7
Zip Code 96740 (2000)	25,132	39.4	2.69	Asian: 15.8
				Hawaiian: 10.9
				Other/mixed: 25.6
County of Hawai'i (2005 estimated)	164,437	38.6	2.77	White: 34.9
				Asian: 23.5
				Hawaiian: 9.0
				Other/mixed: 32.6
State of Hawai'i (2000)	1,211,537	36.2	2.92	White: 24.3
				Asian: 41.6
				Hawaiian: 9.4
				Other/mixed: 24.7

1/ 2000 and 2005 (estimated) U.S. Census Bureau

This project would not change or alter the character of the QLV community or the character of the North Kona district. The project involves constructing new sanitary sewer within county-owned rights-of-way, which would address issues internal to the properties that have LCCs. Consequently, this project would not have a significant impact on surrounding land uses.

The preliminary estimated construction cost for the planned removal of LCCs and installation of new sanitary sewer collection is estimated to be \$16.7 million, which includes cost for construction outside of QLV.

Replacement of LCCs and the installation of new sewer systems should have a positive but minor economic impact in the region that is mainly associated with the creation of several construction-related jobs over the anticipated one-year construction period. Direct construction jobs would typically consist of on-site laborers, tradesmen, mechanical operators, supervisors, etc. Direct construction jobs created would also stimulate indirect and induced employment within other industries on the island such as retail, restaurants, material distributors, and other related businesses supporting the construction industry.

## **4.2 SOCIAL IMPACT FACTORS**

This project would improve the County DEM's existing wastewater system serving the Queen Lili'uokalani Village subdivision within the Kailua-Kona community.

In ancient times, this area was considered the premier place to live due to the excellent weather and good water. Many kings made their homes here. Later, missionaries built churches and residences turning the tiny fishing village into a small seaport. Currently, the Kailua-Kona town area mixes numerous historical sites with modern tourist attractions. Restaurants, shops, and hotels abound.

The sewer improvements planned to serve the QLV subdivision are not expected to have a significant impact on social factors such as population and housing. The improvements would provide an improved sewer system serving these existing residences and help the County meet the EPA mandate to close existing LCCs. Therefore, no changes to the population or housing of these communities are expected from this project. The improvements are also not expected to change the character or nature associated with the Kailua-Kona community because the project only involves sewer system improvements.

## **4.3 SECONDARY AND CUMULATIVE IMPACTS**

### **Secondary Impacts**

Secondary impacts, or indirect effects, are effects which are caused by an action and are later in time or farther removed in distance, but are still reasonably foreseeable. Such effects may include growth inducing impacts and other effects related to changes in land use patterns,

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population density or growth rate, and related effects on air, water, and other natural systems. The proposed project is expected to have minimal secondary impacts on resident population, land use patterns, public facilities and infrastructure, and the natural environment.

Short-term construction jobs will be created. The project is not expected to generate a substantial number of workers in-migrating to the Island of Hawai'i to fill these jobs. It is anticipated that qualified local contractors on the island or within the State of Hawai'i would likely be used for the project's construction. These workers would thus have minimal if any effect on the County's residential population or housing demand.

This project would not affect the County's resident population growth projected for the North Kona district, and thus not generate the associated secondary effects on infrastructure, public facilities, and housing.

### **Cumulative Impacts**

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. This document discusses the future planned removal of large capacity cesspools and the installation of new sewer collection system. This project is rather minor and should only affect the immediate vicinity of the QLV subdivision. The adverse effects of the project – very minor and temporary disturbance to air quality, noise, visual resources, waste water service, and traffic flow during construction are very limited in severity, nature, and geographic scale.

At the current time, there are two planned projects adjacent to the QLV subdivision. The Hawaii County Department of Water Supply is planning a Main and Reservoir Project adjacent to QLV subdivision on the east side, and extending west and north along Tomi Tomi Road and Kuni Road respectively. Design of the Main and Reservoir project is ongoing and will be complete by 2007, when construction will begin and take about two years to complete. The Department of Hawaiian Homelands is planning several housing and commercial villages in the area west of Palani Road. The timing of this development activity is unknown. It is not expected that these projects will combine in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.

The assessment results in this document show that there are no major secondary or cumulative impacts associated with this project, such as population changes or effects on public facilities, because it simply fulfills the County of Hawai'i Department of Environmental Management (DEM) Consent Agreement and Final Order (CAFO) with the EPA. Although the project would provide some short-term construction jobs, these would almost certainly be filled by local residents and would not induce in-migration.

## CHAPTER 5: INFRASTRUCTURE FACILITIES

This chapter addresses the project's probable effect on existing infrastructure associated with the Large Capacity Cesspool Conversion project. Due to the nature of this project, impacts would be more related to short-term construction activities, and should thus not have a significant impact on infrastructure facilities.

### 5.1 DOMESTIC WATER SYSTEM

The County of Hawai'i Department of Water Supply owns and operates the water supply systems within the subdivision which provide water for domestic consumption purposes and fire protection. The water lines are fed from the North Kona I Water System, which was constructed simultaneously with the QLV subdivision. In addition to the public water supply, numerous wells and reservoirs on the mauka side of the study area also serve the QLV subdivision. Existing water lines serving these communities are owned by the County, DWS and located within existing roadways. There is an existing 12-inch ductile iron water main within Palani Road at the proposed sewer line crossing on Palani Road. Proper vertical clearances between the sewer line and water main must be maintained as per the County's Water System Standards.

This project will not require installation of new water lines or the relocation of existing water lines within either study area. Furthermore, completion of the LCC Conversion project will not increase the water demand for the QLV community. Therefore, this project is not expected to have an adverse impact on water supply or the DWS facilities serving residences. Design plans for this project would be appropriately coordinated with the DWS as part of the normal design process for their ministerial review and approval.

### 5.2 DRAINAGE FACILITIES

There is no existing County drainage system located within QLV subdivision communities. Existing stormwater runoff from the project areas generally collects along the paved roadways and sheet flows towards Palani Road. The stormwater runoff then collects along Palani Road and disperses into open swales or grassed areas.

Development of this project should have minimal impacts on the existing drainage pattern and conditions associated with the QLV community. The project is expected to create additional impervious surfaces associated with the new sewer collection system. However, increases in impervious surfaces will be slight and there should not be a substantial increase in runoff resulting from the completion of the project. The project is not expected to change the existing drainage patterns of the project site. Therefore, the project should not have a significant adverse impact on the drainage facilities in the QLV community. Drainage plans will also be reviewed and approved by the County and necessary improvements implemented.

### **5.3 WASTEWATER COLLECTION**

No public wastewater treatment plants exist in the QLV subdivision. The nearest wastewater treatment plant is the Kealakehe Wastewater Treatment Plant (KWWTP) located approximately 5 miles northwest of the study area. Although there is no county-wide Sewer Master Plan, the North Kona Expansion Area sewer system plan is scheduled for release by the County in 2007. The North Kona Expansion Area will include QLV, and will address the eventual connection of the QLV subdivision to a newly constructed municipal wastewater collection system to be conveyed to KWWTP.

As previously described in Chapter 2 of this document, the existing wastewater system serving the QLV community is comprised of a series of collection lines running across various residential parcels throughout the subdivision. These gravity-fed, county-owned sewer lines collect and convey wastewater from residences to the LCCs for disposal.

The TMK parcel maps and as-built construction drawings for the subdivision indicate sewer easements on both private property and common land of the Homeowner's Association. It appears that in several locations, landowners have constructed permanent or semi-permanent structures on top of the sewer easements. As the process of converting the LCCs continues, the County will need to address this encroachment issue on a case-by-case basis with the landowner. The existing capacity and conditions of the sewer lines is not known. However, a majority of the existing sewers are either 4" or 6" inside diameter. The majority of the existing gravity sewer system is located within private properties and County sewer easements. There are no commercial properties being served by the QLV subdivision sewer system. The project is not expected to have significant impacts on the availability of sewage capacity for Kealakehe High School or other planned developments in the North Kona area.

The project will provide an improvement to the sewer system serving the proposed service areas by implementing a new collection system and better wastewater treatment before being discharged.

### **5.4 SOLID WASTE**

The County Department of Environmental Management, Wastewater/Solid Waste Division operates two County landfills, one in Kona (Pu'uanahulu Landfill) and the other in Hilo (Hilo Landfill). There are also several solid waste transfer stations located throughout the Island of Hawai'i.

Construction of the LCC Conversion project will generate solid waste typical of normal construction related activities. Construction waste will be generated over a relatively short period of time, and consist primarily of vegetation, rocks, and other debris resulting from grubbing and grading. Such activities are expected to have a minimal impact on County solid waste facilities and will be properly disposed of by the contractor.

## **5.5 TRANSPORTATION FACILITIES**

The QLV subdivision is served by several parallel streets and cul-de-sacs. Two collector-streets connect to Palani Road: Konalani and Palihiolo Streets. All of the remaining roads within the subdivision connect to either Konalani or Palihiolo Street. The paved cul-de-sacs and paved, two-lane, shouldered roads within the subdivision are owned and maintained by the County of Hawai'i (see figure 2.2 in section 2). Vehicular access within the QLV community is provided by thirteen parallel streets and cul-de-sacs.

As stated previously, cul-de-sacs and two-lane roads within the subdivision are owned and maintained by the County of Hawai'i. Short-term construction related activities are expected to cause minimal increases in traffic in the immediate project vicinities. Consequently, this project will not result in an increase in traffic volumes once the project is completed.

There have been concerns raised regarding the interruption of traffic due to construction activities along Palani Road where Mamalahoa Highway transitions to Palani Road and the Palani Road/Queen Ka'ahumanu Highway intersection. The construction of this project in combination with other nearby projects could result in potentially heavy traffic along these roads. Appropriate coordination is necessary to prevent these problems from occurring. Furthermore, traffic control plans have been prepared for this project at the area involving construction across Palani Road. The crossing of Palani Road will be conducted using micro-tunneling and this portion of the work is covered under the Off-Site Sewer Main available on OEQC's website. These plans will be coordinated with the appropriate State and County agencies as part of the typical plan review process.

Any work within existing transportation facilities should work to minimize all traffic disruptions. There should be no work conducted on Palani Road during the hours between 6:00 AM to 8:30 AM or 3:00 PM to 6:30 PM, if that work would significantly slow traffic. Per the Traffic Control Plan prepared for this project, the contractor will be required to provide two lanes of traffic through this Palani Road section between the times of 3:00 PM and 8:00 AM, thus impacts to traffic during peak hours are expected to be minimal and adequate provisions are being made for pedestrian safety within construction areas.

## CHAPTER 6: PUBLIC FACILITIES AND UTILITIES

This chapter addresses the probable impact on public facilities and utilities serving the subject property. In summary, the Queen Lili'uokalani Village Large Capacity Cesspool Conversion project is not expected to have long-term significant effects on these facilities. Minor project related effects are expected to be primarily associated with short term construction activities installing sewer improvements.

### 6.1 ELECTRICAL AND COMMUNICATION FACILITIES

Hawai'i Electric Light Company, Inc. (HELCO) and Hawaiian Telcom currently provide electrical and telecommunication service, respectively, to the North Kona area. This project will involve the construction of underground sewer lines predominantly within existing roadways.

HELCO is regulated by the State and owns and operates a number of power generation facilities in the County. This project will not affect the existing electrical or telecommunications demand generated by these communities and subsequently HELCO's power generating facilities. HELCO's electrical service in QLV was constructed in 1971, and is distributed through an underground network of cables encased in concrete conduits within the county road right-of-way. Appropriate design plans for this project would be coordinated with HELCO as applicable during the project's design phase.

Hawaiian Telecom owns and operates the telecommunication utilities and Oceanic Time Warner cable owns and operates the TV cable utilities. The homes are served through an underground cable network located within the roadway of the QLV subdivision. Further contact must be made with Hawaiian Telecom to locate its infrastructure prior to construction within the roadway. Hawaiian Telecom responded to a pre-assessment consultation letter dated September 19, 2006 (see appendix B), and recommended obtaining location information from its Kona office.

### 6.2 MEDICAL FACILITIES

The Kona Community Hospital services the Kona community, and is located in Kealakekua 18 miles south of Kona International Airport.

Kona Community Hospital is a 94-bed acute and long-term care hospital. This hospital provides 24-hour emergency services and a family practice medical clinic with 34 long-term care beds, 11 psychiatric and 49 acute. The current hospital was rebuilt in 1975 to replace the former wooden structure with 52 beds and to further serve the medical needs of the area.

Potential impacts to this medical facility would only be associated with short-term construction activities which are typically associated with noise and fugitive dust emission. Consequently, the cesspool conversion project is not expected to have a significant impact on this medical facility or its operations. Such construction activities should not adversely affect

these facilities since the project site is located at a considerable distance from Kona Hospital. Furthermore, the completion of the project also should not impact the medical facilities operations or services provided at Kona Hospital.

### **6.3 EDUCATIONAL FACILITIES**

The Kealakehe Elementary, Kealakehe Intermediate, and Kealakehe High Schools provide public education for students in grades Kindergarten through 12th grade and is operated by the Hawai'i State Department of Education. The elementary school serves students from Kindergarten through 5th grade. The intermediate school serves students from 6th through 8th grade. The high school serves students from 9th through 12th grade. This Kealakehe complex is within 5 miles of the subdivision and had an enrollment of about 3,500 students in 2006 serving students from Kindergarten through 12th grade.

The QLV LCC Conversion project should not have any significant impact on these existing school facilities of the activities and operations conducted at these schools. This project would not result in direct or indirect changes to current and future enrollments project for these schools. As a result, the existing teacher and administrative staffing requirements for these schools would not be affected.

Potential impacts to these schools would mostly be associated with short-term construction-related activities. Noise and dust emissions would likely constitute the primary impacts associated with construction activities. In order to mitigate these impacts, the contractor would be required to comply with applicable regulations and permit conditions governing construction activities to minimize disruptions to on-going classes, and nearby residential areas. Best management practices (BMPs) would be implemented to minimize dust, erosion, and other impacts from construction-related activities in accordance with permit requirements and State DOH regulations. Prior to the start of construction activities, notification will be given to the principals of each school of the pending work and if there will be changes in traffic patterns or utility service to these schools.

### **6.4 POLICE PROTECTION**

The Hawai'i County Police Department provides services to the Kona district which includes the QLV community. The Kona Patrol District encompasses 834 square miles and is between the South Kohala District at Kaauau Point and the Ka'u District at Kaulanamauna. Its officers operate from a central station in Kealakehe and from district stations in Keauhou and Captain Cook, as well as a mini-station in Kailua Village.

The project is expected to create no additional demand for police protection and related services since it will not increase the resident population or visitors to the area. This project should have minimal impact on the police department's operations or ability to provide adequate protection services to the surrounding community. If necessary, off-duty staff may

be hired to assist in directing traffic during construction activities.

## **6.5 FIRE PROTECTION**

There are fire stations located within the Kailua-Kona community. The regular fire stations and volunteer stations provide 24-hour fire protection and emergency medical services. The County has contracted with the State Department of Health for emergency medical ambulance services. All fire department personnel who provide basic and advanced life support are licensed or certified as required by State law.

This cesspool conversion project is not expected to have a significant impact on the County's Fire Department's facilities or ability of staff to provide fire protection services to the schools and surrounding North Kona District. The project would not affect their operations nor require additional fire protection services since it does not increase the resident population or visitors to the Kailua-Kona area. Appropriate design plans will also be coordinated with the Fire Department for their review during the project's design phase.

## CHAPTER 7: CONFORMANCE WITH PLANS AND POLICIES

This chapter discusses the project's conformance with the State Land Use District regulations, and the County's General Plan goals and policies, and Zoning District standards.

### 7.1 STATE LAND USE DISTRICT

Pursuant to Chapter 205, HRS, all lands in the State of Hawai'i are classified by the State Land Use Commission (LUC) into four major land use districts. These four land use districts are Urban, Rural, Agricultural, and Conservation districts. The boundaries of these districts are shown on maps referred to as State Land Use District Boundary Maps. The State Land Use District Boundary Maps for North Kona District indicates that Queen Lili'uokalani Village is located within the State's Medium and Low Density Urban Districts. The boundary was shown on figure 1.4 in section 1.

Permitted uses within the State Land Use District are prescribed under Title 13, Chapter 205 (LUC), HRS, and the State Land Use Commission's Administrative Rules prescribed under Title 15, Subtitle 3, Chapter 15, Hawai'i Administrative Rules. Land uses within Urban Districts are governed by the ordinances or regulations of the county within which the urban district is situated. The proposed Queen Lili'uokalani Village Large Capacity Cesspool Conversion Project is consistent with the County's zoning ordinances which are discussed later in this document.

### 7.2 CHAPTER 344, STATE ENVIRONMENTAL POLICY

This section discusses the project's conformance and consistency with the pertinent goals, policies, and guidelines described under Chapter 344, HRS, State Environmental Policy.

#### Environmental Policy

1. *Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawai'i.*

The project is consistent with the State's environmental policy because the conversion would provide an improved wastewater collection system and ensure continued reliable service for the community in the future. This project would not have an adverse impact on natural resources or the environment as discussed in the various sections of this document.

The proposed conversion, along with construction activities conducted, would meet all applicable federal, state and county regulations to protect the environment and all necessary permits would be obtained. Best management practices (BMPs) would be implemented during

construction to minimize runoff and other short-term impacts such as fugitive dust and noise. Thus, this project will help conserve and preserve open space lands, and is not anticipated to impact the shoreline and ocean waters.

2. *Enhance the quality of life by:*

- A. *Setting population limits so that the interaction between the natural and manmade environments and the population is mutually beneficial.*
- B. *Creating opportunities for the residents of Hawai'i to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments.*
- C. *Establishing communities which provide a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian.*
- D. *Establishing a commitment on the part of each person to protect and enhance Hawaii's environment and reduce the drain on nonrenewable resources.*

The project would be consistent with these environmental policies regarding the quality of life. The proposed project does not involve the development of new homes or visitor units. Thus, these improvements would not adversely affect the existing or future projected resident population in the Queen Lili'uokalani Village subdivision. This project would support the community by assisting the County DEM in providing improved, continuous, and reliable wastewater collection service without adversely effecting the physical and social environment. The resulting interaction between the natural and man-made environments would continue to be mutually beneficial.

Construction of the project would create additional short-term construction related jobs for island residents helping County residents improve their quality of life and economic activity. Such short-term construction jobs are expected to be filled by Hawai'i residents and will not require worker relocation.

The project does not conflict with the policy of establishing communities providing a sense of identity and wise use of land. It would support the existing community by improving the collection system reliability and its impact to the environment. As discussed in this document, the project should not adversely affect the natural environment and will be designed to be compatible with the environment.

**Guidelines**

1. *Population*

- A. *Recognize population impact as a major factor in environmental degradation and adopt guidelines to alleviate this impact and minimize future degradation.*
- B. *Recognize optimum population levels for counties and districts within the State,*

*keeping in mind that these will change with technology and circumstance, and adopt guidelines to limit population to the levels determined.*

This project would not affect the existing or future projected resident population in the Queen Lili'uokalani Village subdivision. The proposed improvements do not involve the introduction of new residences or visitor units, and short-term construction jobs are expected to be filled by Hawai'i residents not resulting in worker relocation.

2. *Land, water, mineral, visual, air, and other natural resources*

- A. *Encourage the management practices which conserve and protect watersheds and water sources, forest, and open space areas.*
- B. *Establish and maintain natural area preserves, wildlife preserves, forest preserves, marine preserves, and unique ecological preserves.*

The project would be consistent with these guidelines because the improvements would not adversely impact those natural resources identified such as watersheds, forest preserves, wildlife preserves, or unique ecological preserves. The project would not impact an area that is valuable as important open space area because the project area is already designated as urban. Appropriate measures would be incorporated into the project's design to minimize erosion and address appropriate drainage requirements. Furthermore, the overall impact of the project will enhance the quality and condition of the watershed as the removal of large capacity cesspools will prevent untreated wastewater from seeping into the ground.

