FINAL
ENVIRONMENTAL ASSESSMENT

ELEELE FACILITY PLAN

Prepared for:

County of Kauai
Department of Public Works
Division of Wastewater Management

January 2008

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Project Summary

Project:	Eleele Facility Plan
Proposing Agency:	County of Kauai, Department of Public Works Division of Wastewater Management
Contact Person:	Mr. Edward Tschupp, P.E. Division of Wastewater Management Chief
Purpose:	A planning study for the expansion and management of the Eleele wastewater system to the year 2025
Anticipated Determination:	Finding of No Significant Impact (FONSI)
Location:	Eleele, Hanapepe & Port Allen, Island of Kauai, State of Hawaii
Eleele WWTP Service Area	
Tax Map Key:	Fourth District, First Zone, Eighth Section Fourth District, First Zone, Ninth Section Fourth District, Second Zone, First Section
Property Owner:	Various
State Land Use Classification:	Various
County Zoning Ordinance:	Various
Eleele WWTP	
Tax Map Key:	Fourth District, Second Zone, First Section, First Plat, Forty-Third Parcel
Property Owner:	County of Kauai
State Land Use Classification:	Agriculture
County Zoning Ordinance:	Interior
Pre-assessment Consultation:	State Department of Hawaiian Home Lands County of Kauai, Department of Planning County of Kauai, Department of Public Works

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ACRONYMS AND ABBREVIATIONS

A&B	Alexander and Baldwin
BMP	Best Management Practice
CIP	Capital Improvement Plan
CZO	Comprehensive Zoning Ordinance
DHHL	Department of Hawaiian Home Lands
DOH	Department of Health
EA	Environmental Assessment
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
HAR	Hawaii Administrative Rules
HRS	Hawaii Revised Statutes
HSRFP	Hawaii State Revolving Fund Program
IWS	Individual Wastewater Systems
MBR	Membrane Bioreactor
mgd	Million Gallons per Day
MSL	Mean Sea Level
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National and State Register of Historic Places
RAS	Return Activated Sludge
SERP	State Environmental Review Process
SMA	Special Management Area
SPS	Sewage Pump Station
UIC	Underground Injection Control
USDA SCS	U.S. Department of Agriculture Soil Conservation Service
UV	Ultraviolet
WAS	Waste Activated Sludge
WWTP	Wastewater Treatment Plant

I. INTRODUCTION

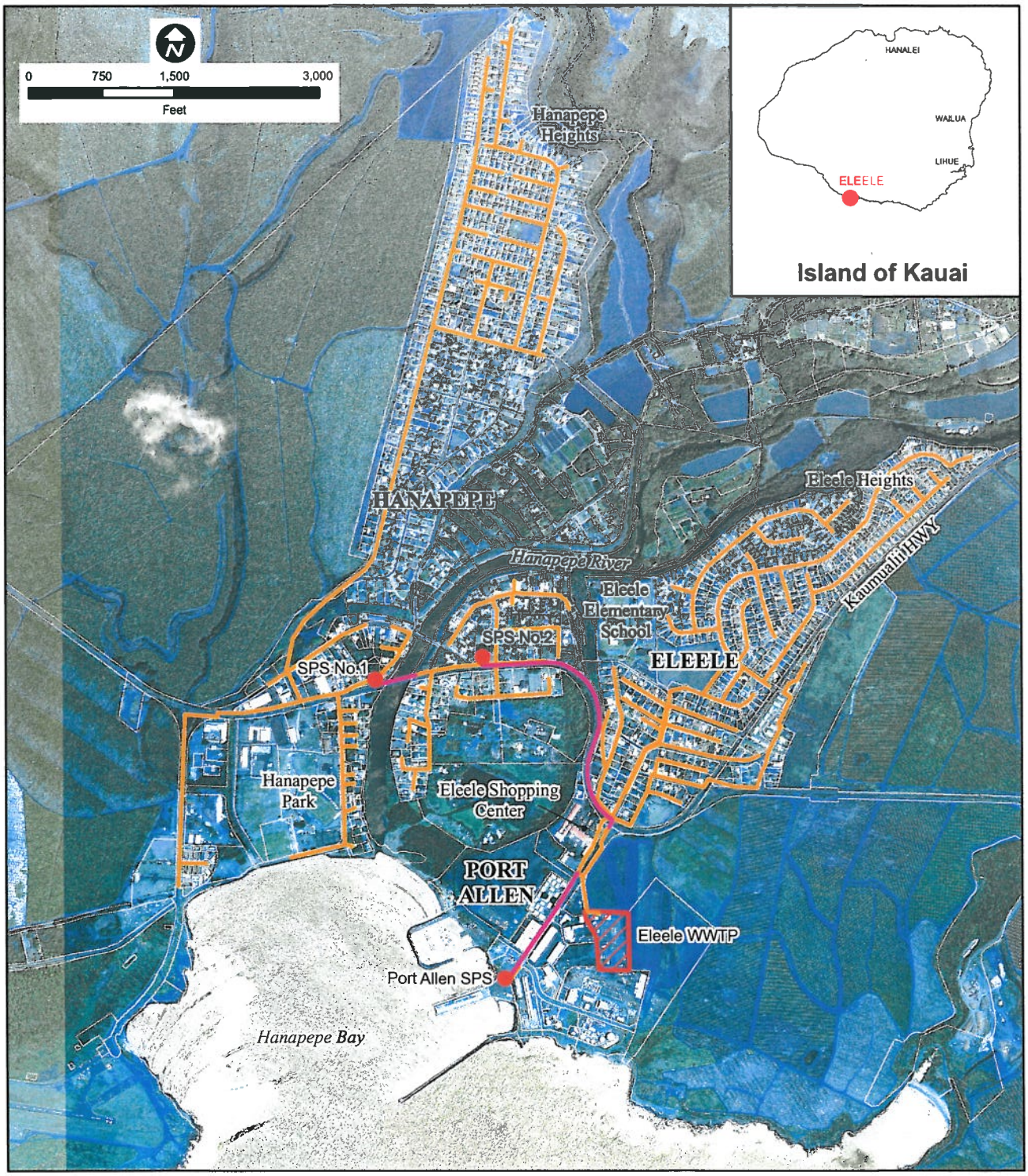
A. PROJECT SUMMARY

The purpose of this project is to develop a comprehensive wastewater facility plan for the Eleele Wastewater System, County of Kauai, State of Hawaii.