3. *Flora and Fauna*

- A. *Protect endangered species of indigenous plants and animals and introduce new plants or animals only upon assurance of negligible ecological hazard.*
- B. *Foster the planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment.*

As discussed in this document, the project would not impact endangered plants or animals because none are known to be present on the site, and existing plants within the project site are primarily invasive species. This project would not introduce new plants or animals to the area. Thus, this project would be consistent with these guidelines.

4. *Parks, recreation, and open space*

- A. *Establish, preserve and maintain scenic, historic, cultural, park and recreation areas including the shorelines, for public recreational, educational, and scientific uses.*

The project is not expected to impact significant historic properties or cultural resources and practices as discussed above in this document because there are no known sites present or traditional cultural practices directly affected by the project. The proposed improvements are not expected to significantly impact recreational areas, educational facilities, or scenic visual resources. Appropriate coordination and notification will be given to the schools in the area

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before construction activities begins.

*5. Economic Development*

- A. *Promote and foster the agricultural industry of the State; and preserve and conserve productive agricultural lands.*

The project would be consistent with this guideline because it is not expected to significantly impact the agricultural industry. The proposed improvements will occur predominantly within existing County roadways in Queen Lili'uokalani Village that is a developed urban residential community. Other privately-owned properties are not presently utilized for agricultural activities or affect such nearby activities. The project should have no effect on the overall agricultural operations occurring in the North Kona Districts or on the County's agricultural industry.

*6. Citizen participation*

- A. *Provide for expanding citizen participation in the decision making process so it continually embraces more citizens and more issues.*

The environmental review process undertaken allows for public and government agency input to express concerns and comments associated with the project. Such opportunities include pre-assessment consultation efforts and the availability of the Draft EA for public review. Thus, the public consultation process incorporated within this environmental review process provides the general public and decision-makers with a diverse array of information to consider in evaluating this project.

### **7.3 COUNTY OF HAWAI'I GENERAL PLAN**

This section discusses the project's conformance and consistency with relevant goals, policies, and standards from the County's existing General Plan dated February 2005.

*1. Economic*

*A. Goal:*

- i. Provide residents with opportunities to improve their quality of life.*
- ii. Economic development and improvement shall be in balance with the physical and social environments of the island of Hawaii.*
- iii. Promote and develop the island of Hawai'i into a unique scientific and cultural model, where economic gains are in balance with social and physical amenities. Development should be reviewed on the basis of total impact on the residents of the County, not only in terms of immediate short run economic benefits.*
- iv. The County shall strive for full employment.*

*B. Policies:*

- i. Capital improvements program shall improve the quality of existing commercial*

*and industrial areas.*

- ii. The County of Hawaii's land, water, air, sea, and people shall be considered as essential economic resources for present and future generations and should be protected and enhanced through the use of economic incentives.*

**C. North Kona District Courses of Action:**

- i. Balance development with the social and physical environment of the area. Provisions for orderly development, housing and pollution controls shall be implemented.*
- ii. Recognize the natural beauty of the area as a major economic and social asset. Protect this resource through appropriate review processes when development is proposed.*

The project would be consistent with these goals, policies, and standards because it would create additional short-term construction related jobs for island residents. As discussed throughout this document, the proposed conversion from LCCs to wastewater collection and treatment systems is not expected to have significant adverse impacts upon the environment. This project would assist the County DEM in providing an improved collection service to the Queen Lili'uokalani Village community without adversely effecting the physical and social environment. This collection system improvement will provide a long-term benefit for residents by improving the surrounding natural environment, and reducing the County's maintenance costs associated with the current conditions of the collection system which includes groundwater resources and the costal environment with the conversion of cesspool.

**2. Environmental Quality**

**A. Goals:**

- i. Maintain and, if feasible, improve the existing environmental quality of the island.*
- ii. Control Pollution.*

**B. Policies:**

- i. Take positive action to further maintain the quality of the environment.*
- ii. Reinforce and strengthen established standards where it is necessary, principally by initiating, recommending, and adopting ordinances pertaining to the control of pollutants that affect the environment.*
- iii. Advice the public of environmental conditions and research undertaken on the island's environment.*
- iv. Participate in watershed management projects to improve stream and coastal water quality and encourage local communities to develop such projects.*
- v. Work with the appropriate agencies to adopt appropriate measures and provide*

*incentives to control point and nonpoint sources of pollution.*

C. *Standards:*

- i. *Pollution shall be prevented, abated, and controlled at levels which will protect and preserve the public health and well-being, through the enforcement of appropriate federal, state and county standards.*
- ii. *Federal and state environmental regulations shall be adhered to.*

The new sewer collection would be consistent with these environmental quality policies and goals because it would provide an improved system that will allow continuous, reliable service for residents into the future. This project would not have an adverse impact on the environment as discussed in this document and will be in line with ensuring a "clean" environment (air, soil and water) for optimum growth. It will help to improve the existing environmental conditions of the area by removing LCCs that introduce untreated wastewater into the ground.

The proposed project is in conformance with the goals of the Island of Hawai'i and will assist in the control of pollution to the coastal waters around the North Kona District. All structures and appurtenances constructed would meet all applicable federal, state and county regulations to protect the environment and meet water quality requirements. This would include coordinating the review and approval of construction plans with pertinent government agencies.

3. *Flood Control and Drainage*

A. *Goals:*

- i. *Protect human life.*
- ii. *Prevent damage to man made improvements.*
- iii. *Control pollution.*

B. *Policies:*

- i. *Encourage grassed shoulder and swale roadway design where climate and grade are conducive.*
- ii. *Consider natural hazards in all land use planning and permitting.*

C. *Standards:*

- i. *Applicable standards and regulations of Chapter 10, "Erosion and Sedimentation Control," of the Hawai'i County Code.*

Given the small trench size required to install the collection system piping the project would not cause a significant increase in surface runoff or alter existing drainage patterns in the surrounding area. Design of the structures would meet County standards and requirements addressing runoff and be coordinated with appropriate regulatory agencies.

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#### 4. Historic Sites

##### A. Goals:

- i. Protect, restore and enhance the sites, buildings and objects of significant historical and cultural importance to Hawai‘i.
- ii. Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.

##### B. Policies:

- i. The County of Hawai‘i shall require both public and private developers of land to provide a historical survey prior to the clearing or development of land when there are indications that the land under consideration has historical significance.

This project is not expected to impact significant historic properties or cultural resources and practices as discussed above in this documents. In the event subsurface historic properties, such as burials, are encountered during construction, all work would stop and the SHPD would be notified. Treatment of properties would be conducted in conformance with Chapter 6E, HRS and the §13-300, Hawai‘i Administrative Rules.

#### 5. Natural Beauty

##### A. Goals:

- i. Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources.
- ii. Protect scenic vistas and view planes from becoming obstructed.
- iii. Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.

##### B. Policies:

- i. Access easement to public or private lands which have natural or scenic value shall be provided or acquired for the public.
- ii. Do not allow incompatible construction in areas of natural beauty.

The project would avoid impacts to coastal or other scenic resources because the project area is over 500 feet above msl, and no public scenic lookouts or viewing points exist near the project site. Furthermore, existing view planes will not be disturbed because improvements, once installed, will be located underground.

#### 6. Natural Resources and Shoreline

##### A. Goals:

- i. Protect and conserve the natural resources of the County of Hawai‘i from undue exploitation, encroachment and damage.

- ii. Protect and promote the prudent use of Hawaii's unique, fragile, and significant environmental and natural resources.*
- iii. Protect rare or endangered species and habitats native to Hawaii.*
- iv. Protect and effectively manage Hawaii's open space, watersheds, and natural areas.*
- v. Ensure that alterations to existing land forms and vegetation, except crops, and construction of structures cause minimum adverse effect to water resources, and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation, or failure in the event of earthquake.*

B. Policies:

- i. The County shall encourage public and private agencies to manage the natural resources in a manner that avoids or minimizes adverse effects on the environment and depletion of energy and natural resources to the fullest extent.*
- ii. The County shall encourage an overall conservation ethic in the use of Hawaii's resources by protecting, preserving, and conserving the critical and significant natural resources of the County of Hawaii.*
- iii. The County shall encourage the protection of watersheds, forest, brush, and grassland from destructive agents and uses.*
- iv. The installation of utility facilities, highways and related public improvements in natural and wildland areas should avoid the contamination or despoilment of natural resources where feasible by design view, conservation principles, and by mutual agreement between County and affected agencies.*
- v. Ensure that activities authorized or funded by the County do not damage important natural resources.*

The project would be consistent with these goals and policies. There are no rare or endangered species or significant habitats present in the project area which would be adversely affected by the improvements. As discussed in this document, the project is not expected to have a significant impact on the physical environment which includes natural resources, recreational amenities, and scenic resources. This project would not impact watersheds, forest reserves, or other important vegetation in a negative manner. Appropriate measures would be incorporated into the project's design to minimize erosion and address appropriate drainage requirements.

7. Housing

A. Goals:

- i. Attain safe, sanitary, and livable housing for the residents of the County of Hawai'i.*

- ii. Create viable communities with affordable housing and suitable living environments.*

*B. Policies:*

- i. Support programs that improve, maintain, and rehabilitate the existing housing inventory to maintain the viability of existing communities.*
- ii. Ensure that adequate infrastructure is available in appropriate locations to support the timely development of affordable housing.*

This project will assist in meeting the plans and policies of the living environment of residents in the QLV subdivision communities by providing an improved wastewater collection system.

*8. Public Utilities*

*A. Goals:*

- i. Ensure that properly regulated, adequate, efficient and dependable public and private utility services will be available to users.*
- ii. Maximize efficiency and economy in the provision of public utility services.*
- iii. Design public utility facilities to fit into their surroundings or concealed from public view.*

*B. Policies:*

- i. Public utility facilities shall be designed so as to complement adjacent land uses and shall be operated so as to minimize pollution or disturbance.*
- ii. Provide utilities and service facilities which minimize total cost to the public and effectively service the needs of the community.*
- iii. Utility facilities shall be designed to minimize conflict with the natural environment and natural resources.*
- iv. Improvement of existing utility services shall be encouraged to meet the needs of users.*
- v. The County shall develop short and long range capital improvement programs and plans for public utilities within its jurisdiction and which are consistent with the County General Plan.*

This project would not create adverse impacts causing increases in pollution to the community or environment. Appropriate measures would be incorporated into the project's design to minimize noise and fugitive dust emissions during construction. The conversion of the LCC to a new sewer collection system will help DEM meet the requirements of the EPA consent order.

**Water**

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*Policies:*

- a. *Water sources shall be adequately protected to prevent depletion and contamination from natural and man-made occurrences or events.*
- b. *Seek State and Federal funds to assist in financing projects to bring the County into compliance with the Safe Drinking Water Act.*

This project will improve the quality of the area of the Queen Lili'uokalani Village community as described previously in Section 3.1.2. Currently the community is serviced by ground water sources via the Hualalai Aquifer Sector and Keauhou Aquifer System through four Kahaluu wells. The conversion of the LCCs to wastewater collection will improve and replace the inadequate system currently in place that directly allows untreated sewage to seep into the ground water.

**Sewage**

*Policies:*

- a. *The "Sewerage Study for All Urban and Urbanized Areas of the County of Hawai'i, State of Hawai'i," December 1970, and the "Water Quality Management Plan for the County of Hawai'i," December 1980, shall be updated and used as guides for the general planning of sewerage disposal systems.*
- b. *Immediate steps should be taken to designate treatment of plant sites, sewerage pump station sites, and sewer easements according to the facility plans to facilitate their acquisition.*
- c. *Continue to seek State and Federal funds to finance the construction of proposed sewer systems and improve existing systems.*
- d. *Require major developments to connect to existing sewer treatment facilities or build their own.*

*Standards:*

- a. *Incorporate sewage works standards proposed in the "Sewerage Study for All Urban and Urbanized Areas of the County of Hawai'i" and the "Water Quality Management Plan for the County of Hawai'i."*
- b. *Sewerage systems shall be designed for a particular area, depending on topography, geology, density of population, costs, and other considerations of the specific area.*
- c. *Applicable standards and regulations of the State Department of Health, Chapter 23 "Underground Injection Control".*
- d. *Applicable standards and regulations of the State Department of Health, Chapter 54 "Water Quality Standards".*

- e. *Applicable standards and regulations of the State Department of Health, Chapter 62, HRS, "Wastewater Systems".*
- f. *All wastewater disposal systems shall conform to the applicable provisions of Chapter 11-62, Hawai'i Administrative Rules for the Department of Health to ensure proper treatment and disposal of wastewater and to prevent further contamination of waterways, underground water sources, and the coastal waters.*

The project would be consistent with these policies and standards because it will replace the existing LCCs with an improved sewer collection system to serve the Queen Lili'uokalani Village. These improvements would comply with the EPA mandate to close cesspools. Federal funding is planned to finance construction. All improvements would be designed and constructed in accordance with applicable federal, state, and county design standards and requirements, which includes their ministerial review of construction plans for approval.

#### **7.4 COUNTY ZONING DISTRICT**

The Queen Lili'uokalani Village project area is presently zoned Single Family Residential (RS-15), although the lots are considered non-conforming because they range in size from 3,500 to 10,177 square feet, less than the minimum 15,000 square foot required by the Zoning Code.

Under the Hawai'i County Code, Chapter 25, Zoning (Zoning Code), the proposed project is considered a utility within a "street" because the sewer collection system (utility) would be within a right of way for vehicle purposes and pedestrian traffic, and the placement of utilities, or a private right of way for vehicular purposes which provides access to building sites. The utilities within the street serve a County government function for public benefit by providing improved and more reliable sewer collection service to the community.

Under the County Code, any utilities installed for the purpose of furnishing telephone, gas, electricity, water, sewer, radio, or television shall be a permitted use in any district provided that the use is not hazardous or dangerous to the surrounding area. As a result, the wastewater collection systems are a permitted use, and may be subject to plan review and approval by the County Planning Director (§25-4.6 and .11).

#### **7.5 COMPLIANCE WITH FEDERAL CROSS-CUTTING REQUIREMENTS**

This project may also be funded by federal funds through the State of Hawai'i's Clean Water State Revolving Fund (SRF) Program. As a result, this would constitute a federal action, and will require the project to meet all Hawai'i Clean Water SRF program requirements which include compliance with several federal regulations. The project's compliance and consistency with these federal "cross-cutting" regulations and authorities are discussed.

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### **7.5.1 National Historic Preservation Act & Archaeological and Historic Preservation Act**

The National Historic Preservation Act (NHPA), as amended (16 U.S.C. § 470), directs federal agencies to integrate historic preservation into all activities which either directly or indirectly involve land use decisions. This is to ensure federal leadership in the preservation of historic resources of the United States.

The Archaeological and Historic Preservation Act (AHPA), as amended (16 U.S.C. § 469-469c), further the policies of the Historic Sites Act of 1935 by providing for the preservation of cultural resources that may be damaged by federally authorized construction activities.

#### **National Historic Preservation Act**

Under the NHPA, Section 106 and 110 are most pertinent to this project. Section 106 consultation procedures are defined by the Advisory Council on Historic Preservation (AChP) under their regulations 36 CFR Part 800, Protection of Historic Properties. These consultation procedures require federal agencies to take into account the effects of their undertakings on historic properties. If this project is eventually federally funded, it would constitute a federal “undertaking” necessitating compliance with these consultation procedures.

Based upon the assessment results conducted thus far, the proposed sewer improvements are not expected to affect historic properties or resources. There is the potential for construction activities to encounter subsurface historic properties or resources such as human remains or cultural deposits. However, the potential for encountering such resources is expected to be low due to the disturbance from previous construction activities and concurrent soil types associated with the project areas which are not sandy soils. Mitigative measures were discussed in the event subsurface human remains, cultural layer, artifacts, or other indications of human activity older than 50 years are encountered during construction activities. Such actions taken would comply with the applicable requirements of Chapter 6E, HRS, and Chapter 13-300, HAR.

Consultation with the State Historic Preservation Division would be conducted under this environmental review process to evaluate potential project impacts on historic sites and obtain a determination. A pre-assessment consultation letter with information was sent, and a copy of this Draft EA will also be provided for their review. Furthermore, this Draft EA will be provided to other pertinent parties for review and comment such as the Hawai'i Island Burial Council, State Office of Hawaiian Affairs, and State Department of Hawaiian Home Lands.

Section 110 of the NHPA describes the responsibilities of Federal agencies regarding the identification, evaluation, registration, protection, and preservation of historic properties eligible or listed on the National Register of Historic Places. It also requires minimizing harm to National Historic Landmarks. This project would not affect National Historic Landmarks as none

have been identified within the project area's immediate vicinity.

#### **Archaeological and Historic Preservation Act**

Under the AHPA, Section 469a-1 (Data Recovery) is most pertinent to this project. This section generally addresses data recovery and protection of data when a project may result in the irreparable loss or destruction of significant historic data. It specifies the notification and request for preservation of data along with surveying of the site and compensation.

As previously discussed, the project is not expected to have an effect on historic sites because none should be directly affected by construction. As a result, construction of the wastewater collection and treatment system should not result in the need for data recovery or the protection of such data as stipulated under this Act.

#### **7.5.2 Clean Air Act**

The Clean Air Act (16 U.S.C. § 7506(c)) was established to protect and enhance the quality of the Nation's air resources to promote the public health and welfare and the productive capacity of its population. Individual States administer much of this law by setting air pollutant limits, processing permit applications, and implementing plans addressing compliance with this Act.

The project would be consistent with this Act and the State's implementation regulations and requirements because it would not generate long-term impacts on air quality. Given the type of improvements associated with this project, the only potential effects on air quality would be associated with short-term construction activities which were addressed previously in this document. The contractor will implement appropriate best management practices during construction and will need to comply with fugitive dust emissions or obtain a permit from the State Department of Health.

#### **7.5.3 Coastal Zone Management Act**

The Coastal Zone Management (CZM) Act encourages the management of coastal areas and provides grants for maintaining coastal zone areas. It requires federal agencies to be consistent with the enforceable policies of State coastal zone management programs when conducting activities affecting a coastal zone. It is intended to ensure that federal activities are consistent with state programs for the protection and, where possible, enhancement of the nation's coastal zones.

The state's CZM policies and regulations are prescribed under Chapter 205A, HRS. The project would be consistent with those pertinent state CZM objectives and policies as discussed below. Those objectives which do not have policies that are pertinent to this project are identified below as well.

##### **A. Objectives:**

- 1. Provide coastal recreational opportunities accessible to the public. (Not applicable)*
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2. *Protect, preserve, and where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*
3. *Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.*
4. *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*
5. *Provide public or private facilities and improvements important to the State's economy in suitable locations.*
6. *Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.*
7. *Improve the development review process, communication, and public participation in the management of coastal resources and hazards.*
8. *Stimulate public awareness, education, and participation in coastal management.*
9. *Protect beaches for public use and recreation. (Not applicable)*
10. *Implement the State's ocean resources management plan. (Not applicable)*

A discussion of this project's conformance and consistency with the various applicable policies developed for each objective is provided. In summary, the construction of sewer improvements to convert existing LCCs would be consistent with applicable policies. Therefore, the project would be consistent with these CZM objectives.

*B. Policies:*

1. *Historic Resources:*
  - a. *Identify and analyze significant archaeological resources;*
  - b. *Maximize information retention through preservation of remains and artifacts or salvage operations; and*
  - c. *Support state goals for protection, restoration, interpretation, and display of historic resources.*

As discussed previously in this document, the project is not expected to impact historic sites or cultural within the project area or in the immediate surrounding area. Furthermore, most of the work would occur within existing county roadways which have been previously disturbed from other utility and roadway infrastructure construction. Coordination with the SHPD would be conducted under this environmental review process to confirm the assessment findings. If necessary, appropriate measures will be implemented during construction to mitigate potential impacts on historic resources.

*2. Scenic and open space resources:*

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- a. Identify valued scenic resources in the coastal zone management area;
- b. Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline; and
- c. Encourage those developments which are not coastal dependent to locate to inland areas.

The project is consistent with these policies because the improvements would avoid impacts to scenic and open space resources as discussed previously in this document. There were no scenic resources or scenic viewing points present within the immediate project area that would be affected by construction or installation of the proposed wastewater collection and treatment facilities. The project would have minimal effects or alterations to natural landforms, and improvements would be appropriately designed to be compatible with the surrounding environment. This LCC conversion is not coastal dependent because it involves inland areas at elevations above 500 feet msl.