The planning period for this project encompasses the period from the present to the year 2025. This report shall be used to help improve water quality, protect public health, and accommodate planned future growth. The plan includes estimation of the future wastewater flow based on population growth estimates up to the year 2025 and consultation with State and County agencies; evaluates future wastewater treatment and effluent disposal alternatives; and estimates costs and pricing data for the alternatives. These considerations will be used to determine the timing and need for expansion of the Eleele Wastewater Treatment Plant (WWTP) and other construction within the Eleele wastewater system.

For the overall planning period, three planning intervals were selected as follows: near term, middle term, and far term. The near term improvements are those that should be implemented within the next few years (present-2010). The middle term improvements should be implemented in the following five years (2010-2015). The far term improvements should be implemented in the following 10 years (2015-2025) or beyond. The project location map is shown on Figure 1.

This project may be funded by Federal Funds through the State of Hawaii Clean Water State Revolving Fund Program. The project will be required to meet all National Environmental Policy Act (NEPA) and Hawaii State Revolving Fund Program (HSRFP) requirements.



LEGEND:

Forcemain

Sewermain

ELEELE FACILITY PLAN

Project Location

COUNTY OF KAUAI
Department of Public Works
Division of Wastewater Management

FIGURE 1

B. BACKGROUND

In the Eleele and Hanapepe area, wastewater treatment is accomplished with individual wastewater systems (cesspools or septic tanks) or at the County owned and operated Eleele WWTP. Wastewater is conveyed to the plant through the County collection system.

The Eleele WWTP was originally constructed in 1977 and receives wastewater from the Eleele and Hanapepe areas. Its service area is shown on Figure 1. The Eleele WWTP facility was originally designed to treat an average flow of 0.4 million gallons per day (mgd). The treatment plant was expanded in 1995 to the current design average daily flow of 0.8 mgd and a design peak flow capacity of 3.3 mgd. According to the State of Hawaii, Department of Health (DOH), "Hawaii Administrative Rules (HAR) – Wastewater Systems, §11-62-23.1(i)" (Reference 1):

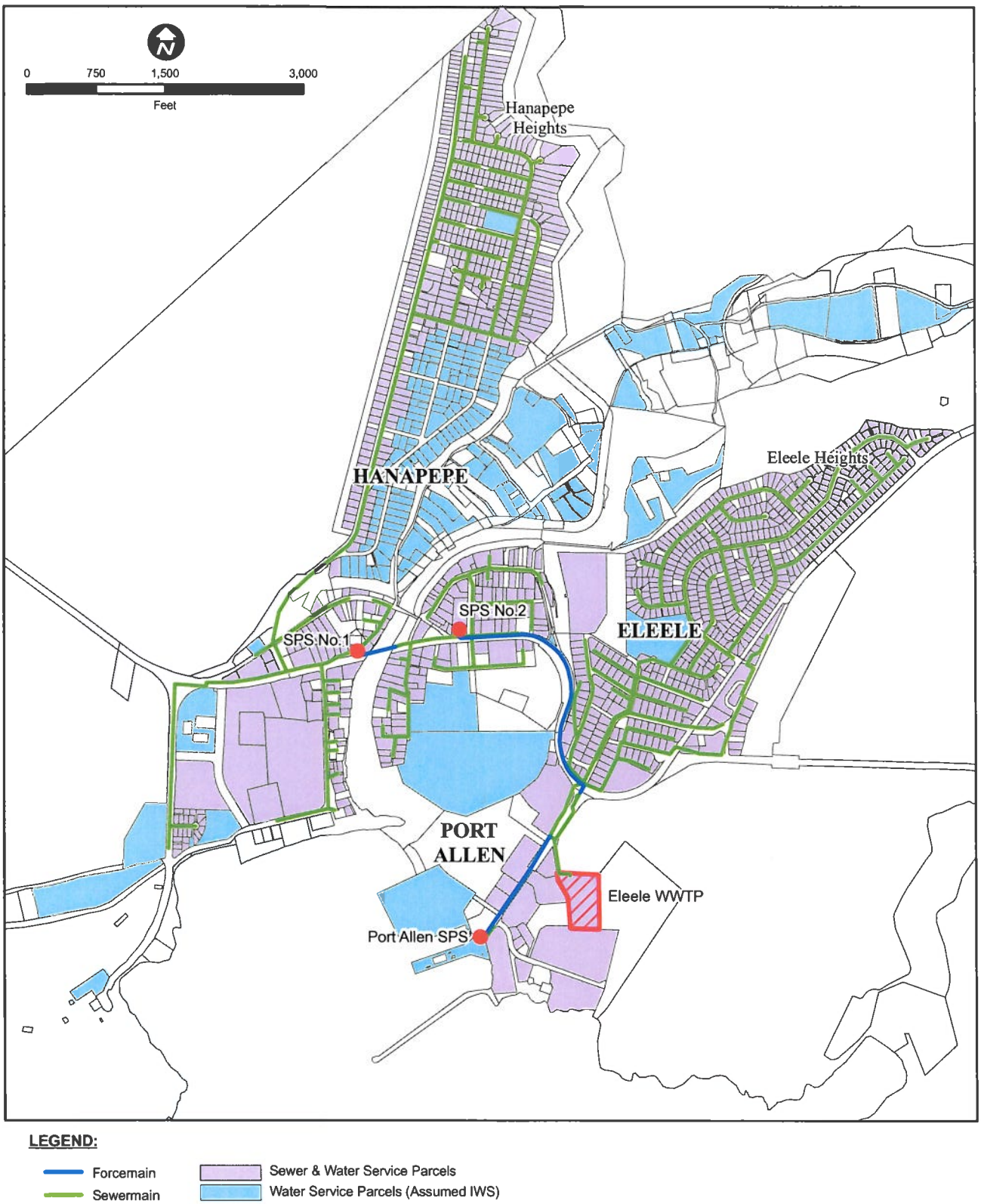
> "For public wastewater treatment works a facility plan shall be initiated when the actual wastewater flow reaches 75 per cent of the design capacity of the wastewater treatment works. Implementation of the recommendation of the facility plan shall be initiated when the actual wastewater flow reaches 90 per cent of the design capacity of the wastewater treatment works."