3. Coastal Ecosystems:

- a. Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs.

The project will be consistent with this policy because it would avoid disrupting existing streams through diversions or channelization, or degrade coastal water ecosystems. Best management practices would be implemented during construction to minimize erosion and runoff. Such measures would be developed during the design of this project, and would comply with the County's Erosion and Sedimentation Control regulations. Other mitigative measures would be specified as part of applicable National Pollutant Discharge Elimination System (NPDES) permits obtained for this project. The project should improve coastal water ecosystems because it would replace the existing LCCs serving these areas with more appropriate wastewater treatment systems.

4. Economic uses:

- a. Concentrate coastal dependent development in appropriate areas.

The project is not a coastal dependent development, and is appropriately sited well inland to serve the community's wastewater needs.

5. Coastal hazards:

- a. Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards.
- b. Ensure that developments comply with requirements of the Federal Flood Insurance Program.

c. *Prevent coastal flooding from inland projects.*

The project would not be located in coastal areas that are typically subject to storm wave, tsunami, and flooding because it is located well inland. This site is not located within a designated flood hazard area under the FIRM, or subject to non-point source pollution hazards.

6. *Managing development:*

- a. *Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;*
- b. *Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and*
- c. *Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the public to facilitate public participation in the planning and review process.*

The project is consistent with these policies as it will be developed in accordance with all applicable laws, rules and regulations. Furthermore, appropriate coordination with agencies is being conducted in a coordinated manner to minimize overlapping or conflicting permit requirements. Lastly, the potential impacts of the project will be communicated to the public through the environmental review processes.

7. *Public participation:*

- a. *Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities.*

This Draft EA document, published under the environmental review process, will disseminate information available to the public, government agencies, and concerned organizations on the probable impacts resulting from the project.

#### 7.5.4 Endangered Species Act

The Endangered Species Act (16 U.S.C. § 1531) was established to ensure that Federal agencies use their authorities to protect and conserve endangered and threatened species. In particular, Section 7 of this Act requires such agencies to prevent or modify projects authorized, funded, or carried out that are likely to jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of critical habitat of such species.

If this project is federally funded, it would constitute a federal “action” making it subject to Section 7 consultation under the Endangered Species Act. This project should not be considered a “major construction activity;” therefore, “informal consultation” would be conduct with the U.S. Fish and Wildlife Service (FWS). This consultation would be conducted to

ensure that the project is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

Based upon the assessment conducted thus far, there appears to be no known endangered or threatened species present within the project area planned for improvements or in the immediate surrounding vicinity. Most of the improvements would occur within existing County roadways that do not have endangered or threatened species present. Properties along these roadways similarly consist of existing residences. The areas where improvements are planned within privately-owned property are not known to contain or provide suitable habitat for such species. In addition, none of the project improvement areas have been designated as critical habitat by the FWS.

The site does not appear to have other resources, such as wetlands, which may be suitable for habitat by endangered birds or mammals. The majority of mammals present likely consist of alien species such as rodents or feral animals normally harmful to native avian and plant communities. No federally endangered, threatened, or candidate species, significant wetlands, or other Federal trust resources under their jurisdiction thus occur at the project site. Therefore, construction of the sewer improvements should not jeopardize the continued existence of a listed species or adversely affect designated critical habitat.

Consultation with the FWS will be performed as part of this environmental review process to obtain further input and comments on this assessment. This would include providing the FWS with a copy of the Draft EA for review and comments. A pre-assessment consultation letter was already provided to the FWS soliciting their comments for which no response has yet been received.

#### **7.5.5 Farmland Protection Policy Act**

The Farmland Protection Policy Act (7 U.S.C. § 4201) was established to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. It is also to assure that federal programs are administered in a manner that will be compatible with State, local and private programs and policies to protect farmland.

The project should not have an adverse impact on farmlands because the proposed sewer improvements would occur within existing roadways or undeveloped property not currently used for agricultural production. Areas for treatment system improvements are also not currently used for agriculture. The project areas affected are designated Urban under the State Land Use District boundary maps. As a result, the Farmland Conversion Impact Rating Form (AD 1006) should not be required for the Natural Resources Conservation Services evaluation and processing.

#### **7.5.6 Fish and Wildlife Coordination Act**

The Fish and Wildlife Coordination Act (16 U.S.C. § 661) was enacted to protect fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. This requires Federal agencies to take into consideration the effect that water-related projects would have on fish and wildlife resources, take action to prevent loss or damage to these resources, and provide for the development and improvement of these resources.

This project would not involve the control or modification of perennial or intermittent waterbodies. The improvements would occur predominantly within existing county roadways, along with some privately-owned parcels that are undeveloped. Consequently, this is not expected to negatively impact fish and wildlife resources in the immediate vicinity.

Consultation with the FWS and State DLNR will be performed as part of this environmental review process to obtain further input and comments on this assessment. This would include providing these agencies with a copy of the Draft EA for review and comments. Pre-assessment consultation letters were already provided to these agencies soliciting their comments. No information or major concerns have been identified thus far associated with this project's effects on fish and wildlife resources.

#### **7.5.7 Executive Order 11988 Floodplain Management**

Executive Order 11988 requires Federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains. It also requires agencies to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

The proposed improvements would not be constructed within or modify a designated floodplain as identified under the FIRM. Consequently, this project would not conflict with this Executive Order.

#### **7.5.8 Executive Order 1190 Protection of Wetlands**

Executive Order 11990 was issued to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. This Order requires Federal agencies, in their planning actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided.

The improvements would occur predominantly within existing county roadways, along with some privately-owned parcels. Based on review of the U.S.G.S Quadrangle maps and visual site inspections, there are no known wetlands within the small-sized residential lots, common areas, or roadways. Consequently, the project would not affect or result in the loss or destruction of wetland, and will not conflict with this Executive Order.

#### **7.5.9 Safe Drinking Water Act**

The Safe Drinking Water Act (42 U.S.C. § 300) was established to protect public health by regulating the nation's public drinking water supply. This law incorporates many actions to

protect drinking water and its sources such as rivers, lakes, reservoirs, springs, and ground water wells. Under this Act, it authorizes the U.S. Environmental Protection Agency (EPA) to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. The EPA works with States to make sure that these standards are met.

The main purpose for this project is to comply with the EPA requirements requiring the closure of large capacity cesspools. Therefore, the sewer collection improvements would support this Act by improving the quality of wastewater effluent discharged into aquifers.

#### **7.5.10 Wild and Scenic Rivers Act**

The Wild and Scenic Rivers Act (16 U.S.C. § 271) was established to preserve the free-flowing state of rivers that are listed in the National Wild and Scenic Rivers System or rivers under study for inclusion due to its scenic, recreational, historic, or other similar values. This Act establishes requirements applicable to water resource projects and protects both the river, or river segments, and the land immediately surrounding them.

There are no rivers within the project site or in the immediate vicinity which are included under this National Wild and Scenic Rivers System, or rivers under study for its inclusion. Consequently, this project would not impact such designated rivers or be in conflict with this Act's requirements.

#### **7.5.11 Wilderness Act**

The Wilderness Act (16 U.S.C. § 1131) establishes a system of National Wilderness areas and a policy for protecting and managing this system. The Act prohibits motorized equipment, structures, roads, commercial enterprises, aircraft landings, and mechanical transport in these areas.

There are no areas within the project site or in the immediate vicinity which are included under this National Wilderness system. Consequently, this project would not impact such wilderness areas or be in conflict with this Act's restrictions on uses.

#### **7.5.12 Environmental Justice**

Executive Order 12898 covering Environmental Justice is intended to ensure that Federal agencies identify and address disproportionately high and adverse human health or the environmental effects of their policies, programs, and activities on minority and low income populations.

The proposed improvements would not result in a disproportionately high impact on minority populations or low-income populations in the area. This includes short-term construction related effects, long-term, and cumulative effects as discussed in various sections of this document.

The project would not require the acquisition or displacement of homes and the

associated effects on resident populations from such actions because the project involves infrastructure improvements primarily within existing roadways and homeowner association-owned common areas within QLV. Because the homes are privately owned within QLV, each individual sewer connection lateral will be paid for and constructed by each individual landowner. Therefore, improvements would not result in adverse effects on minority and low income populations, and this project would be consistent with Executive Order 12898 regarding Environmental Justice.

## CHAPTER 8: AGENCY AND PUBLIC CONSULTATION

Consultation with various federal, state, and county government agencies was conducted to obtain their comments and concerns associated with the project as part of the environmental assessment process.

### 8.1 DRAFT EA PRE-ASSESSMENT CONSULTATION

Letters providing project information along with a preliminary site plan were sent to various consulted parties in September 2006 to solicit their initial comments and concerns associated with the project as part of the preparation of this Draft EA. A listing of agencies and organizations for which consultation letters were sent is provided below. Those providing written response are identified with a “»” symbol. Copies of written comments received along with written responses are included in Appendix B. Comments received have been addressed in the appropriate sections of this Draft EA.

#### Federal Agencies

- Department of Agriculture, Natural Resources Conservation Service
- » Department of the Army, U.S. Army Engineer District, Honolulu
- Department of the Interior, National Park Service, Pacific West Region
- Department of the Interior, Water Resources Division, Geological Survey
- Department of the Interior, Fish and Wildlife Service, Pacific Island Region
- Department of Transportation, Federal Highway Administration, Hawai‘i Division

#### State of Hawai‘i Agencies

- » Department of Accounting and General Services
- Department of Agriculture
- Department of Business, Economic Development and Tourism
- » Department of Business, Economic Development and Tourism, Land Use Commission
- Department of Business, Economic Development and Tourism, Office of Planning
- » Department of Education
- Department of Hawaiian Home Lands
- Department of Health, Environmental Planning Office
- Department of Land and Natural Resources
- » Department of Land and Natural Resources, State Historic Preservation Division
- » Department of Transportation
- » Department of Transportation, Hawai‘i District Office, Highway Division
- » Office of Hawaiian Affairs

### **County of Hawai'i Agencies**

- Civil Defense Agency
- Department of Parks and Recreation
- Department of Research and Development
- Department of Water Supply
- Office of the Mayor
- » Fire Department
- » Police Department
- » Planning Department

### **Community Groups**

- Senator Paul Whalen, 3<sup>rd</sup> Senatorial District
- Representative Josh Green, 6th Representative District
- Council Member Angel Pilago
- Secretary Elizabeth Meyerson, Board of Directors, Queen Lili'uokalani Village Community Association

### **Non-Governmental Agencies**

- Hawaiian Electric Light Company, Inc.
- » Hawaiian Telecom, Inc.

## **8.2 DRAFT EA CONSULTATION**

Copies of the Draft EA for this project was distributed to the following agencies and individuals listed below. Those providing written response are identified with a "»" symbol. Copies of written comments received along with written responses are included in Appendix B. Comments received have been addressed in the appropriate sections of this Final EA.

### **Federal Agencies**

- Department of Agriculture, Natural Resources Conservation Service
- Department of the Army, U.S. Army Engineer District, Honolulu
- Department of the Interior, National Park Service, Pacific West Region
- » Department of the Interior, Water Resources Division, Geological Survey
- Department of the Interior, Fish and Wildlife Service, Pacific Island Region
- Department of Transportation, Federal Highway Administration, Hawai'i Division

### **State of Hawai'i Agencies**

- Department of Accounting and General Services
- Department of Agriculture
- Department of Business, Economic Development and Tourism

- Department of Business, Economic Development and Tourism, Land Use Commission
- Department of Business, Economic Development and Tourism, Office of Planning
  - » Department of Education
- Department of Hawaiian Home Lands
- Department of Health, Environmental Planning Office
- Department of Land and Natural Resources
  - » Department of Land and Natural Resources, State Historic Preservation Division
  - » Department of Transportation
- Department of Transportation, Hawai'i District Office, Highway Division
- Office of Hawaiian Affairs

**County of Hawai'i Agencies**

- Civil Defense Agency
- Department of Parks and Recreation
- Department of Research and Development
  - » Department of Water Supply
- Office of the Mayor
- Fire Department
  - » Police Department
  - » Planning Department

**Community Groups**

- Senator Paul Whalen, 3<sup>rd</sup> Senatorial District
- Representative Josh Green, 6th Representative District
- Council Member Angel Pilago
- Secretary Elizabeth Meyerson, Board of Directors, Queen Lili'uokalani Village Community Association

**Non-Governmental Agencies**

- » Hawaiian Electric Light Company, Inc.
- Hawaiian Telecom, Inc.
- Kailua-Kona Public Library

## CHAPTER 9: FINDINGS AND DETERMINATION

To determine whether a proposed action may have a significant effect on the environment, the Approving Agency needs to consider every phase of the action, the expected primary and secondary consequences, cumulative effect, and the short- and long-term effects. The Approving Agency's review and evaluation of the proposed action's effect on the environment would result in a determination whether: 1) the action would have a significant effect on the environment, and an Environmental Impact Statement Preparation Notice should be issued, or 2) the action would not have a significant effect warranting a Finding of No Significant Impact (FONSI).

This chapter discusses the results of the assessment conducted for the proposed improvements associated with the Queen Lili'uokalani Village Large Capacity Cesspool Conversion project in relation to the 13 Significance Criteria prescribed under the State Department of Health's Administrative Rules Title 11, Chapter 200. The purpose of this assessment was to consider the "significance" of potential environmental effects which includes the sum of effects on the quality of the environment along with the overall and cumulative effects. The findings are discussed below for each of these criteria.

### 9.1 FINDINGS

- 1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.*

The project should not result in the irrevocable commitment to loss or destruction of natural or cultural resources. As discussed in the various chapters of this document, the improvements would not negatively impact natural or cultural resources of significance. The property being used for the collections system are within the County of Hawai'i right-of-way. The project area's current conditions consist of a developed residential subdivision with homes and paved roadways. The proposed project would be constructed within already urbanized areas. Thus, it would avoid destruction or loss of significant, endangered, or threatened botanical, faunal, geological, or other natural resources because are known to be present.

In terms of archaeological resources, there are no known culturally significant sites within or surrounding the project areas nor are these areas known to be used for traditional native Hawaiian or other cultural practices. However, in the event subsurface historic properties or burials are encountered during construction, all work would stop and the SHPD notified. Treatment of findings would be conducted in compliance with Chapter 6E, HRS and the §13-300, Hawai'i Administrative Rules.

The project would also not restrict access to surrounding land areas which may be potentially used for traditional gathering or other cultural practices. The project would not

prevent access to shoreline areas.

*2. Curtails the range of beneficial uses of the environment.*

The project would not curtail the range of beneficial uses of the surrounding environment. The present and historic uses of the QLV subdivision has been residential. Thus, the improvements planned would not change the existing uses of such lands. The project would provide a needed improvement to the QLV subdivision residential community by providing improved wastewater collection and treatment systems.

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

The improvements would not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS. A discussion of the project's consistency with applicable guidelines was provided in a previous chapter. This Draft EA addressed the probable environmental impacts associated with the project of which most would be primarily associated with short-term construction activities. Consequently, the improvements are not expected to have a significant impact on natural resources or the surrounding environment.

*4. Substantially affects the economic or social welfare, or cultural practices of the community or State.*

As discussed in this document, the project would not have significant negative impacts on the QLV subdivision community's economic or social welfare. This project would create some minor short-term construction related jobs and increased tax revenue that would have a minor positive effect on the overall economy of the county and state.

This project is not expected to significantly affect traditional native Hawaiian cultural practices occurring in the project area or surrounding areas. There are no known traditional cultural practices occurring within the project site because the project site is within the established residential community of Queen Lili'uokalani Village. Consequently, the proposed project is not expected to have an adverse impact on cultural resources or traditional cultural practices and would also not restrict access to surrounding areas which may be potentially used for traditional native Hawaiian cultural practices.

*5. Substantially affects public health.*

The project is not expected to substantially affect public health because it would involve improvements to the community's existing wastewater collection system. The proposed facilities are designed to improve soil and ground water quality by preventing untreated sewage from percolating directly in the ground. The proposed project will also reduce the likelihood of releasing disease causing pathogens and other contaminants, such as nitrate, into ground water, streams, and eventually the ocean.

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Construction activities are similarly not expected to cause significant air pollution in the form of fugitive dust or generate other type of pollutants which may have an adverse affect on public health. Construction activities would occur only during a short time period, and best management practices would be incorporated into the project's design to further minimize nuisances and other typical impacts associated with construction activity.

*6. Involves substantial secondary impacts, such as population changes or effects on public facilities.*

This project should not have secondary impacts on the social environment or other infrastructure and public facilities. The project is limited to the conversion of Large Capacity Cesspools to sewer collection system. As a result, the improvements do not include new housing units or visitor unit which would affect the area's resident population and demand for public facilities. Therefore, there are no elements of the project contributing to relocation of residents or additional visitors to the island. The project would also not significantly impact other public facilities or infrastructure in the immediate area due to the types of improvements being proposed as discussed previously in this document.

*7. Involves a substantial degradation of environmental quality.*

The improvements would not involve a substantial degradation to the quality of the surrounding environment. This document discussed the probable impacts of several environmental factors associated with these improvements which determined that there should not be an adverse impact on the quality of the existing environment. The overall impact of the proposed project would increase the quality of the environment by preventing untreated wastewater from entering the ground and reducing the likelihood of releasing other contaminants.

*8. Is individually limited, but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.*

This project only involves the conversion of Large Capacity Cesspools to a sewer collection system, and therefore does not involve a commitment for larger actions. Impacts associated with these improvements were addressed in this document and are mainly associated with short-term construction related activities. Consequently, this project would not have an adverse significant impact on the environment both individually and cumulatively.

*9. Substantially affects a rare, threatened, or endangered species, or its habitat.*

As discussed in this document, there are no known endangered, threatened, or rare botanical resources within the project site. The improvements would also not substantially affect endangered or threatened faunal or avifaunal resources which may occur in the general vicinity. Necessary control measures and best management practices would also be implemented to minimize runoff and other potential short-term impacts associated with

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construction activity. Thus, the project is not expected to substantially affect rare, threatened, or endangered species or potential habitat for such species.

*10. Detrimentally affects air or water quality or ambient noise levels.*

This project should not have a detrimentally significant impact on air, water quality, or ambient noise levels in the immediate vicinity of the project site. Impacts associated with these factors would mainly be limited to short-term construction activities. The immediate surrounding area is comprised of agricultural uses and open pastures. There are scattered housing units located in the surrounding area, but none are situated in the immediate vicinity of the project site. Short-term construction related impacts are expected to be minor due to the relatively low amount of grading and excavation required. To further minimize impacts, construction activities would be subject to applicable state regulations addressing air quality, noise, and water quality.

*11. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.*

The project site is not located within an environmentally sensitive area, nor is it situated within a tsunami inundation zone, erosion prone area, or geologically hazardous areas. Consequently, construction of the new wastewater collection would not be affected by those hazards or impact such environmentally sensitive areas. Furthermore, construction of the new wastewater collection would be done in compliance with applicable county building codes and DEM system standards.

*12. Substantially affects scenic vistas and viewplanes identified in county or state plans or studies.*

The project would not affect scenic vistas or view planes as discussed previously in this document. There are no significant views or landforms in the immediate vicinity which would be adversely affected by the project.

*13. Requires substantial energy consumption.*

The project would not require substantial energy consumption or increased capacity of supporting electrical facilities because it is limited to the conversion of the large capacity cesspool to sewer collection system. Improvements planned are relatively minor and can be serviced using existing electrical distribution facilities and power generating sources.

## **9.2 DETERMINATION**

A Finding of No Significant Impact (FONSI) determination is warranted for the Queen Lili'uokalani Village Subdivision Large Capacity Cesspool Conversion project based upon the information provided in this Final EA document. The results of the assessments conducted have determined that the sewer collection system proposed should not have a significant impact on the project area or the surrounding environment. The preliminary findings supporting this anticipated determination are based upon the previous discussion of the project's affect on the environment in relation to the 13 Significance Criteria.

## CHAPTER 10: BIBLIOGRAPHY

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## **APPENDIX A**

### **SITE PHOTOS**

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



080922\_QLV\_Standing on NE side of intersection looking NE 2.jpg



080922\_QLV\_Standing on NE side of intersection looking NE.jpg

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



080922\_QLV\_Standing on NE side of intersection looking north 2.jpg

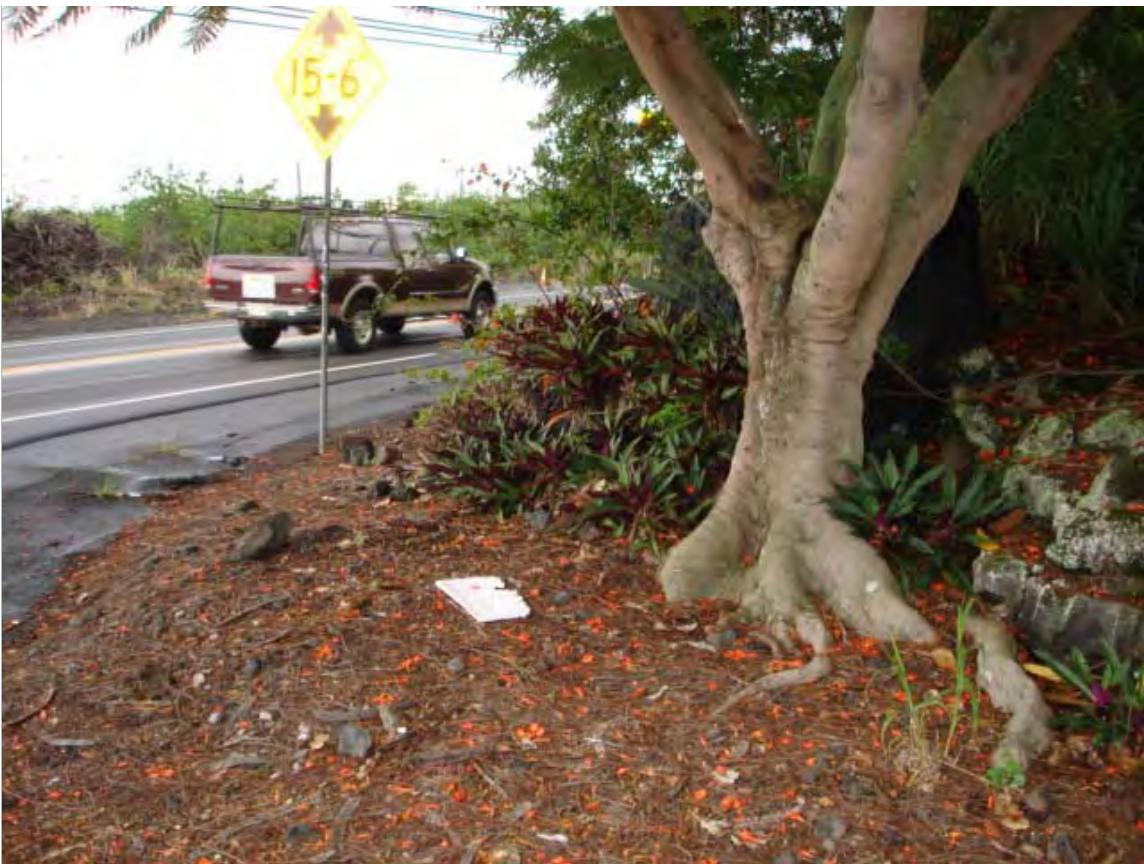


080922\_QLV\_Standing on NE side of intersection looking North.jpg

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



080922\_QLV\_Standing on NE side of intersection looking NW 2.jpg

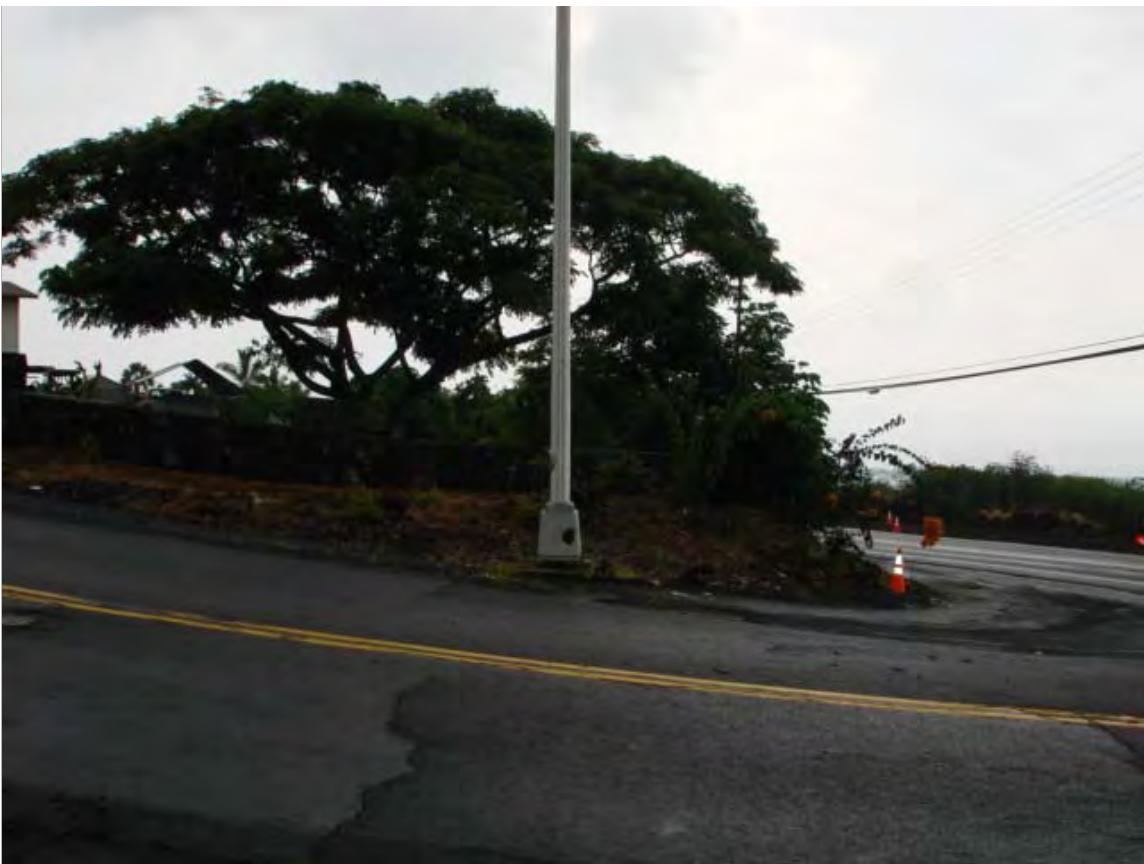


080922\_QLV\_Standing on NE side of intersection looking NW.jpg

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



080922\_QLV\_Standing on NE side of intersection looking SE 2.jpg



080922\_QLV\_Standing on NE side of intersection looking SE.jpg

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



080922\_QLV\_Standing on NE side of intersection looking south.jpg



080922\_QLV\_Standing on NE side of intersection looking SW 3.jpg

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



080922\_QLV\_Standing on NE side of intersection looking West.jpg



080922\_QLV\_Standing on SE corner of intersection looking North 2.jpg

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



080922\_QLV\_Standing on SE corner of intersection looking north 3.jpg



080922\_QLV\_Standing on SE corner of intersection looking South 3.jpg

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



080922\_QLV\_Standing on SE side of intersection looking North.jpg



080922\_QLV\_Standing on SE side of intersection looking south 2.jpg

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



080922\_QLV\_Standing on SE side of intersection looking south.jpg



080922\_QLV\_Standing on SE side of intersection looking SW.jpg

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



080922\_QLV\_Standing on SE side of intersection looking West.jpg



View East along Palani Road.JPG

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



View East down Namaka Place.JPG



View East from Palani Road and Palihiolo.JPG

Queen Liliuokalani Village Subdivision Large Capacity Cesspool Conversion Project



View NW down Palihiolo Place.JPG



View NW from Palihiolo to Kaalaea Place.JPG

## **APPENDIX B-1**

### **PRE-ASSESSMENT CONSULTATION**

**SSFM INTERNATIONAL, INC.**  
 301 Summer Street, Suite 620  
 Honolulu, Hawaii 96817  
 Phone: (808) 531-1308  
 Fax: (808) 521-7348

Project Managers, Planners, & Engineers  
 American Council of Engineering Companies, Member



SSFM 2005\_080.000

Project Managers, Planners, & Engineers  
 American Council of Engineering Companies, Member

September 1, 2009

**FILE COPY**

SEP 25 2006

**RECEIVED**

Dear Mr. Sato:  
 Mr. Ronald A. Sato, AICP  
 SSFM International, Inc.  
 501 Summer Street, Suite 620  
 Honolulu, HI 96817

**SUBJECT:** Chapter 6E-42 Historic Preservation Review –  
 Queen Liliuokalani Subdivision Large Capacity Cesspool Conversion Project  
 Keaholu Ahupua'a, North Kona District, Island of Hawai'i  
 TMK:(3) 7-4-011 & 7-4-013

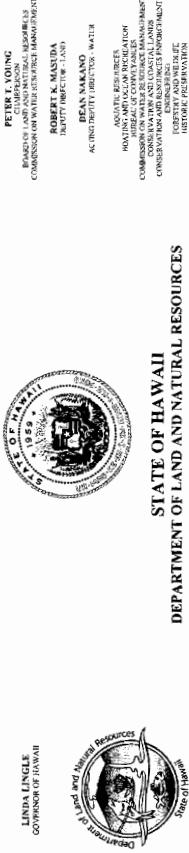
Thank you for affording us the opportunity to comment on this proposed project in advance of Environmental Assessment (EA) preparation. A search of our files and library indicates that extensive archaeological remains have been identified in the general area, but it is not clear if an historic preservation review was conducted for these plats. We recommend that a thorough review of the proposed project area and potential effects of this project on historic properties be undertaken as part of the EA.

Please contact Dr. Julie Taomia of the State Historic Preservation Division, Hawai'i Section, at (808) 327-3691 with any comments or questions.

Aloha,

*Melanie Chinen*  
 Melanie Chinen, Administrator  
 State Historic Preservation Division

JT:gf



**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
 STATE HISTORIC PRESERVATION DIVISION  
 601 KAMOKILA BOULEVARD, ROOM 555  
 KAPOLEI, HAWAII 96707

STATE INTERNATIONAL, INC.  
 RECEIVED

September 21, 2006

LOG NO: 2006.3115  
 DOC NO: 06094760  
 Archaeology

**FILE**

Ms. Pua Ai, Ph.D., Administrator  
 State Historic Preservation Division  
 Department of Land and Natural Resources  
 State of Hawai'i  
 601 Kamokila Boulevard, Room 555  
 Kapolei, Hawai'i 96707

Dear Ms. Ai:

Subject: Queen Lili'uokalani Village Subdivision  
 Large Capacity Cesspool Conversion Project  
 Pre-Assessment Consultation for Draft Environmental Assessment  
 North Kona, Hawai'i

Thank you for your department's letter dated September 21, 2006 regarding the pre-assessment consultation efforts for preparation of the Draft Environmental Assessment (DEA) for the subject project.

We will address the impacts to the known historical sites within the DEA document. We will provide SHPD with a copy of the DEA for this project for review and approval. Consultation with the appropriate Historic and Preservation groups will be conducted as a part of this Environmental Assessment.

If you have any questions on this matter, please contact me at 531-1308. Thank you.

Sincerely,

*Jared K. Chang*  
 Jared K. Chang  
 Project Planner



DEPARTMENT OF THE ARMY  
U.S. ARMY ENGINEER DISTRICT, HONOLULU  
FT. SHAFTER, HAWAII 96858-5440

RECEIVED

SEP 26 2006

JAS

ATTENTION OR

September 21, 2006

File No. POH-2006-384

FILE COPY

REPLY TO

Regulatory Branch

Ronald A. Sato

SSFM International, Inc.  
501 Summer Street, Suite 620  
Honolulu, Hawaii 96817

Dear Mr. Sato:

This letter is in response to your letter dated September, 2006 for pre-assessment consultation review comments for a large capacity cesspool (LCC) conversion project for the Queen Liliuokalani Subdivision, North Kona District, Hawaii Island, Hawaii (IMKs: (3<sup>rd</sup>) 7-04-011 and 7-04-013).

Based on the preliminary information you provided as agent for the County of Hawaii, Department of Environmental Management – Technical Services Section (DEM), we are unable determine whether the proposed project will require a DA permit. Please submit to our office for review and comments a copy of the project's environmental assessment (EA).

The Corps requests a copy of the draft EA (dEA) for evaluation and comments. At that time it may then be determined whether a Department of the Army (DA) permit for activities under Section 404 of the Clean Water Act (CWA) and/or Section 10 of the Rivers and Harbors Act (RHA) of 1899 may, or may not be required for the proposed project. The EA should indicate whether waters of the United States, as represented by the Pacific Ocean, perennial, or intermittent stream, and wetlands are in, or adjacent to, or absent from the proposed project area. The dEA should state in appropriate sections that there is, or no potential for waters of the U.S., including wetlands, anchialine ponds, and other special aquatic sites, to be directly and/or indirectly impacted by the proposed work and associated ground disturbing activities within the proposed improvement area.

Thanks you for your consideration of potential impacts to the aquatic environment. Please contact Ms. Joy Anamizu of my staff at 808-438-7023, by facsimile at 808-438-4060, or by e-mail at [joy.n.anamizu@usace.army.mil](mailto:joy.n.anamizu@usace.army.mil), if you have any questions regarding this project and refer to the file number above.

Sincerely,

George P. Young, P.E.  
Chief, Regulatory Branch



**SSFM INTERNATIONAL, INC.**  
501 Summer Street, Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 631-1308  
Fax: (808) 621-7348  
Project Managers, Planners, & Engineers  
American Council of Engineering Companies, Member

SSFM 2005\_080.000

September 1, 2009

Mr. George P. Young, P.E., Chief  
Regulatory Branch  
Department of the Army  
US Army Engineer District  
Fort Shafter, Hawaii 96858-5440

Dear Mr. Young:

Subject: Queen Liliuokalani Village Subdivision  
Large Capacity Cesspool Conversion Project  
Pre-Assessment Consultation for Draft Environmental Assessment  
North Kona, Hawaii

Thank you for your letter dated September 21, 2006 regarding the pre-assessment consultation efforts for preparation of the Draft Environmental Assessment (DEA) for the subject project. As requested, copies of the DEA will be provided for your review and comment. We also note in the DEA that there are no streams or wetlands within the project area or in the vicinity. At this time, there are no indications that any cut/fill will be discharged into waters near the project site therefore, it is not anticipated that a DA permit will be required.

If you have any questions on this matter, please contact me at 531-1308. Thank you.

Sincerely,  
SSFM INTERNATIONAL, INC.

Jared K. Chang  
Project Planner

**Harry Kim**  
*Mayor*



**Christopher J. Yuen**  
*Director*  
**Brad Kurokawa, ASLA**  
*LEED® AP*  
*Deputy Director*

**County of Hawaii**  
**PLANNING DEPARTMENT**

101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043  
(808) 961-8288 • FAX (808) 961-8742

OCT 03 2006

*ras*

**FILE COPY**

September 25, 2006

Mr. Ronald A. Sato, AICP  
Senior Project Planner  
SSFM International, Inc.  
501 Sumner Street, Suite 620  
Honolulu HI 96817

Dear Mr. Sato:

**SUBJECT:** Pre-Assessment Consultation for Draft Environmental Assessment  
**Applicant:** County of Hawaii, Department of Environmental Management Technical Services Section  
**Project:** Sewer Improvements  
**TMK:** Portions of 9-4-11 to 13, Queen Liliuokalani Subdivision,  
North Kona, Hawaii

According to your September 8, 2006 letter, the sewer improvements would eliminate large capacity cesspools and convert them into approved Individual Wastewater Systems. In addition, conceptual plans would be developed to provide connections to a future sewer collection system for treatment and disposal at the Kealakehe Treatment Plant.

We have the following comments to offer:

1. Based on your *Tax Map Key Boundary* map, the Plats affected by the proposed improvement should also include Plat 12.
2. All of the affected parcels are designated Urban by the State Land Use Commission.

*Hawai'i County is an Equal Opportunity Provider and Employer.*

Mr. Ronald A. Sato, AICP  
SSFM International, Inc.  
Page 2  
September 25, 2006

3. The General Plan designations for the affected parcels appear to include Medium Density Urban and Low Density Urban. Medium Density Urban is characterized as "Village and neighborhood commercial and single family and multiple family residential and related functions (multiple family residential – up to 35 units per acre)". Low Density Urban is characterized as "Residential, with ancillary community and public uses, and neighborhood and convenience type commercial uses; overall residential density may be up to six units per acre".
4. Queen Liliuokalani Village was an "experimental" affordable residential housing project. County zoning of the lots in the project area is Single-Family Residential – 15,000 s.f. (RS-15). These lots are considered to be non-conforming because they range in size from 3,500 s.f. to 10,177 s.f., less than the minimum 15,000 s.f. required by the Zoning Code.
5. None of the plats are located within the County's Special Management Area.

We appreciate the opportunity to comment on the proposed sewer improvements to serve the Queen Liliuokalani Village Subdivision.  
If you have questions, please contact Esther Imanura or Larry Brown of this office at 961-8288, extension 237 or 258, respectively.

Sincerely,

*Christopher J. Yuen*  
**CHRISTOPHER J. YUEN**  
Planning Director

ETI:cd  
(C6531)\planning\public\wp\wind\NET\LEAD\draft\re-consul\Sato\SSPM\Queen LLC Conversion.rtf

xc: Planning Department - Kona



**SSFM INTERNATIONAL, INC.**  
501 Summer Street, Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 531-1308  
Fax: (808) 521-7348

Project Managers, Planners, & Engineers  
American Council of Engineering Companies, Member

September 1, 2009

2005\_080.000

Ms. Bobby Jean Leithhead-Todd, Planning Director  
Planning Department  
County of Hawai'i  
101 Panahi Street, Suite 3  
Hilo, Hawai'i 96720  
Dear Mr. Christopher J. Yuen:

Subject: Queen Lili'uokalani Village Subdivision  
Large Capacity Cesspool Conversion Project  
TMK: (3) 7-04-011, 012, and 013  
Pre-Assessment Consultation for Draft Environmental Assessment  
North Kona, Hawai'i

Thank you for your department's letter dated September 25, 2006 providing pre-assessment consultation comments for the preparation of the Draft Environmental Assessment (Draft EA) for the subject project.

Information associated with parcels being serviced by the sewer improvements will be clarified in the Draft EA. Graphic showing the State Land Use District designations for parcels affected or being serviced by the project will also be provided in the document.

We appreciate and confirm the General Plan designations and Zoning district information provided for the project area. Graphics showing these designations for parcels affected or being serviced by the project will be provided in the Draft EA.

We concur with your department's determination that public uses are permitted uses in any zoning district provide the Director has issued plan approval for the use. Discussion of the project's consistency with zoning district regulations will be provided. We also confirm that the proposed improvements are not situated within the County's Special Management Area.

If you have any questions on this matter, please contact me at 531-1308. Thank you.

Sincerely,  
**SSFM INTERNATIONAL, INC.**  
  
Jeff K. Chang  
Project Planner



LINDA LINGLE  
GOVERNOR

**STATE OF HAWAII**

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
P.O. BOX 119, HONOLULU, HAWAII 96810

(P)1207.6

SEP 28 2006

RAS

SEP 26 2006

**FILE COPY**

Mr. Ronald A. Sato, AICP  
SSFM International, Inc.  
501 Summer Street, Suite 620  
Honolulu, HI 96817

Dear Mr. Sato:

SUBJECT: Queen Lili'uokalani Subdivision  
Large Capacity Cesspool Conversion Project  
Pre-Assessment Consultation for Draft Environmental Assessment  
Various TMKs, Queen Lili'uokalani Subdivision, Hawaii

Thank you for the opportunity to review the information regarding the subject project. The project does not impact any of the Department of Accounting and General Services' projects or existing facilities and we have no comments to offer.

If you have any questions, please have your staff call Mr. David DePonte of the Planning Branch at 586-0492.