The treatment plant currently receives approximately 0.60 mgd average daily flow, which is 75 percent of current design flow. The County of Kauai, Department of Public Works, Division of Wastewater Management initiated a facility plan that consists of future wastewater flow projections and improvement plans up to the year 2025.

C. PROJECT TECHNICAL DESCRIPTION

1. Existing Facilities

Although the wastewater collection system extends to Eleele and Hanapepe, many residences are still using individual treatment systems, most of them being cesspools. DOH prohibits cesspools for any new construction. However, existing cesspools for single-family residential are allowed to remain. Figure 2 shows the parcels in the Eleele and Hanapepe area that have water and sewer service. Individual Wastewater Systems (IWS), such as cesspools or septic tanks, are assumed to be used in the parcels that have water service but no sewer service. The existing County collection system for the Eleele and Hanapepe area consists of gravity lines, pump stations, and force mains. There are three sewage pump stations (SPS) that convey flow to the Eleele WWTP. Each pump station consists of an underground, prefabricated steel dry well that houses the pumps with a concrete wet well to contain the sewage. All three pump stations were constructed in 1977. Figure 3 shows the existing facilities.



ELEELE FACILITY PLAN

Water & Sewer Service Area

COUNTY OF KAUAI
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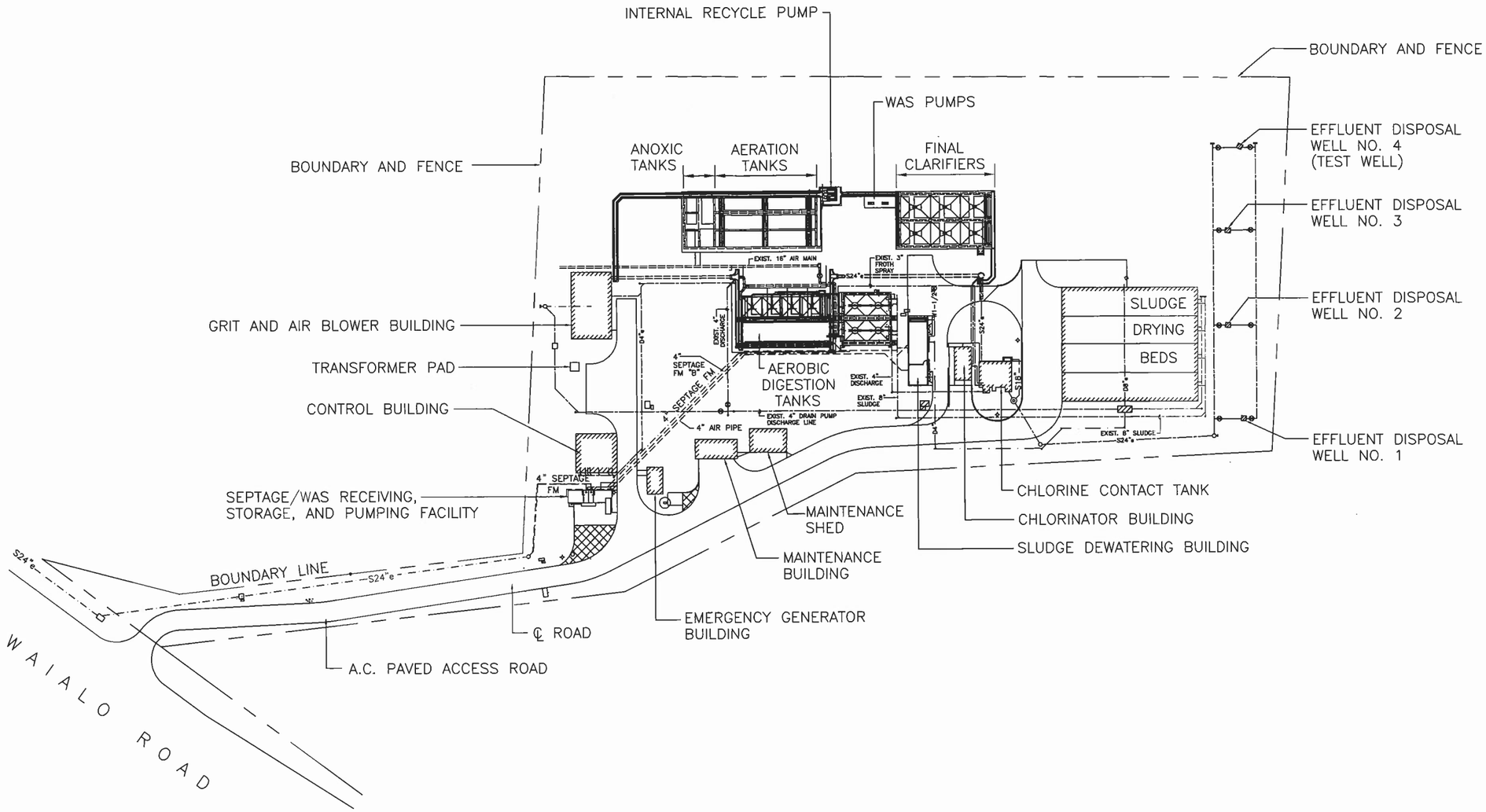
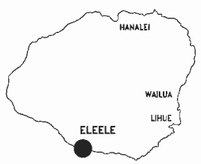
FIGURE 2