Sincerely,

**ERNEST Y. W. LAU**  
Public Works Administrator

DD:mno  
c: Ms. Genevieve Salmonson, OEQC  
Mr. Glenn Okada, DAGS Hawaii District Office

SSFM INTERNATIONAL, INC.  
RECEIVED  
REF ID: 0-4-2006  
**ras**  
FILE COPY  
IN REPLY REFER TO:  
BRIAN H. SEKIGUCHI  
BRENNON T. MOROKA  
FRANCIS PAUL KEINO  
BARRY YUKUNAGA  
RODNEY K. HARAGA  
DIRECTOR  
Deputy Directors



LINDA LINGLE  
GOVERNOR

**SSFM INTERNATIONAL, INC.**  
501 Sumner Street, Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 531-1308  
Fax: (808) 521-7348

Project Managers, Planners, & Engineers  
American Council of Engineering Companies, Member

SSFM 2005\_080.000

September 1, 2009

Mr. Ernest Y. W. Lau, Public Works Administrator  
Department of Accounting and General Services  
State of Hawai'i  
P.O. Box 119  
Honolulu, Hawai'i 96810  
North Kona, Hawai'i

Dear Mr. Lau:

Subject: Queen Lili'uokalani Village Subdivision  
Large Capacity Cesspool Conversion Project  
Pre-Assessment Consultation for Draft Environmental Assessment  
North Kona, Hawai'i

Thank you for your letter dated September 26, 2006 regarding the pre-assessment consultation efforts for preparation of the Draft Environmental Assessment for the subject project.

We note you have no comments to offer at this time.

If you have any questions on this matter, please contact me at 531-1308. Thank you.

Sincerely,

SSFM INTERNATIONAL, INC.

Jared K. Chang  
Project Planner



Mr. Ronald A. Sato  
SSFM International, Inc.

501 Sumner Street, Suite 620  
Honolulu, Hawaii 96817

Dear Mr. Sato:

Subject: Queen Lili'uokalani Subdivision, Kailua-Kona, Hawaii  
Pre-Assessment Consultation for Draft Environmental Assessment  
Large Capacity Cesspool Conversion Project

Thank you for your notification of the proposed project.

The project borders a portion of Palani Road that is under County jurisdiction and is not expected to have significant impact on our State highways. However, there may be interruption of traffic along Palani Road where Mamalahoa Highway transitions to Palani Road and at the Palani Road-Queen Kaahumanu Highway intersection during project construction. Appropriate measures should be taken to minimize these temporary impacts if possible.

We appreciate the opportunity to provide our comments.

Very truly yours,

RODNEY K. HARAGA  
Director of Transportation

## FILE COPY

25 INTERNATIONAL, INC.  
 RECIPIENT  
 RONNEY K. HARAGA  
 DIRECTOR  
 Deputy Directors  
 FRANCIS PAUL KEENO  
 BARRY FUKUAGA  
 BRENNON T. MORIOKA  
 BRIAN H. SEKIGUCHI  
 IN REPLY REFER TO  
 HWY-H 06-2.0785



LINDA LINGLE  
 GOVERNOR

**SSFM INTERNATIONAL, INC.**  
 501 Summer Street, Suite 620  
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 Phone: (808) 531-1308  
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Project Managers, Planners, & Engineers  
 American Council of Engineering Companies Member

SSFM 2005\_080.000

September 1, 2009

Mr. Brennon T. Morioka, Ph.D., Director  
 Department of Transportation  
 State of Hawai'i  
 869 Punchbowl Street  
 Honolulu, Hawai'i 96813-5097  
 Dear Mr. Morioka:

Subject: Queen Lili'uokalani Village Subdivision  
 Large Capacity Cesspool Conversion Project (STP 8-2286)  
 Pre-Assessment Consultation for Draft Environmental Assessment  
 North Kona, Hawai'i

Thank you for your department's letter dated September 29, 2006 regarding the pre-assessment consultation efforts for preparation of the Draft Environmental Assessment (DEA) for the subject project.

We note you have no comments to offer at this time, but are concerned about the possible interruption in traffic at the Palani Road and Manalahoa Highway intersection during construction. Copies of the DEA will be submitted to the Hawai'i District Office for review and comment to help address those concerns.

If you have any questions on this matter, please contact me at 531-1308. Thank you.  
 Sincerely,

SSFM INTERNATIONAL, INC.

Jared K. Chang  
 Project Planner

FILE COPY

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
 HAWAII DISTRICT  
 50 NAKALA A STREET  
 Hilo, Hawaii 96720  
 TELEPHONE: (808) 933-8886 • FAX: (808) 933-9869  
 September 27, 2006  
 FILE

Mr. Ronald A. Sato, AICP  
 Senior Project Planner  
 SSFM International, Inc.  
 501 Summer Street, Suite 620  
 Honolulu, Hawaii 96817

Dear Mr. Sato:

SUBJECT: Queen Lili'uokalani Subdivision Large Capacity Cesspool Conversion Project  
 Pre-Assessment Consultation for Draft Environmental Assessment  
 Queen Lili'uokalani Subdivision, North Kona, Hawaii  
 Project No. F-10(5)

Thank you for your letter requesting our comments on the subject project.

The project area about a section of Palani Road which is under the jurisdiction of the County of Hawaii. We look forward to reviewing the complete Draft Environmental Assessment when it is complete.  
 Please note that any letter providing comments for projects that are required under Chapter 343 HRS and Title 11, Chapter 200 HAR will be made through the director's office of the Department of Transportation.

We appreciate your providing this advance notice.

If you have any questions please call Mr. Clinton Yamada at 933-1951.  
 Very truly yours,  
  
 STANLEY M. TAMURA  
 Hawai'i District Engineer



**SSFM INTERNATIONAL, INC.**  
501 Summer Street, Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 531-1308  
Fax: (808) 521-7348

Project Managers, Planners, & Engineers  
American Council of Engineering Companies Member

SSFM 2005\_080.000

September 1, 2009

Mr. Stanley M. Tamura, Hawai'i District Engineer  
Highways Division  
Department of Transportation  
State of Hawai'i  
50 Makaha Street  
Hilo, Hawai'i 96720

Dear Mr. Tamura:

Subject: Queen Lili'uokalani Village Subdivision  
Large Capacity Cesspool Conversion Project (HWY-II 06-2-0785)  
Pre-Assessment Consultation for Draft Environmental Assessment  
North Kona, Hawai'i

Thank you for your letter dated September 27, 2006 regarding the pre-assessment consultation efforts for preparation of the Draft Environmental Assessment (DEA) for the subject project.

We note that a section of Palani Road that abuts the project area is under the jurisdiction of the County of Hawaii. A copy of the DEA will be sent to your office for further review.

If you have any questions on this matter, please contact me at 531-1308. Thank you.

Sincerely,

SSFM INTERNATIONAL, INC.

Jared K. Chang  
Project Planner

**SSFM International, Inc.**  
Network Engineering and Planning  
OSP Engineering - Hawaii

Project Managers, Planners, & Engineers

American Council of Engineering Companies Member

SSFM 2005\_080.000

September 19, 2006

**FILE COPY**

**SSFM International, Inc.**  
501 Summer Street, Suite 620  
Honolulu, Hawaii 96817

**Subject: Queen Lili'uokalani Subdivision Large Capacity Cesspool conversion Project  
Pre-Assessment Consultation for Draft Environmental Assessment Queen  
Lili'uokalani Subdivision, North Kona, Hawai'i**

Dear Mr. Sato:

Thank you for your inquiry for the aforementioned project. Hawaiian Telcom, Inc. does have underground facilities in the roadway of this subdivision. Please provide plans if any work will be done in the roadway so we may comment on the plans. HTI does not provide plans of the underground infrastructure. However you are welcome to view the underground infrastructure in our office and to ask questions pertaining to those records. Please call 933-6488 to make arrangements to view the underground infrastructure records.

It is recommended that you view the records in the Kona Office as the engineers there are more familiar with what is in the field.

If there are any questions or problems in meeting our request, please call Michael Chang at 933-6488.

Sincerely,

Goddon Yadao  
Section Manager-Network Engineering

GY/MC/km

cc: TPS# 06154  
S. Kamakau

CONFIDENTIAL  
REF ID: 266  
VAB  
FILE  
SEP 20 2006  
16 Kinole Street  
Hilo, HI 96720  
Phone 808 933-6488  
Fax 808 935-0475

**Hawaiian Telcom**

**SSFM INTERNATIONAL, INC.**

501 Sumner Street, Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 531-1308  
Fax: (808) 521-7348

Project Managers, Planners, & Engineers  
American Council of Engineering Companies Member

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September 1, 2009

Mr. Gordon Yadao, Section Manager-Network Engineer  
Hawaiian Telcom  
161 Kinole Street  
Hilo, Hawaii 96720

Dear Mr. Yadao:

Subject: Queen Lili'uokalani Village Subdivision  
Large Capacity Cesspool Conversion Project  
Pre-Assessment Consultation for Draft Environmental Assessment  
North Kona, Hawaii

Thank you for your letter dated September 19, 2006 regarding the pre-assessment consultation efforts for preparation of the Draft Environmental Assessment for the subject project.

We note your comment that Hawaiian Telcom, Inc. does have underground facilities within the above-referenced subdivision. The County will provide plans for you review and comment.

If you have any questions on this matter, please contact me at 356-1261. Thank you.

Sincerely,

SSFM INTERNATIONAL, INC.

Jared K. Chang  
Project Planner

PHONE (808) 594-1888  
FAX (808) 594-1885  
**SEP 29 2006**

RECEIVED  
STATE OF HAWAII  
FILE COPY



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

RECEIVED  
FILE COPY

HRD06/2706

September 25, 2006

Ronald A. Sato, AICP  
SSFM International, Inc.  
501 Summer Street, Suite 620  
Honolulu, HI 96817

**RE: Queen Liliuokalani Subdivision Large Capacity Cesspool Conversion Project,  
Pre-Assessment Consultation for Draft Environmental Assessment, Hawaii, TMK 7-4-  
011 & 7-4-013.**

Dear Mr. Sato,

The Office of Hawaiian Affairs (OHA) is in receipt of your September 12, 2006 submission and offers the following comments:

Our staff recommends that the Draft Environmental Assessment (EA) you are preparing include a professional "due diligence" study of the potential impact of this project on archaeological, historic, and cultural resources. We also recommend contacting Ruby McDonald of OHA's Kailua-Kona office in order to improve the consultation component of your DEA.

OHA further requests your assurances that if this project goes forward, should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorek, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

Aloha,

Clyde W. Nanu'o  
Administrator



**SSFM INTERNATIONAL, INC.**  
501 Summer Street, Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 531-1308  
Fax: (808) 521-7348

Project Managers, Planners, & Engineers  
American Council of Engineering Companies Member

September 1, 2009

SSFM 2005\_080.000

Dear Mr. Nāmu'o:

Mr. Clyde W. Nāmu'o, Administrator  
Office of Hawaiian Affairs  
State of Hawai'i  
711 Kapi'olani Boulevard, Suite 500  
Honolulu, Hawai'i 96813

Subject:

Queen Lili'uokalani Village Subdivision  
Large Capacity Cesspool Conversion Project  
Pre-Assessment Consultation for Draft Environmental Assessment  
North Kona, Hawai'i

Thank you for your letter dated September 25, 2006 regarding the pre-assessment consultation efforts for preparation of the Draft Environmental Assessment (DEA) for the subject project.

We note your recommendation to prepare a professional "due diligence" study.

Consultation with the State Historic Preservation Division will be conducted during this process to determine necessary mitigative measures.

The contractor will also be required to comply with the provisions of Section 6E, HRS and Chapter 13-300, HAR.

If you have any questions on this matter, please contact me at 531-1308. Thank you.

Sincerely,

Jared K. Chang

Project Planner

LAWRENCE K. MAHUNA  
POLICE CHIEF

RONALD T. NAKAMICHI  
ASSISTANT POLICE CHIEF  
AREA II OPERATIONS

PK:dmv



Harry Kim  
Mayor

**County of Hawaii**

**POLICE DEPARTMENT**  
349 Kapiloan Street • Hilo, Hawaii 96720-3998  
(808) 935-3311 • Fax: (808) 961-2389

September 14, 2006

Mr. Ronald Sato, AICP  
Senior Project Planner  
SSFM International Inc.  
501 Summer Street, Suite 620  
Honolulu, Hawaii 96817

Dear Mr. Sato:

SUBJECT: QUEEN LILIUOKALANI SUBDIVISION LARGE CAPACITY  
CESSPOOL CONVERSION PROJECT  
PRE-ASSESSMENT CONSULTATION FOR DRAFT ENVIRONMENTAL  
ASSESSMENT

This is in response to your letter of September 8, 2006, soliciting any comments in reference to the above-referenced project.

Staff has reviewed the Draft Environmental Assessment and has no comments or objections to offer at this time.

Sincerely,

SSFM INTERNATIONAL, INC.

Jared K. Chang

Project Planner

"Hawai'i County is an Equal Opportunity Provider and Employer"

LINDA LINGLE  
GOVERNOR



**SSFM INTERNATIONAL, INC.**

501 Sumner Street, Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 531-1308  
Fax: (808) 521-7348

Project Managers, Planners, & Engineers  
American Council of Engineering Companies Member

September 1, 2009

2005\_080.000

September 1, 2009

ANTHONY J.H. CHING  
EXECUTIVE OFFICER  
STATE OF HAWAII, DEPT. OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM  
LAND USE COMMISSION  
PO. Box 2359  
Honolulu, Hawaii 96804-2359  
Telephone: 808-587-3822  
Fax: 808-587-3822

**STATE OF HAWAII**  
**DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM**  
**LAND USE COMMISSION**

Mr. Ronald T. Nakamichi, Assistant Police Chief  
Police Department  
County of Hawai'i  
349 Kapiolani Street  
Hilo, Hawai'i 96720-3998

Dear Mr. Ronald T. Nakamichi:

Subject: Queen Lili'uokalani Village Subdivision  
Large Capacity Cesspool Conversion Project  
Pre-Assessment Consultation for Draft Environmental Assessment  
North Kona, Hawai'i

Thank you for your letter dated September 14, 2006 regarding the pre-assessment consultation efforts for preparation of the Draft Environmental Assessment for the subject project.

We note you have no comments to offer at this time.

If you have any questions on this matter, please contact me at 531-1308. Thank you.

Sincerely,

SSFM INTERNATIONAL, INC.

Jared K. Chang  
Project Planner

Should you have any questions, please feel free to call me or Bert Satuwatari of our office at 587-3822.

Sincerely,

ANTHONY J.H. CHING  
Executive Officer



PATRICIA HAMAMOTO  
SUPERINTENDENT  
SSFM INTERNATIONAL, INC.  
RECEIVED

SEP 2 2006



LINDA LINOLE  
GOVERNOR  
**STATE OF HAWAII'**  
DEPARTMENT OF EDUCATION  
P.O. BOX 2980  
HONOLULU, HAWAII 96804

## FILE COPY

LINDA LINOLE  
GOVERNOR

**SSFM INTERNATIONAL, INC.**  
501 Sumner Street, Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 531-1308  
Fax: (808) 521-7348

Project Managers, Planners, & Engineers  
American Council of Engineering Companies Member

SSFM 2005\_080.000

September 1, 2009

September 21, 2006

Mr. Anthony Ching, Executive Officer  
Department of Business, Economic Development & Tourism  
P.O. Box 2359  
Honolulu, Hawaii 96804-2359

Dear Mr. Anthony Ching:

Subject: Queen Lili'uokalani Village Subdivision  
Large Capacity Cesspool Conversion Project  
Pre-Assessment Consultation for Draft Environmental Assessment  
North Kona, Hawai'i

Thank you for your letter dated September 20, 2006 regarding the pre-assessment consultation efforts for preparation of the Draft Environmental Assessment for the subject project.

We note your comment to include a map indicating State Land Use Districts in the Draft EA.

If you have any questions on this matter, please contact me at 531-1308. Thank you.

Sincerely,

SSFM INTERNATIONAL, INC.

Jared K. Chang  
Project Planner

Subject: Early Consultation on Cesspool Conversion for Queen Lili'uokalani Subdivision  
North Kona, Hawai'i

The Department of Education believes the conversion from large capacity cesspools to individual wastewater systems in the Queen Lili'uokalani subdivision will have no impact on Kealakehe Elementary and Kealakehe Intermediate schools.

We would appreciate standard notification to the principals of the schools if there will be changes in traffic patterns or utility service. We also hope that efforts will be made to mitigate noise and dust that could affect the students while they are in school.

Thank you for the opportunity to offer our early comments. If you have any questions, please call Heidi Meeker of the Facilities Development Branch at 733-4862.

Very truly yours,

Patricia Hamamoto  
Superintendent

PH:jmb

c: Randolph Moore, Acting Assistant Superintendent, OBS  
Duane Kashiwai, Public Works Manager, FDB  
Art Souza, CAS, Honokaa/Kealakehe/Kohala/Konawaena Complex Areas

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER



**SSFM INTERNATIONAL, INC.**  
501 Summer Street, Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 531-1308  
Fax: (808) 521-7348

Project Managers, Planners, & Engineers

American Council of Engineering Companies, Member

SSFM 2005\_080.000

September 1, 2009

Ms. Patricia Hamamoto, Superintendent  
Department of Education  
State of Hawai'i  
P.O. Box 2360  
Honolulu, Hawai'i 96804  
  
Dear Ms. Hamamoto:

Subject: Queen Lili'uokalani Village Subdivision  
Large Capacity Cesspool Conversion Project  
Pre-Assessment Consultation for Draft Environmental Assessment  
North Kona, Hawai'i

Thank you for your letter dated September 21, 2006 regarding the pre-assessment consultation efforts for preparation of the Draft Environmental Assessment (DEA) for the subject project.

The principals of the schools will be notified if any change in traffic is anticipated. The DEA will addresses the impacts of construction and require that the Construction Phase contain Dust and Noise Control Measures as required in the Hawai'i Administrative Rules, Chapter 43 and 46, Title 11 "Community Noise Control".

If you have any questions on this matter, please contact me at 531-1308. Thank you.

Sincerely,

**SSFM INTERNATIONAL, INC.**

Jared K. Chang  
Project Planner



**SSFM INTERNATIONAL, INC.**  
501 Summer Street, Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 531-1308  
Fax: (808) 521-7348

Project Managers, Planners, & Engineers

American Council of Engineering Companies, Member

2005\_080.000

September 1, 2009

Ms. Betty Meyerson  
President of QLV Homeowners Association  
PO Box 4183  
Kailua-Kona, HI 96745

Dear Ms. Betty Meyerson:

Subject: Queen Lili'uokalani Village Subdivision  
Large Capacity Cesspool Conversion Project  
Pre-Assessment Consultation for Draft Environmental Assessment  
North Kona, Hawai'i

Thank you for comments from the October 12, 2006 phone conversation with Ronald Sato regarding the pre-assessment consultation efforts for preparation of the Draft Environmental Assessment (Draft EA) for the subject project.

We have noted your comments. A copy of the Draft EA will be provided to you when published.

If you have any questions on this matter, please contact me at 531-1308. Thank you.

Sincerely,

**SSFM INTERNATIONAL, INC.**

Jared K. Chang  
Project Planner

## **APPENDIX B-2**

**DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION**

SEP 16 2009

jkc

FILE



# United States Department of the Interior

U.S. GEOLOGICAL SURVEY

Pacific Islands Water Science Center

677 Ala Moana Blvd., Suite 415

Honolulu, HI 96813

Phone: (808) 587-2400/Fax: (808) 587-2401

September 15, 2009

**FILE COPY**

Mr. Lyle Hirota  
County of Hawai'i  
Department of Environmental Management  
25 Aupuni Street  
Hilo, Hawai'i 96720

Dear Mr. Hirota:

Subject: Queen Lili'uokalani Village Subdivision Large Capacity Cesspool Conversion Project,  
Kailua-Kona, Hawai'i, Tax Map Key: 7-04-011, 012, and 013

Thank you for forwarding the Draft Environmental Assessment for review and comment by the staff of the U.S. Geological Survey Pacific Islands Water Science Center. We regret however, that due to prior commitments and lack of available staff, we are unable to review this document.

We appreciate the opportunity to participate in the review process.

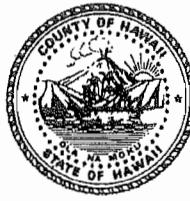
Sincerely,

A handwritten signature in black ink, appearing to read "SSA".

Stephen S. Anthony  
Acting Center Director

cc: Mr. Jared Chang  
SSFM International, Inc.  
501 Sumner Street, Suite 620  
Honolulu, Hawai'i

William P. Kenoi  
*Mayor*



Lono A. Tyson  
*Director*

Ivan M. Torigoe  
*Deputy Director*

**County of Hawai'i**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT** U.S. GEOLOGICAL SURVEY  
25 Aupuni Street • Hilo, Hawai'i 96720  
(808) 961-8083 • Fax (808) 961-8086  
[http://co.hawaii.hi.us/directory/dir\\_envmng.htm](http://co.hawaii.hi.us/directory/dir_envmng.htm)

SEP 08 2009

September 2, 2009

**RECEIVED**

Dear Participant:

Enclosed for your review is a Draft Environmental Assessment (Draft EA) prepared pursuant to Chapter 343, Hawai'i Revised Statutes and Title 11, Chapter 200 of the State Department of Health's Administrative Rules.

Name of Project:	Queen Lili'uokalani Village Subdivision Large Capacity Cesspool Conversion Project
Island and District:	Kailua-Kona, Hawai'i
Tax Map Key:	7-04-011, 012, and 013
Proposing Agency:	County of Hawai'i Department of Environmental Management
Address:	25 Aupuni Street Hilo, Hawai'i 96720
Contact:	Mr. Lyle Hirota (961-8333)
Approving Agency:	Same as above.
Consultant:	SSFM International, Inc.
Address:	501 Sumner Street, Suite 620 Honolulu, Hawai'i 96817
Contact:	Mr. Jared Chang (531-1308)

**Please send comments to the Proposing Agency and Consultant.**

Comments must be received or postmarked by: October 8, 2009

Thank you for your participation in the Environmental Assessment review process.

Handwritten signature of Lono A. Tyson.

Lono A. Tyson  
**DIRECTOR**

cc: Ivan Torigoe, Deputy Director  
Dora Beck, P.E., Wastewater Division Chief

**William P. Kenoi**  
Mayor



**Lono A. Tyson**  
Director

**Ivan M. Torigoe**  
Deputy Director

**William T. Takaba**  
Managing Director

## County of Hawai'i

### DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street • Hilo, Hawai'i 96720

(808) 961-8083 • Fax (808) 961-8086

[http://co.hawaii.hi.us/directory/dir\\_envmng.htm](http://co.hawaii.hi.us/directory/dir_envmng.htm)

November 10, 2009

United States Department of the Interior  
U.S. Geological Survey  
677 Ala Moana Blvd., Suite 415  
Honolulu, Hawai'i 96813

Attention: Mr. Stephen S. Anthony  
Acting Center Director

**Subject:** Queen Lili'uokalani Village Subdivision Large Capacity Cesspool  
Conversion Project, Draft Environmental Assessment Comments,  
**TMK Plats:** (3) 7-04-011, 012, and 013 North Kona, Hawai'i

Dear Mr. Anthony,

Thank you for your department's letter dated September 15, 2009 providing comments on the Draft Environmental Assessment (DEA) for the subject project.

We acknowledge that you were unable to review the DEA due to lack of available staff and prior commitments.

If you have any questions on this matter, please contact Mr. Lyle Hirota, Deputy Division Chief at (808) 961-8333 ([lhirota@co.hawaii.hi.us](mailto:lhirota@co.hawaii.hi.us)) or Ms. Dora Beck, P.E., Wastewater Division Chief at (808) 961-8513 ([dbeck@co.hawaii.hi.us](mailto:dbeck@co.hawaii.hi.us)).

With Regards and Aloha,

A handwritten signature in blue ink that reads "Lono A. Tyson".

Lono A. Tyson  
DIRECTOR

cc: Jared Chang, SSFM International, Inc.  
Ivan Torigoe, Deputy Director  
Dora Beck, P.E., Wastewater Division Chief



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SEP 17 2009

STATE OF HAWAI'I  
DEPARTMENT OF EDUCATION  
P.O. BOX 2360  
HONOLULU, HAWAI'I 96804

OFFICE OF THE SUPERINTENDENT

September 17, 2009

FILE

Mr. Lono A. Tyson, Director  
County of Hawaii  
Department of Environmental Management  
25 Aupuni Street  
Hilo, Hawaii 96720

FILE COPY

Dear Mr. Tyson:

Subject: Queen Lili'uokalani Village Subdivision Large Capacity  
Cesspool Conversion Project Draft Environmental Assessment  
TMK 7-04-011, 012, and 013

The Department of Education (DOE) has reviewed the Draft Environmental Assessment for the Queen Lili'uokalani Village Subdivision Large Capacity Cesspool Conversion Project.

The DOE would like assurances that this project will not impact the available sewage capacity for Kealakehe High School.

If you have any questions, please contact Jeremy Kwock of the Facilities Development Branch at (808) 377-8301.

Very truly yours,

A handwritten signature in black ink, appearing to read "Patricia Hamamoto".

Patricia Hamamoto  
Superintendent

PH:jmb

c: Randolph Moore, Assistant Superintendent, OSFSS  
✓ Jared Chang, SSFM International, Inc.  
Arthur Souza, CAS, Honokaa/Kealakehe/Kohala/Konawaena Complex Areas

**William P. Kenoi**  
Mayor



**Lono A. Tyson**  
Director

**William T. Takaba**  
Managing Director

**Ivan M. Torigoe**  
Deputy Director

## County of Hawai'i

### DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street • Hilo, Hawai'i 96720

(808) 961-8083 • Fax (808) 961-8086

[http://co.hawaii.hi.us/directory/dir\\_envmng.htm](http://co.hawaii.hi.us/directory/dir_envmng.htm)

November 10, 2009

State of Hawai'i  
Department of Education  
P.O. Box 2360  
Honolulu, Hawai'i 96804

Attention: Ms. Patricia Hamamoto  
Superintendent

Dear Ms. Hamamoto,

**Subject:** Queen Lili'uokalani Village Subdivision Large Capacity Cesspool  
Conversion Project, Draft Environmental Assessment Comments,  
TMK Plats: (3) 7-04-011, 012, and 013, North Kona, Hawai'i

Thank you for your letter dated September 17, 2009 providing comments on the Draft Environmental Assessment (DEA) for the subject project.

We acknowledge your concern of the projects impacts to available sewage capacity for Kealakehe High School. This project is not anticipated to have significant detrimental impacts which affect Kealakehe Wastewater Treatment Plant's available sewage capacity for Kealakehe High School.

If you have any questions on this matter, please contact Mr. Lyle Hirota, Deputy Division Chief at (808) 961-8333 ([lhirota@co.hawaii.hi.us](mailto:lhirota@co.hawaii.hi.us)) or Ms. Dora Beck, P.E., Wastewater Division Chief at (808) 961-8513 ([dbeck@co.hawaii.hi.us](mailto:dbeck@co.hawaii.hi.us)).

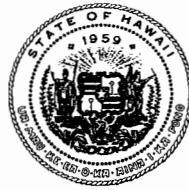
With Regards and Aloha,

A handwritten signature in blue ink that reads "Lono A. Tyson".

Lono A. Tyson  
DIRECTOR

cc: Jared Chang, SSFM International, Inc.  
Ivan Torigoe, Deputy Director  
Dora Beck, P.E., Wastewater Division Chief

LINDA LINGLE  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

October 5, 2009

INTERNATIONAL, INC.  
RECEIVED

OCT 08 2009

JKC  
FILE

BRENNON T. MORIOKA  
DIRECTOR

Deputy Directors  
MICHAEL D. FORMBY  
FRANCIS PAUL KEENO  
BRIAN H. SEKIGUCHI  
JIRO A. SUMADA

IN REPLY REFER TO:

STP 8.3423

**FILE COPY**

Mr. Lyle Hirota  
Department of Environmental Management  
County of Hawaii  
25 Aupuni Street  
Hilo, Hawaii 96720

Dear Mr. Hirota:

Subject: Queen Lili'uokalani Village Subdivision Large Capacity Cesspool Conversion Project  
Draft Environmental Assessment (DEA)  
TMK: 7-04-011, 012, and 013

Thank you for requesting the State Department of Transportation's (DOT) review of the subject project.

DOT understands that the subject project proposes wastewater system improvements for the QLV Subdivision. The subdivision's existing large capacity cesspools will be replaced by an approved collection system. The proposed improvements will be located within existing County roadway right-of-ways.

While DOT does not anticipate any significant, adverse impacts to its transportation infrastructure resulting from the subject project, the following comments are offered:

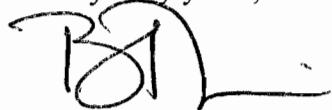
1. DOT's prior letter (STP 8.2286 dated September 29, 2006) raised concerns regarding the interruption of traffic along Palani Road where Mamalahoa Highway transitions to Palani Road and at the Palani Road-Queen Kaahumanu Highway intersection. The potentially heavy traffic could result as a combination of nearby projects and special events during the wastewater system's construction phase. The Final Environmental Assessment (FEA) should address these concerns and identify mitigation measures if necessary.
2. A permit to transport oversized equipment and/or overweight loads on State highway facilities is required from the DOT Highways Division.

Mr. Lyle Hirota  
Page 2  
October 5, 2009

STP 8.3423

DOT appreciates the opportunity to provide comments. If there are any questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at telephone number (808) 587-2356.

Very truly yours,

A handwritten signature consisting of stylized initials "BT" followed by a horizontal line.

BRENNON T. MORIOKA, Ph.D., P.E.  
Director of Transportation

c: Jared Chang, SSFM International, Inc.  
Katherine Kealoha, Office of Environmental Quality Control



William P. Kenoi  
Mayor

Lono A. Tyson  
Director

Ivan M. Torigoe  
Deputy Director

## County of Hawai'i

### DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street • Hilo, Hawai'i 96720

(808) 961-8083 • Fax (808) 961-8086

[http://co.hawaii.hi.us/directory/dir\\_envmng.htm](http://co.hawaii.hi.us/directory/dir_envmng.htm)

November 10, 2009

State of Hawai'i  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawai'i 96813

Attention: Mr. Brennon T. Morioka, Director

**Subject:** Queen Lili'uokalani Village Subdivision Large Capacity Cesspool  
Conversion Project, Draft Environmental Assessment Comments,  
TMK Plats: (3) 7-04-011, 012, and 013, North Kona, Hawai'i

Dear Mr. Morioka,

Thank you for your letter dated October 5, 2009 providing comments on the Draft Environmental Assessment (DEA) for the subject project.

We acknowledge your concerns regarding the potential for interruption of traffic along Palani Road where Māmalahoa Highway transitions to Palani Road and at the Palani Road/Queen Ka'ahumanu Highway intersection. Current measures recommended by the project's Traffic Control Plan have been discussed in the Final Environmental Assessment (Final EA). Traffic Control Plans will provide adequate provisions for pedestrian safety within construction areas. Furthermore, the contractor will be required to provide two lanes of traffic through this Palani Road section between the times of 3:00 PM and 8:00 AM, thus impacts to traffic are expected to be minimal.

The applicable permits will be obtained from your Department for transporting of oversized equipment and overweight loads.

If you have any questions on this matter, please contact Mr. Lyle Hirota, Deputy Division Chief at (808) 961-8333 ([lhirota@co.hawaii.hi.us](mailto:lhirota@co.hawaii.hi.us)) or Ms. Dora Beck, P.E., Wastewater Division Chief at (808) 961-8513 ([dbeck@co.hawaii.hi.us](mailto:dbeck@co.hawaii.hi.us)).

With Regards and Aloha,

Lono A. Tyson  
DIRECTOR

cc: Jared Chang, SSFM International, Inc.  
Ivan Torigoe, Deputy Director  
Dora Beck, P.E., Wastewater Division Chief



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jkc

**DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII**

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720  
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

October 13, 2009

Mr. Jared Chang  
SSFM International, Inc.  
501 Sumner Street, Suite 620  
Honolulu, HI 96817

FILE

**FILE COPY**

**DRAFT ENVIRONMENTAL ASSESSMENT  
QUEEN LILI'UOKALANI VILLAGE SUBDIVISION  
LARGE CAPACITY CESSPOOL CONVERSION  
TAX MAP KEY 7-4-011, 012, AND 013**

We have reviewed the subject Draft Environmental Assessment and have the following comments.

Please be informed that there is an existing 12-inch ductile iron water main within Palani Road at the proposed sewer line crossing on Palani Road. The Department has no objection to the project; however, the proper vertical clearances between the sewer line and water main must be maintained as per our Water System Standards. Construction plans for the sewer line crossing must also be submitted to the Department for review and approval.

Should there be any questions, you may contact Mr. Finn McCall of our Water Resources and Planning Branch at 961-8070, extension 255.

Sincerely yours,

Milton D. Pavao, P.E.  
Manager

FM:dfg

copy - County of Hawai'i, Department of Environmental Management

**William P. Kenoi**  
Mayor

**William T. Takaba**  
Managing Director



**Lono A. Tyson**  
Director

**Ivan M. Torigoe**  
Deputy Director

## County of Hawai'i

### DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street • Hilo, Hawai'i 96720

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November 10, 2009

Department of Water Supply  
County of Hawaii  
345 Keianaaoa Street, Suite 20  
Hilo, Hawaii 96721

Attention: Mr. Milton D. Pavao, P.E.  
Director

Dear Mr. Pavao,

**Subject:** Queen Lili'uokalani Village Subdivision Large Capacity Cesspool  
Conversion Project, Draft Environmental Assessment Comments,  
**TMK Plats:** (3) 7-04-011, 012, and 013, North Kona, Hawai'i

Thank you for your letter dated October 13, 2009 providing comments on the Draft Environmental Assessment (DEA) for the subject project.

We appreciate your note acknowledging an existing 12-inch ductile iron water main within the proposed sewer line crossing on Palani Road. We also acknowledge that your department does not have any objections to the project. Construction plans will be submitted to your Department for review and approval by the contractor.

If you have any questions on this matter, please contact Mr. Lyle Hirota, Deputy Division Chief at (808) 961-8333 ([lhirota@co.hawaii.hi.us](mailto:lhirota@co.hawaii.hi.us)) or Ms. Dora Beck, P.E., Wastewater Division Chief at (808) 961-8513 ([dbeck@co.hawaii.hi.us](mailto:dbeck@co.hawaii.hi.us)).

With Regards and Aloha,

A handwritten signature in blue ink, appearing to read "Lono A. Tyson".

Lono A. Tyson  
DIRECTOR

cc: Jared Chang, SSFM International, Inc.  
Ivan Torigoe, Deputy Director  
Dora Beck, P.E., Wastewater Division Chief

William P. Kenoi  
Mayor



BJ Leithead Todd  
Director

Margaret K. Masunaga  
Deputy

SSFM INTERNATIONAL, INC.  
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OCT 09 2009

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## County of Hawai'i

### PLANNING DEPARTMENT

Aupuni Center • 101 Pauahi Street, Suite 3 • Hilo, Hawai'i 96720  
Phone (808) 961-8288 • Fax (808) 961-8742

October 7, 2009

**FILE COPY**

Mr. Jared Chang  
SSFM International, Inc.  
501 Sumner Street, Suite 620  
Honolulu HI 96817

Dear Mr. Chang:

**SUBJECT: Draft Environmental Assessment**

**Applicant: County of Hawaii, Department of Environmental Management**

**Project: Queen Lili'uokalani Village Subdivision Large Capacity Cesspool Conversion Project**

**Tax Map Key: 7-4-11, 12 & 13, North Kona, Hawai'i**

This is to acknowledge receipt of the Draft Environmental Assessment for the aforementioned project.

We provided preliminary comments for the proposed project and have no additional comments on the Draft Environmental Assessment.

If you have questions, please contact Esther Imamura of this office at 961-8139.

Sincerely,

*Alice S. Kawaha*

BJ LEITHEAD TODD  
Planning Director

ETI:cs

P:\Public\Wpwin60\ETI\Eadraftpre-Consul\Chang SSFM QLV CESSPOOL CONVERSION.Rtf

xc: Department of Environmental Management  
Planning Department - Kona

**William P. Kenoi**  
Mayor

**William T. Takaba**  
Managing Director



**Lono A. Tyson**  
Director

**Ivan M. Torigoe**  
Deputy Director

## County of Hawai'i

### DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street • Hilo, Hawai'i 96720

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November 10, 2009

Planning Department  
County of Hawai'i  
101 Pauahi Street, Suite 3  
Hilo, Hawai'i 96720

Attention: Ms. Bobby Jean Leithead Todd

**Subject:** Queen Lili'uokalani Village Subdivision Large Capacity Cesspool  
Conversion Project, Draft Environmental Assessment Comments,  
TMK Plats: (3) 7-04-011, 012, and 013, North Kona, Hawai'i

Dear Ms. Leithead Todd,

Thank you for your letter dated October 7, 2009 providing comments on the Draft Environmental Assessment (DEA) for the subject project.

We acknowledge that your department has no additional comments on the DEA.

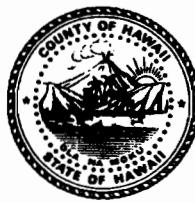
If you have any questions on this matter, please contact Mr. Lyle Hirota, Deputy Division Chief at (808) 961-8333 ([lhirota@co.hawaii.hi.us](mailto:lhirota@co.hawaii.hi.us)) or Ms. Dora Beck, P.E., Wastewater Division Chief at (808) 961-8513 ([dbeck@co.hawaii.hi.us](mailto:dbeck@co.hawaii.hi.us)).

With Regards and Aloha,

A handwritten signature in blue ink, appearing to read "Lono A. Tyson".  
**Lono A. Tyson**  
DIRECTOR

cc: Jared Chang, SSFM International, Inc.  
Ivan Torigoe, Deputy Director  
Dora Beck, P.E., Wastewater Division Chief

**William P. Kenoi**  
Mayor



SSFM INTERNATIONAL, INC.  
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**Harry S. Kubojiri**  
Police Chief

**Paul K. Ferreira**  
Deputy Police Chief

## County of Hawaii

**POLICE DEPARTMENT**  
349 Kapiolani Street • Hilo, Hawaii 96720-3998  
(808) 935-3311 • Fax (808) 961-8865

September 10, 2009

Mr. Jared Chang  
SSFM International, Inc.  
501 Summer Street, Suite 620  
Honolulu, Hawai'i 96817

Dear Mr. Chang:

**SUBJECT:** Draft Environmental Assessment  
Queen Lili'oukalani Village Subdivision Large Capacity Cesspool  
Conversion Project  
Kailua-Kona, Hawai'i  
TMK: 7-04-011, 012, and 013

Staff has reviewed the above-referenced Draft Environmental Assessment (DEA) and has the following comments dealing with traffic and safety:

- Based on information contained in the DEA, the plan calls for work within existing County Roadways and appears to cross Palani Road. As Palani Road is a major thoroughfare and is limited in most areas to two lanes, staff recommends that any work on this project that would cause a back up on Palani Road be conducted at night.
- No work be done on Palani Road that will potentially disrupt traffic, which is between the hours of 6:00 a.m. to 8:30 a.m. or 3:00 p.m. and 6:30 p.m.
- Provision should be made for pedestrian safety within the construction areas.

Should you have any questions, please contact Captain Chad Basque, Commander of the Kona District, at 326-4646, extension 249.

Mahalo,

HENRY J. TAVARES JR.  
ASSISTANT POLICE CHIEF  
AREA II OPERATIONS

CB/JED  
RS0900676

c: County of Hawaii Dept. of Environmental Management



William P. Kenoi  
Mayor

Lono A. Tyson  
Director

Ivan M. Torigoe  
Deputy Director

William T. Takaba  
Managing Director

## County of Hawai'i

### DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street • Hilo, Hawai'i 96720

(808) 961-8083 • Fax (808) 961-8086

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November 10, 2009

Police Department  
County of Hawai'i  
Area II Operations  
349 Kapi'olani Street  
Hilo, Hawaii 96720

Attention: Mr. Henry J. Tavares, Jr.  
Assistant Police Chief

Dear Officer Tavares,

**Subject:** Queen Lili'uokalani Village Subdivision Large Capacity Cesspool Conversion Project, Draft Environmental Assessment Comments, TMK Plats: (3) 7-04-011, 012, and 013, North Kona, Hawai'i

Thank you for your letter dated September 10, 2009 providing comments on the Draft Environmental Assessment (DEA) for the subject project.