Island of Kauai

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FIGURE 3

EXISTING FACILITIES

The Eleele WWTP is designated as an R-2 facility, which means the plant provides secondary treatment and disinfection. This meets the minimum requirements for wastewater treatment per HAR Title 11, Chapter 62.

The Eleele WWTP currently uses three underground injection wells for disposal of treated plant effluent. There is a test well that was previously used for effluent disposal, but is plugged and currently not in use. The plant only uses Injection Wells No.2 and 3 to dispose of plant effluent because the Injection Well No.1 was observed to be clogging.

2. Near Term (Present-2010)

The projected wastewater flow for the near term is approximately 0.75 mgd. This will increase the wastewater flow to the Eleele WWTP by approximately 0.15 mgd from the current wastewater flow. This increase in flow is primarily from recent developments by Alexander & Baldwin (A&B) in Port Allen, and self-help housing projects in Eleele. The near term flows to the Eleele WWTP will not require an expansion of plant capacity. However, the design of the treatment plant expansion will be triggered when actual plant flow reaches 90% of design capacity (0.72 mgd). Therefore, design of a plant expansion should begin during the near term. The recommended near term improvements shall improve safety, reliability and operability of the treatment plant and collection system, as well as resolve any permit or code issues. Figure 4 shows the recommended near term improvements. The recommended near term Capital Improvement Plan (CIP) improvements are as follows:

- Repair or replace pump station flow meters.
- Place septage receiving station back in service and install flow metering system.
- Remove existing coarse screen and replace Channel Monster with a mechanical bar screen.
- Replace influent flow meter at the headworks.
- Replace the existing internal recycle pump at the aeration basins and install a second pump.
- Install dissolved oxygen sensors at anoxic and aeration basins, and motorized air flow control dampers at the blowers.
- Provide chlorine solution injection at the clarifiers for algae control.
- Purchase an uninstalled spare RAS pump.
- Repair the air piping near the headworks.
- Replace the sheaves for the existing positive displacement blower.
- Provide second blower for aerobic digesters for reliability.
- Remove bypass structure at chlorine contact basin to increase contact time.
- Install emergency chlorine scrubber package.
- Clean Injection Well No.2 and 3.

- Repair or replace combustible gas detection system within enclosed headworks.
- Seal the door between the headworks and the blower room.
- Install fire detection and alarm system in the sludge dewatering building.
- Install disconnect switch at SPS No.1
- Inspect and repair emergency generator at SPS No.2.
- Inspect and repair emergency generator at Eleele WWTP.

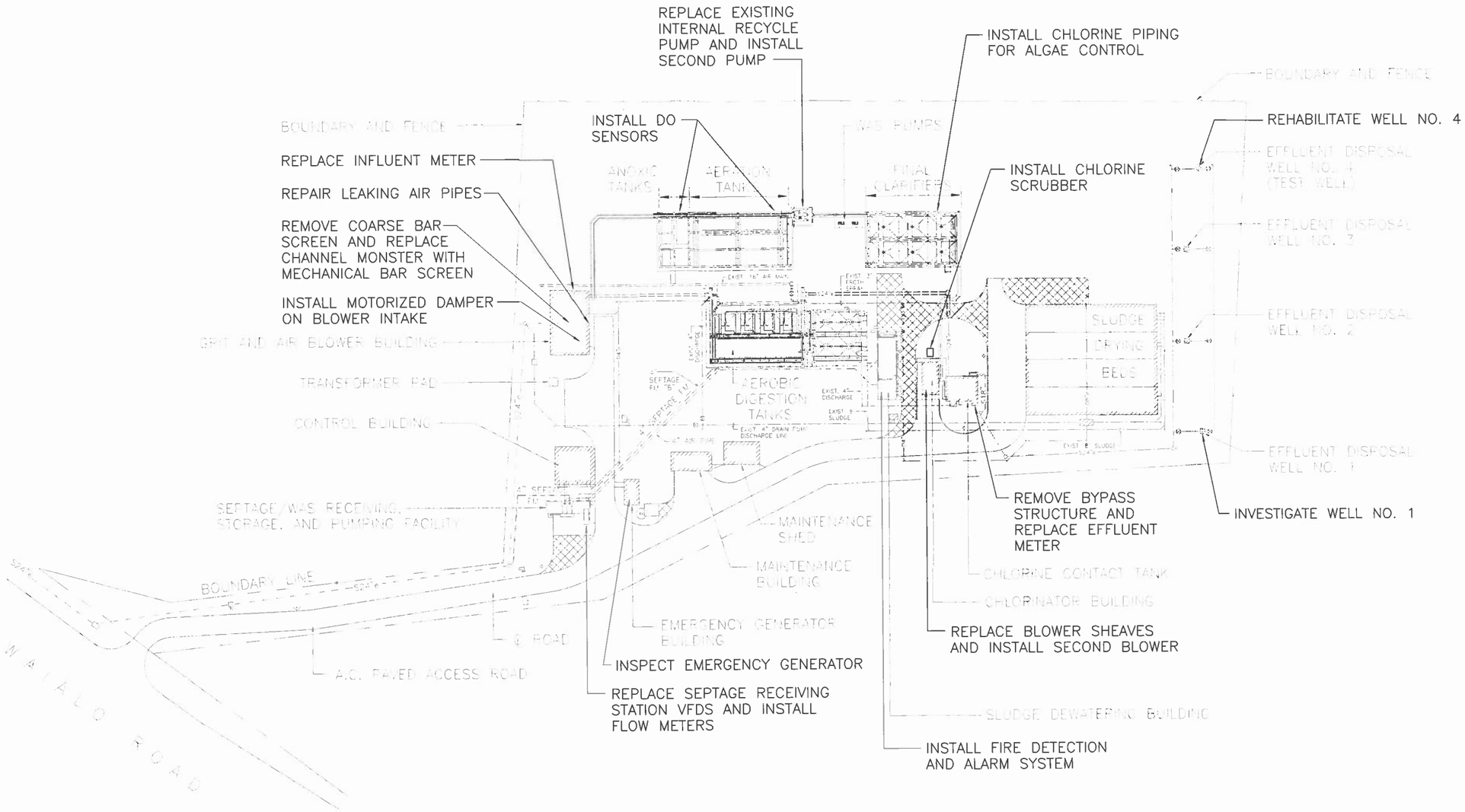
The estimated costs for the near term Capital Improvement Plan projects are $2.5 million.

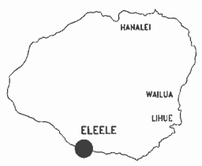
The recommended near term non-CIP improvements are as follows:

- Implement pretreatment and illegal discharge monitoring and enforcement program.
- Increase plant staffing and hire additional electrician and chemist.
- Implement investigation of Injection Well No.1 to determine if the well should be salvaged or abandoned.

The estimated present worth non-CIP costs are $2.15 million.

The Eleele WWTP will continue to use injection wells for effluent disposal. The County is planning to modify injection well No.4 to restore to service the inactive well on the treatment plant site.





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LEGEND

BOLD	RECOMMENDED NEAR TERM IMPROVEMENTS
SCREENED	EXISTING FACILITIES

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FIGURE 4

RECOMMENDED NEAR TERM IMPROVEMENTS

3. Middle Term (2010-2015)

The projected middle term wastewater flow of 0.87 mgd will exceed the design capacity of the Eleele WWTP and will thus require an expansion of the plant facilities. The projected increase in wastewater flow is from a planned A&B development in Eleele, and connecting the existing Hanapepe Heights subdivision to the County collection system. This expansion should be sized to also treat the far term estimate flows, so another expansion would not be required for the far term. The middle term expansion will increase the Eleele WWTP capacity from 0.8 mgd to at least 1.0 mgd. The recommended middle term improvements are as follows:

- Construct one new anoxic tank and one new aerobic train. Anoxic mixers, aeration piping, diffusers, and other appurtenances shall match the existing anoxic and aerobic tanks. Any near term recommendations shall also be included in the new tanks.
- Install a third centrifugal blower with a motorized intake damper.
- Construct one new circular clarifier with a spiral scraper. The new clarifier will be used in conjunction with the existing clarifiers. The new clarifier will have 2 RAS pumps. The existing WAS pumps will be used.
- Install 2 cloth disk filters. Filtration is not currently required at the Eleele WWTP, but will provide higher quality effluent and should improve the performance of the injection wells. A booster pump station may also be required to offset additional head loss created by the filters.
- Construct a new ultraviolet (UV) disinfection system to replace the existing gaseous chlorine system.
- Provide a gravity belt sludge thickening system prior to sludge dewatering.
- Replace the existing sludge dewatering system with a centrifuge to provide dryer sludge cake. The existing sludge drying beds shall remain as back-up.
- Construct a new electrical building and replace main electrical service.
- Acquire additional land for future expansion of the WWTP.

Figure 5 shows the recommended middle term improvements. The estimated construction cost for the middle term expansion is $12.7 million. This does not include the cost for land acquisition. A different treatment process is not recommended for the Eleele WWTP. The existing process performs well, and converting to a different treatment process would require the modification of existing facilities and replacement of equipment that would be much more expensive than expanding the existing treatment process. For example, to convert the treatment plant to an MBR plant would cost approximately $21.4 million, over 1.6 times the cost of expanding the existing process.