We acknowledge your department's concerns with regards to the potential for traffic disruption caused by construction activities on Palani Road. Per the Traffic Control Plan prepared for this project, the contractor will be required to provide two lanes of traffic through this Palani Road section between the times of 3:00 PM and 8:00 AM, thus impacts to traffic during peak hours are expected to be minimal.

The Traffic Control Plan also recognizes the need for pedestrian safety within the project's vicinity and safety measures have been incorporated into the Final EA.

If you have any questions on this matter, please contact Mr. Lyle Hirota, Deputy Division Chief at (808) 961-8333 ([lhirota@co.hawaii.hi.us](mailto:lhirota@co.hawaii.hi.us)) or Ms. Dora Beck, P.E., Wastewater Division Chief at (808) 961-8513 ([dbeck@co.hawaii.hi.us](mailto:dbeck@co.hawaii.hi.us)).

With Regards and Aloha,

*Lono A. Tyson*  
Lono A. Tyson  
DIRECTOR

cc: Jared Chang, SSFM International, Inc.  
Ivan Torigoe, Deputy Director  
Dora Beck, P.E., Wastewater Division Chief



SSFM INTERNATIONAL, INC.

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SEP 22 2009

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September 21, 2009

County of Hawaii  
Department of Environmental Management  
Attention: Mr. Lyle Horita  
25 Aupuni Street  
Hilo, Hawaii 96720

FILE COPY

Gentlemen:

Subject: Draft Environmental Assessment  
Queen Lili'uokalani Village Subdivision  
Large Capacity Cesspool Conversion Project  
Tax Map Key: (3) 7-4-011, 012 and 013  
Kailua-Kona, North Kona, Hawaii

Thank you for the opportunity to review the subject's draft environmental assessment.  
At this time we do not have any objections to the project.

Please call Hal Kamigaki at (808) 969-0322 if you have any questions.

Sincerely,

*Thomas W. Cummins*

Thomas W. Cummins, L.P.L.S.  
Manager, Engineering Department

TWC:HKK:cmk

✓ copy: SSFM International, Inc.  
501 Sumner Street, Suite 620  
Honolulu, Hawaii 96817

**William P. Kenoi**  
Mayor



**Lono A. Tyson**  
Director

**Ivan M. Torigoe**  
Deputy Director

**William T. Takaba**  
Managing Director

## County of Hawai'i DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street • Hilo, Hawai'i 96720  
(808) 961-8083 • Fax (808) 961-8086  
[http://co.hawaii.hi.us/directory/dir\\_envmng.htm](http://co.hawaii.hi.us/directory/dir_envmng.htm)

November 10, 2009

Hawai'i Electric Company, Inc.  
Engineering Department  
P.O. Box 1027  
Hilo, Hawaii 96721

Attention: Mr. Thomas W. Cummins, L.P.L.S.  
Manager

Dear Mr. Cummins,

**Subject:** Queen Lili'uokalani Village Subdivision Large Capacity Cesspool  
Conversion Project, Draft Environmental Assessment Comments,  
TMK Plats: (3) 7-04-011, 012, and 013, North Kona, Hawai'i

Thank you for your letter dated September 21, 2009 providing comments on the Draft Environmental Assessment (DEA) for the subject project.

We acknowledge that your department does not have any objections to the project.

If you have any questions on this matter, please contact Mr. Lyle Hirota, Deputy Division Chief at (808) 961-8333 ([lhirota@co.hawaii.hi.us](mailto:lhirota@co.hawaii.hi.us)) or Ms. Dora Beck, P.E., Wastewater Division Chief at (808) 961-8513 ([dbeck@co.hawaii.hi.us](mailto:dbeck@co.hawaii.hi.us)).

With Regards and Aloha,

A handwritten signature in blue ink that reads "Lono A. Tyson".

Lono A. Tyson  
DIRECTOR

cc: Jared Chang, SSFM International, Inc.  
Ivan Torigoe, Deputy Director  
Dora Beck, P.E., Wastewater Division Chief

LINDA LINGLE  
GOVERNOR OF HAWAII



LAURA H. THIELEN  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI  
FIRST DEPUTY

KEN C. KAWAHARA  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONSTITUTIONS  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLawe ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

M INTERNATIONAL, INC.  
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STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
601 KAMOKILA BOULEVARD, ROOM 555  
KAPOLEI, HAWAII 96707

October 7, 2009

Mr. Lono A. Tyson, Director  
Department of Environmental Management  
25 Aupuni Street  
Hilo, Hawaii 97620

LOG NO: 2009.3374  
DOC NO: 0910TD15  
Archaeology

OCT 09 2009

JKC

FILE COPY

Dear Mr. Tyson:

**SUBJECT: Chapter 6E-8 Historic Preservation Review of a Draft Environmental Assessment - Queen Liliuokalani Village On-Site Collection System & Sewer Lateral Connections Keahuolū Ahupua'a, North Kona District, Island of Hawai'i**  
**TMK: (3) 7-4-11: 1-38; 7-4-12: 1-16; 7-4-13: 1-124**

Thank you for the opportunity to comment on the DES for the subject County of Hawai'i Department of Environmental Management project. The project includes closing 30 large capacity cesspools, installation of 13,300 feet of sewer main and laterals within the County of Hawai'i right of way along existing streets; and installation of 103 private sewer laterals to existing homes.

SHPD participated in an early consultation for this project, and in a September 21, 2006 letter to SSFM International, we recommended that a thorough review of the potential effects of this project on historic properties be undertaken (Log 2006.3115, Doc 0609JT60). We note that Section 3.6.1 of the DEA reflects a review of only two information sources: the SHPD web site and the County's General Plan. Reliance on these two sources does not constitute an adequate review of prior archaeological studies or known historic sites within the general vicinity. There are many known undisturbed historic sites along the south side of Palani Road, and in the general vicinity of the subdivision, as indicated in a number of archaeological inventory surveys available for review (including the one referenced in Appendix C). This information should be included in the EA.

Section 3.6.1 of the DEA states that, "Review of the County's draft General Plan section on natural beauty did not identify Historic Sites within the Keahuolu Ahupua'a" (pp 40, 41). This statement is an inaccurate representation of the historic and cultural resources in Keahuolū. There are numerous known historic properties in this ahupua'a, some of which are very close to the project area. We request that this section be revised to provide a more complete and accurate representation of the cultural resources in the ahupua'a and general vicinity.

Attached to the DEA as Appendix C is a letter from SHPD, dated February 3, 2006 in reference to an archaeological inventory survey conducted for a County Water Main Route along the south side of Palani Road (Clark & Rechtman 2005). The title of Appendix C is incorrect - this is not a "no effect" letter, and the date is not 2007. The letter concurs with the findings of an inventory survey that identified seven historic properties and recommended additional data recovery for one site, with preservation for two sites.

Section 3.6.1 of the DEA states that there are no prior available studies for the project area, yet the Appendix C letter is presented as though it is relevant to the project area. Please check your proposed sewer line routes and the site locations found in the 2005 Clark and Rechtman report to determine

whether or not this project will affect the sites mentioned in the Appendix C letter. If any of these sites are to be affected by the proposed project, the DEA should include the site information from the referenced archaeological inventory survey, along with a commitment to conduct the approved mitigation at these three sites. If the surveyed area for the 2005 Clark & Rechtman study does not overlap with the project area for the DEA, the letter should be removed from the document. The 2005 report should, however, be referenced in the text of Section 3.6.1, as it is relevant to the discussion.

We concur with the conclusion that there are not likely to be surface features or undisturbed subsurface deposits or features within the subdivision area or under the subdivision roadways. We are, however concerned that the new 15 foot easement along Palani Road has not been adequately examined to verify the presence or absence of historic properties. Please provide more information in the final EA regarding this corridor. Does it overlap existing subsurface utility lines? What is the current condition of the corridor – undeveloped, developed, paved, cut or filled? If it is undeveloped, we request that at field inspection be conducted by a qualified archaeologist and the results of the inspection be forwarded to our office. If historic sites are present, we will recommend that an inventory survey be conducted of this corridor prior to the construction of the sewer line in this area.

**Section 3.6 Mitigation Measures** – The last paragraph of this section on page 42 includes a statement that, “The treatment of human remains encountered would be conducted in accordance with the applicable requirements of Chapter 6E, HRS and Chapter 13-300, HAP.” The correct reference is 13-300, HAR. We also request that you include the contact number of the Hawaii Island SHPD office (808) 933-7653 on the grading plans, so that it is readily available to contractors in the field.

If you have any questions, please contact Theresa Donham at (808)933-7653.

Aloha,



Nancy McMahon, Deputy SHPO/State Archaeologist  
and Historic Preservation Manager  
State Historic Preservation Division

cc:  SSFM International, Inc.  
501 Sumner Street, Suite 620  
Honolulu, Hawai'i 96817

William P. Kenoi  
*Mayor*



Lono A. Tyson  
*Director*

William T. Takaba  
*Managing Director*

Ivan M. Torigoe  
*Deputy Director*

## County of Hawai'i

### DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street • Hilo, Hawai'i 96720

(808) 961-8083 • Fax (808) 961-8086

[http://co.hawaii.hi.us/directory/dir\\_envmng.htm](http://co.hawaii.hi.us/directory/dir_envmng.htm)

November 10, 2009

State of Hawai'i  
Department of Land and Natural Resources  
State Historic Preservation Division  
601 Kamokila Boulevard, Room 555  
Kapolei, Hawaii 96707

Attention: Ms. Nancy A. McMahon  
Deputy SHPO/State Archaeologist

**Subject:** Queen Lili'uokalani Village Subdivision Large Capacity Cesspool Conversion Project, Draft Environmental Assessment Comments,  
**TMK Plats:** (3) 7-04-011, 012, and 013, North Kona, Hawai'i

Dear Ms. McMahon,

Thank you for your letter of October 7, 2009 providing comments on the Draft Environmental Assessment (DEA) for the subject project.

Your department's early consultation comments dated September 21, 2006 have been noted and addressed in the Final EA. As recommended, the Final EA now includes a thorough review of the project's potential effects on historic properties. We have added an overview of the historical and archaeological surveys conducted within the Keahuolu Ahupua'a. We offer the following responses to address the remainder of your concerns:

In Section 3.6 of the Final EA, we have enhanced the discussion of prior archaeological studies that were completed in the vicinity of Queen Lili'uokalani Village (QLV) Subdivision, also referred to as the project site. We acknowledge the importance of the Keahuolu Ahupua'a as a significant part of Hawai'i's history. Furthermore, while there are many known historic properties in the ahupua'a, there also exists the possibility for many unknown and/or undisturbed historic sites to be discovered within the project site or immediate vicinity.

The Final EA includes a summary of the Archaeological Inventory Survey prepared in 2005 by Clark and Rechtman for Alternative 3 of the Palani Road Transmission Main Water Supply Route. Appendix C of the Draft EA previously contained a letter from State Historic Preservation Division (SHPD) on the AIS subject discussed above. We acknowledge that the historic sites identified by Clark and Rechtman will not be affected by this project and therefore the approved mitigation at these sites would not be affected. Per your comments, the contents of Appendix C have been removed and replaced with background information on the history of Keahuolu written by Helen Wong Smith.

In Section 3.6.1 (Draft EA pg. 40), the statement is corrected to reflect an accurate representation of the historic and cultural resources in the ahupua'a and general vicinity. The corrected statement states that no properties within the project site are listed on federal or state historic registers.

We note your concurrence with our preliminary assessment that there are not likely to be surface features or undisturbed subsurface features within the subdivision or under the subdivision roadways. We do acknowledge your concerns about the new 15-foot easement being proposed along the east edge of Palani Road that this area has not been adequately examined to verify the presence or absence of historic properties. A new sewer line is proposed to be located within this easement. The easement will be located between Palani Road and the adjacent residences within QLV subdivision. This area has been previously disturbed during construction of the subdivision, road, paved shoulder lanes, sidewalks and roadway maintenance activities. There are known utilities located under the County-owned roadways affected by this project, including a 12-inch water line under Palani Road. Hawaiian Telecom owns and operates the telecommunication utilities and Oceanic Time Warner cable owns and operates TV cable utilities. The subdivision homes are served through an underground cable network. Appropriate design coordination is being conducted with each utility company as applicable.

The contractor will be fully aware of the proper work and notification procedures in the event of inadvertent discoveries of human remains or cultural artifacts. In addition to work stopping for inadvertent discoveries, a field inspection would be conducted by a qualified archaeologist and the results of the inspection forwarded to SHPD if required. This discussion is included in the Final EA.

The statement in Section 3.6, Mitigation Measures is corrected to reflect the correct Hawai'i Administrative Rules (HAR) regulation governing the proper treatment of human remains.

Your suggestion to add the SHPD Hawai'i Office phone number has been noted for future projects. The SHPD Hawai'i Office phone number is already included in the project's grading permit so that it is readily available to contractors in the field.

If you have any questions on this matter, please contact Mr. Lyle Hirota, Deputy Division Chief at (808) 961-8333 ([lhirota@co.hawaii.hi.us](mailto:lhirota@co.hawaii.hi.us)) or Ms. Dora Beck, P.E., Wastewater Division Chief at (808) 961-8513 ([dbeck@co.hawaii.hi.us](mailto:dbeck@co.hawaii.hi.us)).

Best Regards and Aloha,



Lono A. Tyson  
DIRECTOR

cc: Jared Chang, SSFM International, Inc.  
Ivan Torigoe, Deputy Director  
Dora Beck, P.E., Wastewater Division Chief

## **APPENDIX C**

**HISTORY OF KEAHUOLU  
BY  
HELEN WONG SMITH**

## APPENDIX A

### HISTORICAL DOCUMENTARY RESEARCH

by Helen Wong Smith, B.A.

The project area is located in the ahupua'a of Keahuolu. Pukui et al. (1974:101) gives the literal translation of Keahu-o-Lu as "the heap of Lu." Although there is no explanation, we can assume "Lu" is a person's name and that the heap may refer to an altar (another meaning of ahu). Emerson surveyed the area in the 1880s, and his map (Reg. Map 1280) denotes "rough pahoehoe, little vegetation" in Keahuolu ahupua'a. Probably the place name refers to one of the many rock piles scattered throughout the region.

Legendary references to Keahuolu are few. In his report on a reconnaissance survey of the Old Kona Airport area, which is now a state park in Keahuolu, Neller cites one:

The area around the old Kona airport may also have some connection with the legendary Hawaiian chief Kuali'i. He was said to have been born at Kalapawai in Kailua, and defied the oppression of Lono-ikaika during the dedication of the heiau at Kawaluna. He is associated with Ku-kaili-moku, the god of victory in battle. Perhaps by coincidence, all of these place names are found in the beach park area (Neller 1980).

Handy writes of the Kona district:

The most interesting mythological and legendary materials relating to Kona have to do directly or indirectly with Lono....The story of the origin of the Makahiki rain and harvest festival, bring Lono from Kahiki, whither he returns. From Kona we have the written record of a myth of Kumuhonua, [Earth Foundation, 36 generations before Wakea and Papa, who was the first man fashioned by the gods] whose writer says that Lono was a fisherman and yet ends his story by stating that the events related occurred before men peopled the earth. Lono is credited with introducing the main food plants, taro, breadfruit, yams, sugar cane and bananas to Hawaii and also 'awa. Hogs were likewise identified with Lono, but there is no mention of his having brought them to Hawaii (Handy and Handy 1972:522).

Two archaeological surveys conducted in the earlier part of the century describe several prehistoric sites in and around the project area. During a reconnaissance survey of

Keahuolu, J.F.G. Stokes located the following religious structures:

Ko'a of Kalepau, in Halepa'u Section, Land of Keahuolu, North Kona. A small fishing heiau on the pahoehoe, 100 feet north-west of Keahuola. Well preserved walls, 4 feet high. (Site #10-27-2139.)

Heiau of Kawaluna, land of Keahuolu, North Kona, on the beach, a quarter mile from the boundary of Lanihau, in a section (ili) called Pawai. An enclosure, the walls of which have been carefully rebuilt, without opening. The interior was filled with loose stones piled up without arrangement. The local informant stated that an old fisherman was in the habit of offering fish in this heiau. Asked as to the resulting luck, the answer was that it was not as much as that of other fishermen, perhaps because the offering was made at a heiau instead of the ko'a (Halepa'u) nearby.

Heiau of Palihiolo, at Waikilohi, at or near the boundary of Keahuolu and Lanihau, North Kona; on the beach in an old coco-palm grove; this is an insignificant pen, 25 by 29 feet in size with small, thin walls built on the upper slopes of the beach. Coral has been spread over the floor as a paving. The only interest attaching to the place is the account given by a very old native living in the grove. He said that Palihiolo was formerly a heiau for human sacrifice, and that it was rebuilt by Kalakaua's orders before the latter left for the United States (about 1890). The old native also said that Kalakaua promised to have a sacrifice at Palihiolo on his return from America, but that he died in that country. The old native was very insistent on the truth of his statements. It might be mentioned that the surrounding grove of palms is where Kalakaua's grandfather was hanged for murder. Other information from the old native is given here for convenience, that this king ordered the rebuilding of the two heiaus of Kawaluna and Palihiolo where human sacrifices were formerly offered, and the ko'as of Halepa'u and Maka'eo....It might be remarked that these four structures have the appearance of having been rebuilt in recent times (Stokes 1919).

In reference to heiau committed to human sacrifice, Kamakau (1976) writes that these 'ohi'a ko "...would...cause holding the breath (in fear)."

An island-wide description of sites was published by Henry Kinney in the earlier part of this century. He writes of the shoreline of Keahuolu as follows:

From the point where the Honokohau Trail leaves Kailua a poor trail leads makai over the lava to the lighthouse. Hence it continues along the beach for a couple of miles. After passing several old stone mausoleums, the trail passes an abandoned grass house where is a stone wall, the remnants of the heiau Keohuulu. Still further north is a coconut grove, where there were several heiau, notably that of Palihihole. There were several kuula here, one particularly powerful one, the idol of which is still remembered as having been in a fair state of preservation, only one arm missing, when a Christian priest took it from the cave where it was kept. Since then, say the inhabitants, the fishing has been comparatively poor. In the grove are two coconut stumps which served as gallows for the first execution conducted by hanging in Hawaii. A chief, Kekuakahaku, was the victim.

Beyond the main [coconut] grove are a few isolated trees near the edge of the flow. Here was the heiau of Pauai, and here the trail ends (Kinney 1913).

The area in which the Pauai heiau is located is known as Pawai. John Clark (1985) believes that the original name for the bay was Papawai, but attempts to substantiate this name have been futile.

## MAHELE LAND OWNERSHIP AND CULTIVATION

During the reign of Kamehameha III, the most important event in the reformation of the land system was incorporated. "The Great Mahele" separated and defined the undivided land interests of the King and the high-ranking chiefs and konohiki (originally konohiki referred to the person in charge of a tract of land on behalf of the king or a chief; in the later statutes, the chiefs or landlords were referred to as "konohikis") (Chinen 1958:vii and Chinen 1961:13). More than 240 of the highest ranking chiefs and konohiki in the kingdom joined Kamehameha III in this division. The first mahele was signed on Jan. 27, 1848 by Kamehameha III, and for Princess Victoria Kamamalu by her guardians Mataio Kekuanaoa and Ione Ii. The last mahele was signed

by the King and E. Enoka on March 7, 1848 (Chinen 1958:16).

The mahele did not convey any title to any land. The chiefs and konohiki were required to present their claims to The Land Commission and to receive awards for the lands quitclaimed to them by Kamehameha III. Until an award for these lands was issued, title remained with the government. Because there were few surveyors at the time of the Mahele, the lands were divided by name only, with the understanding that the ancient boundaries would remain in effect until a survey of such lands could be made in the future. This was done to expedite the work of the Land Commission in awarding lands to the chiefs and konohiki. However, these chiefs and konohiki were still required to pay commutations to the government for them to receive Royal Patents on their awards. These lands awarded to the chiefs and konohiki became known as Konohiki Lands (Chinen 1961:13).