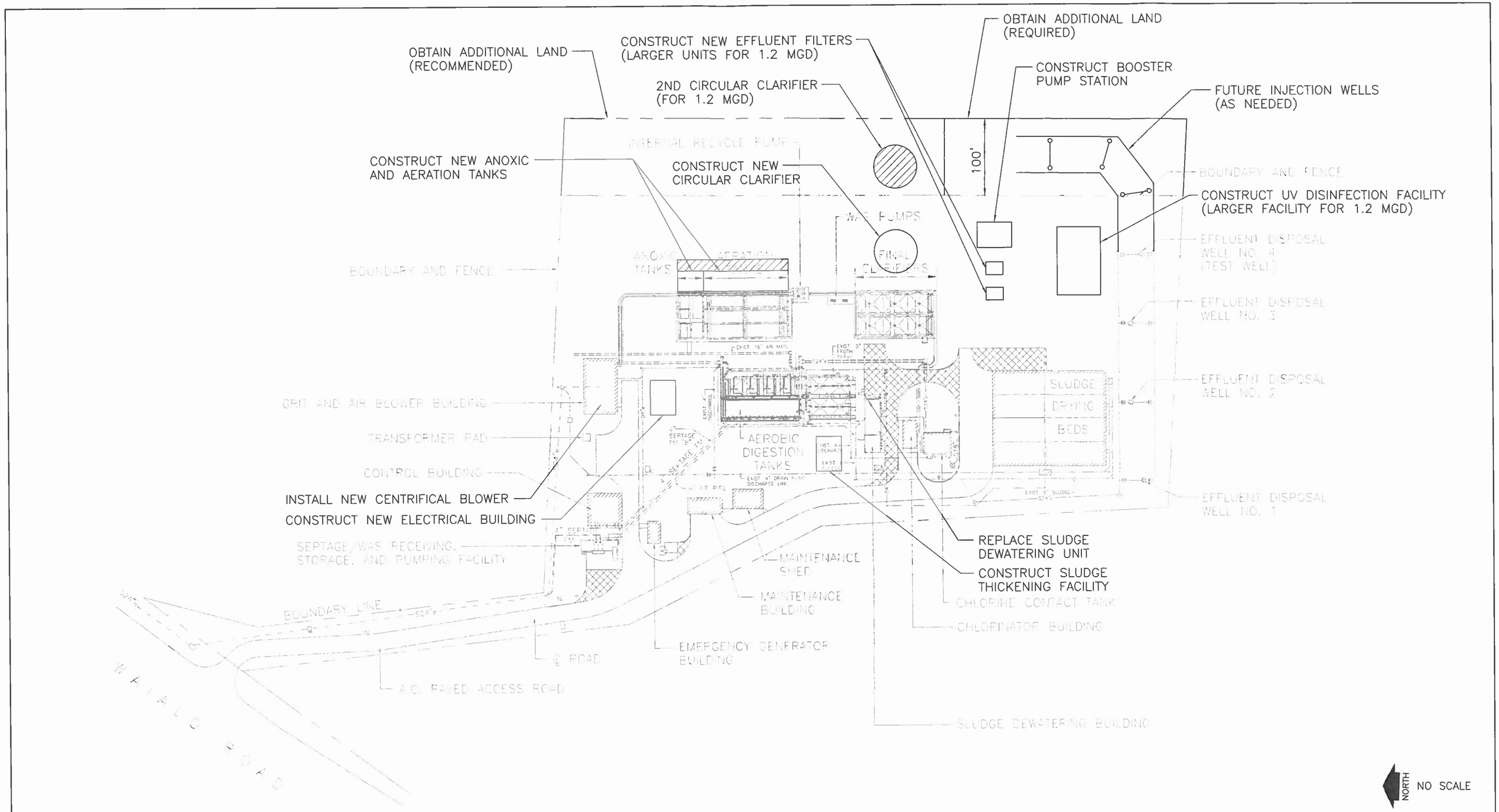
Previous construction and expansion at the treatment plant have been in 0.4 mgd increments. If the County elects to do so, the Eleele WWTP may be expanded in a 0.4 mgd increment, increasing the middle term treatment capacity to 1.2 mgd.

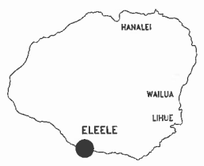
These additional facilities are required if the middle term expansion is increased to 1.2 mgd:

- An additional circular clarifier with a spiral scraper.
- An additional aerobic train.
- Larger cloth disk filtration facilities.
- Larger UV disinfection facilities.

The additional cost to expand the plant to 1.2 mgd over the expansion to 1.0 mgd is approximately $3.4 million.

With the recommended upgrade in plant effluent to R-1 quality water, the County should investigate potential customers to reuse plant effluent. Potential uses for reclaimed water include: irrigation, industrial uses, and wash water at the treatment plant. The injection wells will continue to be used for effluent disposal during inclement weather when there is no demand for reuse.





Island of Kauai

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▨	ADDITIONAL MIDDLE TERM IMPROVEMENTS FOR 1.2 MGD EXPANSION
BOLD	RECOMMENDED MIDDLE TERM IMPROVEMENTS FOR 1.2 MGD EXPANSION
SCREENED	EXISTING FACILITIES

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FIGURE 5

RECOMMENDED MIDDLE TERM IMPROVEMENTS

4. Far Term (2015-2025)

The treatment plant expansion during the middle term will have sufficient capacity to treat the projected far term wastewater flow of 0.98 mgd. The projected increase in wastewater flow is based on the population growth projected by the Kauai Planning Department to the year 2025. The Kauai Planning Department regularly updates the long-range population projections to stay in compliance with Federal transportation laws and regulations. The following far term improvements are recommended to replace old processes that will likely be at the end of their service life:

- Replace the existing collection system pump stations (3 total) with new pump stations. New sites must be acquired for the new pump stations.
- Construct new headworks to replace the existing headworks completely.
- Construct new aerobic digester adjacent to existing digesters.
- Consider plant improvements to allow effluent reuse, including a reclaimed water pump station.
- Increase plant staffing.
- Expand electrical distribution for new facilities.

The construction cost for the far term improvements is estimated at $15.2 million. This does not include the cost to acquire additional land for the new pump stations.