Lands were identified and separated in 1848 as Crown Lands (for the occupant of the throne), Government Lands, and Konohiki Lands. These were all "subject to the rights of native tenants" (Laws of Hawaii 1848:22). These rights were brought into question when the King, the government, and konohiki began selling off parcels of land. To clarify the situation, the Privy Council, on December 21, 1849, adopted four resolutions as a means of protecting the rights of native tenants (Chinen 1958:29). These resolutions authorized the Land Commission to award fee simple title to all native tenants who occupied and improved any portion of Crown, Government, or Konohiki Lands. Except for the houselots located in the districts of Honolulu, Lahaina, and Hilo, these awards were to be free of commutation (*ibid*).

Before receiving awards for their lands from the Land Commission, the native tenants were required to prove that they actually cultivated those lands for a living. They were not permitted to acquire waste lands or lands which they cultivated "with the seeming intention of enlarging their lots." Once confirmed, the lands were required to be surveyed before the Land Commission was authorized to issue any award. These lands became known as "Kuleana Lands" (Chinen 1958:30). Until its dissolution on March 31, 1855, the Land Commission issued thousands of awards to the native tenants for their kulcana. Even so, less than 30,000 acres of land were awarded to the native tenants as kuleana lands.

The ahupua'a of Keahuolu was awarded to Ane Keohokalole (d. 1857), who numbered among her offspring King David Kalakaua, Queen Lydia Liliuokalani, and William Pitt Leleiohoku (who was adopted by Ruth Keelikolani).

Her youngest daughter, Miriam Likeleke, was the mother of Kaiulani, who was proclaimed heir apparent in 1891 after her aunt, Liliuokalani, took the throne following the death of Kalakaua. Keohokalole was the great-granddaughter of Kameciamoku, one of the most important of the chiefs supporting Kamehameha I. Approximately half of the lands that Keohokalole received in the Mahele were on the island of Hawaii, and two-thirds of those were lands in Kona District (Kelly 1983:31).

Within Keahuolu is LCA 8452, Apana 12 (Royal Patent 6851). This parcel had a total area of 4,071 acres. Keohokalole commuted some of her holdings in order to keep certain lands, including Keahuolu. Excerpts from her correspondence with the Minister of the Interior provide us with this information:

To Highness, John Young  
Minister of Interior

Greetings:

This is to inform you and the Privy Council of my desire to convey some of my lands for the Government's one third in the land which remain as mine. Grant me this, of course, with the approval of the Privy council. Below is a list of the lands I wish to convey to the government (Native Test. 10:326).

To Your Highness, John Young  
Minister of Interior

Greetings:

Here is a list of names of my lands which has been left for me pending for an approval of its distribution.  
...Keahuolu ahupuaa, Kona, Hawaii...

With appreciation,  
A. Keohokalole (Native Test. 10:327)

The following testimony was given by Awahua, to verify Keohokalole's holdings for this LCA in Kona:

Awahua, sworn, says he knows the house lots claimed by Keohokalole at Kaawaloa, Hawaii. The first one is fenced all round with a stone wall. It is bounded makai by the sea shore, on Kailua side by the Government land, mauka by the land of Nahaku, and Awahua, and on the other side by the road. Claimant derived this lot from her ancestors, who held it from very ancient times. There is a

stone house and several grass houses in it belonging to claimant, besides a tomb.

The second lot is called "Awili," and is fenced all round. It is bounded makai by government road, on Kailua side by the same, mauka the same, on the side next the pali by the road.

Claimant derived this lot from her ancestors, who held it from older times.

Witness knows the three house lots in Kealakekua, claimed by Keohokalole. The first lot is called "Kulou" and is fenced in. It is bounded makai by the sea beach, Kaawaloa side by government land, mauka by the road, south Kona side by a lot belonging to T. Cummings.

The second lot is called "Kaahaloa" [and] it is enclosed all round, and bounded on Kona Hema by a lot belonging to T. Cummings, mauka by the lot of Nakoko, North Kona by an old heiau, makai by the road.

The third lot is called "Wailokoalii" and is bounded on the South Kona side by an old Heiau, mauka by a Government lot and the lot of Ialua, makai by the sea beach, on the other side by a pali.

Claimant inherited these lots from her ancestors by the mother's side, who possessed them from ancient times. Kekaalua, sworn, says he knows these lots perfectly and confirms in full the testimony by Awahua (Foreign Test. 3:573).

Whenever ali'i procured an entire ahupua'a, they were bound to respect the rights of the existing tenants. These tenants, if they filed a claim to The Board of Commissioners to Quiet Land Titles, could continue to cultivate and reside on their parcels. The following testimonies are for awards that were granted within Keahuolu (Board of Commissioners 1929):

**LCA 11071, to Aki for .60 acres - Native Test. 4:527** - Kuia sworn, He has seen Aki's land that which he had cultivated himself, it is in the ili land of Pauaaiki of Keohoeolu [sic] ahupua'a in Hawaii. Section 1, 5 cultivated kihapais. Section 2, 1 kihapai not cultivated. Section 6, 4 cultivated kihapai. Section 7, 1 cultivated kihapai. These interest have been made from Kaca, Nahaalualu and Kalekahi at the time of Kamehameha I.

**LCA 10303, to Maa for 2.25 acres - Native Test.** **4:526** - Mahu sworn, He has seen a whole section of land, however, it is just as he has indicated in his claim in that there are 11 taro kihapais, and 10 potato kihapais in the ili land at Maili of Keahuolu ahupuaa. That land is not cultivated completely, but, Maa had planted 7 palm trees. The fruit is for Samuela, both Maa and Samuela have joint interest in the 7 fan palm trees. There is also a coconut grove which had been planted by Maa's grandparents for the Chings who owned the land, they were the caretakers. The same had applied to Maa's parents and to him at the present time. The coconuts went to Keohokalole upon the death of Keoua and it has been that way to the present time.

One whole section is salt land and it is still yielding salt...Land passed down to Maa's parents, these to him now. Maa's grandparents received the ili land Maili of Keahuolu during the time of Kamehameha I. Kamauoha had given to Maa the land section of Lanihau ahupuaa in 1848, no one had objected to him.

**LCA 10345, to Nahaalualu (Naalualu) for 2 acres - Native Test.** **4:527** - Kuia sworn, He has seen (Naalualu) place that he had cultivated himself in the ili land of Puuokaliu of Keahuolu ahupuaa in Hawaii. Section 1 (boundaries given) 1 section cultivated. Section 2, 4 cultivated kihapais, Section 3, 1 cultivated kihapai, Section 4, 4 cultivated kihapais....

**LCA 10198, to Hailewalewa (Kailewalewa) for 1.30 ac - Native Test.** **4:525** - Mahu sworn, He has seen the place on which Hailewalewa had cultivated with his own hands, it is in Ulelele ili of Keahuolu ahupuaa. Section 1 Taro. Section 2, Kaluulu. Land has been cultivated, 1 land section. On land from Hailewalewa's parents to him. Uncertainty for 1 section.

**LCA 8012, to Apiki for 1.10 acre - Foreign Test.** **8:676** - Mahu, sworn, says he knows the kuleana of Claimant in Kailua, Kona. It consists of 5 patches of Kalo and a lot of patches of potatoes. The kalo patches form 1 piece, bounded on Kau side by Lanihau, Makai by Papaula's land, Kohala side the same, mauka by Hai's land. The potato land is bounded mauka by Haino's land, Kau side by Lanihau, makai by Kahili's land, Kohala side the same. Claimant derived the land from the Konohiki,

before the death of Kuakini, and has held it ever since without disputes.

**LCA 7351, to Kahanui for 2.90 acres - Foreign Test.** **8:682** - Papaula, sworn says I know the claim of Kahanui. It is in the ahupuaa of Keahuolu, Kona. It consists of one piece of kalo land, 5 patches—all lying together. One of these patches is planted with coffee. It is bounded mauka by the land of Kahookohukaneole, Kau by Lanihau, Makai by the land Nahaalualu, Kohala by the konohiki. Claimant received this land from his brother in 1846, and his title has never been disputed.

Correspondence to the Minister of the Interior often provides us with insights concerning land use and transactions. In a report by J.H. Kalaiheana, dated April 25, 1866, Keahuolu is said to belong to Keohokalole. In a letter dated July 8, 1869, from David K. Kalakaua to his sister, Liliuokalani, a detailed description of Keahuolu is provided. Kalakaua writes:

This land is situated in the District of North Kona, bounded by the ahupuaa of Lanihau (in Kailua) belonging to Prince Lunalilo on the Ka'u side, and on the Kohala side, by Kealakehe, a government land and Honokohaniki belonging to Keelikolani. Keahuolu runs clear up to the mountains and includes a portion of nearly one half of Hualalai mountains. On the mountains the koa, kukui and ohia abounds in vast quantities. The upper land or inland is arable, and suitable for growing coffee, oranges, taro, potatoes, bananas &c. Breadfruit trees grow wild as well as the Koli oil seed. The lower land is adopted for grazing cattle, sheep, goat, &c. The fishery is very extensive and a fine grove of cocoanut trees of about 200 to 300 grows on the beach. The flat land near the sea beach is composed chiefly of lava, but herbs and shrubbery grows on it and [it is] suitable for feed of sheep and goats. It is estimated at 15,000 to 20,000 acres or more.

A letter written by Liliuokalani to the Minister of the Interior, dated Oct. 6, 1894, gives permission for a road to run through Keahuolu, and includes orders for the Government to fence in both sides of this road.

On a map drafted by J.S. Emerson in the 1880s (Reg. Map 1280), a narrow band of shading that runs in a north-south direction crosses through Keahuolu. This band is at an approximate elevation of 6,250 to 7,250 ft. In Emerson's Field Notebook sketches, this line is identified as the

"Commencement of the Forest." The notebook notes that mauka of the forest line, the land is "lava covered with scattering forest and dense masses of ki [ti] root" (Kelly 1983:58).

In his reconnaissance survey of Keahuolu, Rosendahl (1972) notes: "...the Great Wall of Kuakini...is a historic period structure built during the period A.D. 1830-1840 at the direction of Kuakini, Governor of the Island of Hawaii..." Kelly writes of this Kuakini Wall:

It has long been presumed that this wall was built sometime during the governorship of John Adam Kuakini (1820-1844) to protect the cultivated uplands from the depredations of cattle. However, as the wall is at all points less than a mile from the seacoast, only the food plots in the coastal region would have been protected by it. It probably would have only kept cattle and horses grazing on the kula away from the houselots and small gardens along the shoreline (1983:75).

...the Kuakini wall may have been the Pa'aina named as the makai boundary in several claims to land along its course. At times, the wall reaches a height of 8 or 9 feet, which seems unnecessarily high as a barrier to roaming cattle or pigs...The fact that the term used in the register of claims in "papipi," which refers to a wall or enclosure for cattle, not pigs, should answer the question of what kind of animal the wall was meant to restrict in the 1840s. Perhaps in more recent years it served other purposes. Why it is located between the coast and the gardens, instead of between the grazing land and the gardens, or why it is so high in places, we can only surmise (1983:76).

In this century there existed a small village of 'opelu fishermen who resided at a coconut grove in Keahuolu. Behind this village, known as Makaeo, were several large brackish water ponds where 'opae 'ula thrived. These shrimps were used to mix in the palu or chum, used for catching 'opelu. Several springs and one well provided potable water. The village, coconut grove, and all the pools but one were destroyed during the construction of the Old Kona Airport (Clark 1985:110).

Cartographic material depicting Keahuolu was sought at the State Department of Accounting and General Services, Survey Division. Reg. Map 512 (c.1875) shows only a kukui tree and coconut grove at Pohakuloa. A 1929 U.S.G.S.

topographic quadrangle, however, indicates a sisal mill located in Keahuolu (See Figure B-1). Kelly briefly discusses this crop in her history of the Gardens of Kona (1983:89). She places its cultivation in Kona with the following quote from Thrum (1905:185): "The McWayne sisal tract consisted of about 500 acres at or near Kailua." Kelly adds, "...how much of this acreage was actually planted in sisal is unclear." In an attempt to locate the cultivated area, various articles were consulted and informant interviews conducted.

Early periodical reports concentrate on sisal cultivating efforts on Oahu. The earliest mention of McWayne found is in "History from our Files," which reports for 1918 that "[t]en tons of baled sisal, first of an estimated crop of 200 tons from the McWayne Estate, Kailua, Kona, reached Honolulu for transshipment to San Francisco" (Advertiser July 31, 1948: editorial page). Herman D. Nichols, vice president of Tubbs Cordage Co., suggested in an editorial that utilization of sisal fiber of wild plants throughout the Territory be explored (Advertiser Sept. 20, 1949).

Mr. Minoru Inaba worked at the sisal mill after finishing the 8th grade, in 1920 and 1921. He said that the mill was owned and operated by Luther S. Aungst from 1917 to its closing in 1924. He recollects that there were over 1,000 acres in cultivation in the ahupua'a of Kealakehe and Keahuolu. The mill, abutting Palani Road, was surrounded by the sisal fields. The main problem, Mr. Inaba said, was getting the sisal from the fields to the mill, as it was very bulky and sharp. Field workers would cut the sisal in the field, then bundle and transport it on donkeys to the mill. At the mill the sisal was thrashed, dried, and baled. From Kailua Bay, the bales of dried sisal would be sent to San Francisco on steamers. Mr. Inaba's job was to throw away the by-products. Working with the sisal "made his skin itchy," and he had to wear protective clothing.

According to Inaba, Mr. Aungst played an important role in the development of the Kona district. He started the telephone company that connected Kona with Waimea, and later added Volcano to its line. This phone system was eventually sold to Mutual Telephone Co. Aungst was also the postmaster, and owned a garage in Kona (pers. comm. 2/1/90 and 2/8/90).

Bill Kawahara, a farmer in Waiaha, knows a Mr. Johnnie Long, who was involved in the cultivation of sisal; he hopes to interview Mr. Long for a forthcoming newspaper article. Kawahara noted that McWayne resided at Honokohau, and Aungst at Holualoa. Which of the two owned the mill, and for what years, he did not know (pers. comm. 2/7/90).

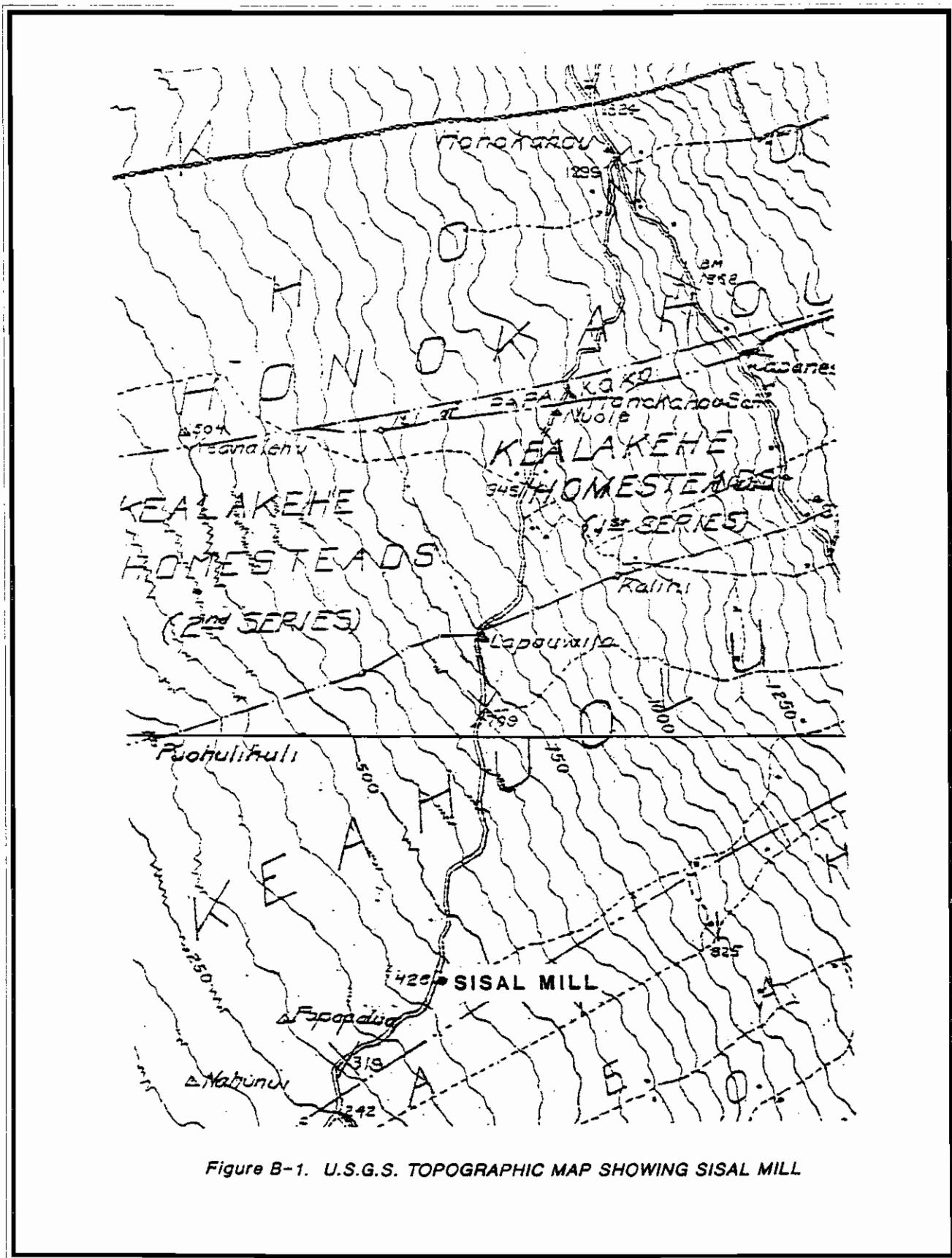


Figure B-1. U.S.G.S. TOPOGRAPHIC MAP SHOWING SISAL MILL

Figure A-1. USGS TOPOGRAPHIC MAP SHOWING SISAL MILL

It is possible that McWayne sold his interests in sisal and the mill to Aungst. A title search for the mill and the areas of cultivation would settle this question.

In a perusal of Tax Map Branch History Sheets dated 1950 to 1983, a navigation easement is noted for TMK 3-7-8:Por. 2 (1950). In 1953, an agreement was made by the trustees to enter the land for purposes of securing the needed engineering and surveying data. For TMK 3-7-8-:Por. 12, an access road to a proposed Kealakehe School Site is listed (1966). In 1969, a centerline for a 10-ft. sewer easement is noted. In 1972, a setup for a 325-ft elevation reservoir site is noted. The Kona Industrial Subdivision appears in 1973, for an area of 22.981 acres. In 1975, a lease to Pay 'N Save Corp., et.al., commences for a period of twenty years.

In the 1981 Status Report for the Trust, expansion of the industrial section is discussed:

A two-year option agreement with Kuakini Corp., which was selected in May as having the most attractive proposal of the five submitted to develop 100 acre expansion of the industrial area, was executed Dec. 8, 1981. The Trust received \$50,000 in payment for the option which allows the developer

to prepare his plans to create approximately 76 one-acre industrial lots and to apply to the County for rezoning.

In 1985, the Trust's 74th Annual Report gives an update for Keahuolu (Liliuokalani Children's Center 1985):

The survey of the mauka Kona farmlots was completed by Austin, Tsutsumi & Assoc. As the leased areas on the map differ from the property description in most of the leases, the lessees will be asked to confirm the area leased so that new leases can be prepared.

There were only two responses to the Trustees' request for proposals to develop the entire Keahuolu parcel. The proposal by Santa Cruz Properties, Inc. for a residential development was rejected by the Trustees. It was agreed that a proposal made by the Gentry Companies was unique and that discussions regarding their proposal should continue.

The Kona Industrial Subdivision Unit 5 area was cleared and grubbed, which created a renewed interest in the five unleased lots.

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