The proposed Department of Hawaiian Home Lands (DHHL) subdivision in Hanapepe is out of the service area of the Eleele WWTP and on lands designated as Agriculture. The County may allow DHHL to connect to the County collection system, or DHHL may be required to construct its own treatment system. If DHHL connects to the County collection system, this will increase the projected far term wastewater flow to 1.39 mgd, and the Eleele WWTP and collection system will need to be expanded. The following actions would be required, in addition to the previously stated far term improvements:

- Replace 8" trunk sewer in Kaumuali'i Highway, upstream of SPS No.1 with a new 15" line.
- Replace the existing 15" and 18" trunk sewers in Kaumuali'i Highway, upstream of SPS No.1 and No.2 with new 21" lines.
- Construct new anoxic and aerobic tanks that mirror the existing tanks. Anoxic mixers, aeration piping, diffusers, and other appurtenances shall match the existing anoxic and aerobic tanks. Any near term recommendations shall also be included in the new tanks.
- Construct a new circular clarifier to match the one constructed in the middle term.
- Install a new effluent filter to match the units installed in the middle term.

- Construct a new UV disinfection train to match the ones constructed in the middle term.

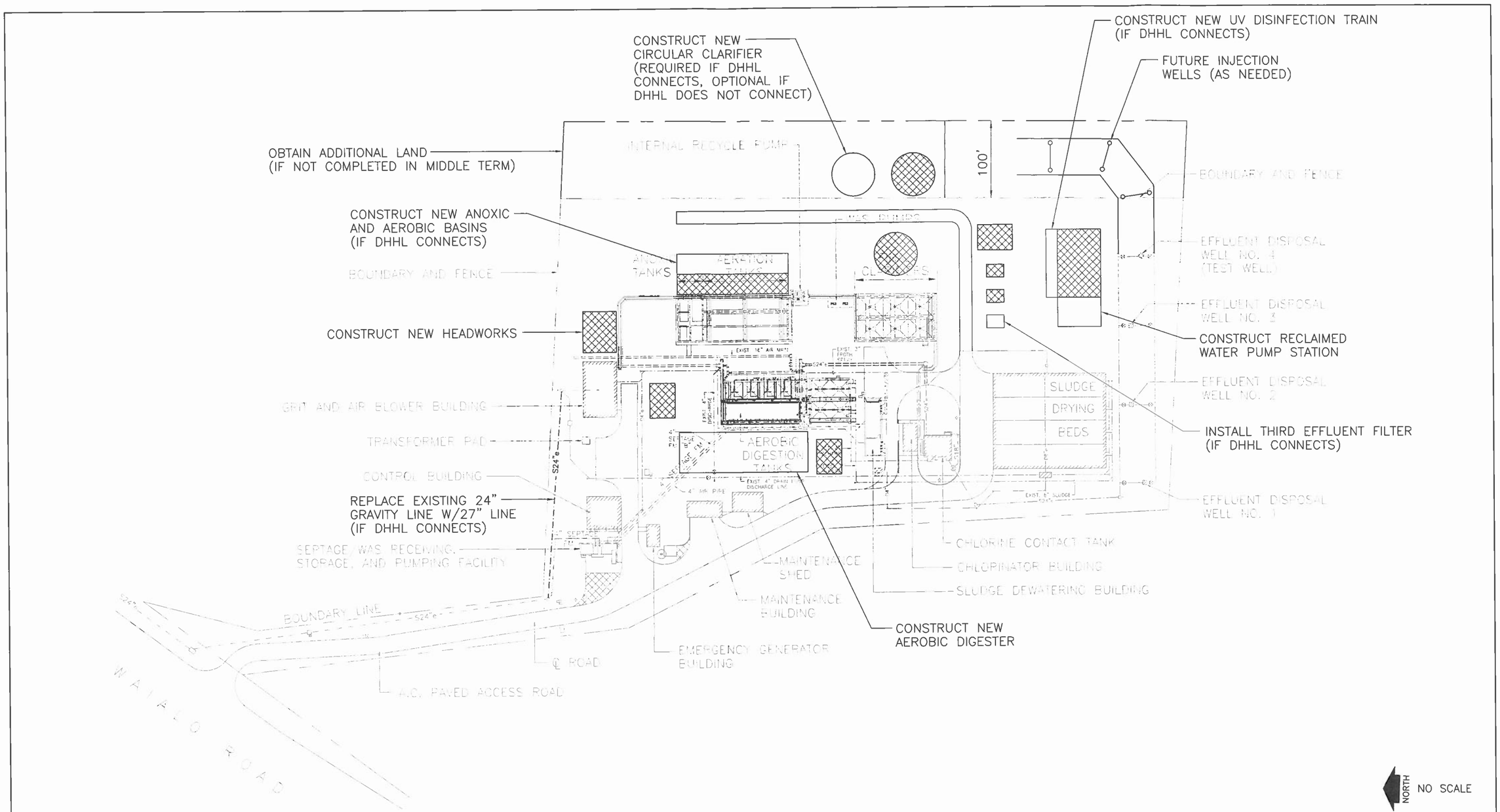
If DHHL connects to the County system, the estimated construction cost for the far term improvements is an additional $10.8 million, for a total of $26.0 million. Figure 6 shows the recommended far term improvements.

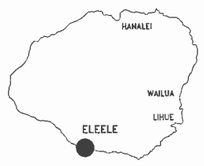
Assuming suitable reclaimed water users have been found, plant effluent will be re-used. This will reduce potable water usage and provide a beneficial use of plant effluent. The injection wells will remain for emergency disposal.

D. LAND ACQUISITION

The Eleele WWTP will require additional land for future facilities such as injection wells and clarifiers. The process to acquire land can be a long process. Therefore, the County should begin the process of acquiring additional land (approximately 1.38 acres) from the adjacent land owner, Alexander and Baldwin.

The County will also need to acquire new sites to replace the existing pump stations. The preferred locations for the new pump stations in Hanapepe are owned by the State of Hawaii in the vicinity of the existing pump stations. The preferred location for the Port Allen SPS is adjacent to the existing pump station on land currently owned by A&B. If the land cannot be acquired from A&B, the County may need to negotiate with the State for the alternative SPS site on two State properties, Tax Map Key 2-1-3:06 & 2-1-3:10, next to A&B land.





Island of Kauai

LEGEND

▩	RECOMMENDED MIDDLE TERM IMPROVEMENTS
BOLD	RECOMMENDED FAR TERM IMPROVEMENTS
SCREENED	EXISTING FACILITIES

Kauai County
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FIGURE 6

RECOMMENDED FAR TERM IMPROVEMENTS

II. DESCRIPTION OF THE ENVIRONMENT

A. LAND CLASSIFICATION AND ZONING

1. State Land Use

   The State Land Use Commission classifies all State lands as Urban, Rural, Agricultural, or Conservation with the intent to accommodate growth and development and to manage the natural resources of the area. The State Land Use classification of the service area of the Eleele WWTP is varied. See Figure 7 for the State Land Use zone designation.

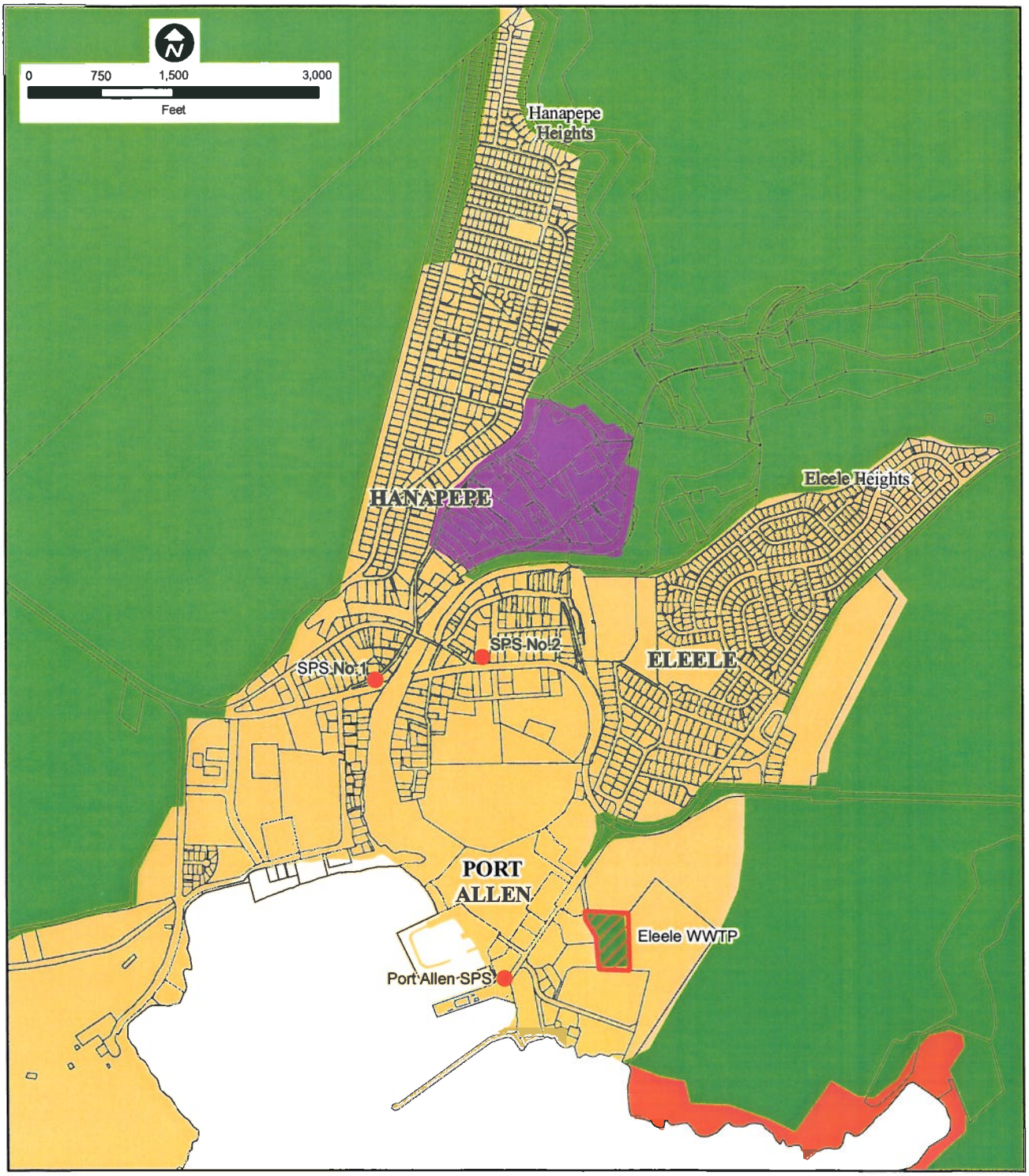
2. County Land Use

   The Comprehensive Zoning Ordinance (CZO) for the County of Kauai regulates more detailed land use zoning for the State designated land classifications (reference 2). The CZO of the Eleele WWTP service area is varied. The Comprehensive Zoning Ordinance map for the project area is shown in Figure 8. The areas designated as "Interior" are generally areas designated as Agricultural or Conservation by the State Land Use Commission. Special Treatment – Public district is regulated for general public and quasi-public purposes, such as public facilities and gathering places.

3. Kauai General Plan

   The County of Kauai establishes the structure and organization of the government, and defines the responsibilities of the County. The County of Kauai is legally mandated to prepare and adopt a Kauai General Plan by State law and the County Charter. The General Plan provides guidance of land use regulations, the location and character of new development and facilities, and planning for County and State facilities and services.

   The Kauai General Plan addresses development patterns, and needs unique to the communities; explain social economic and environmental impacts of potential developments; and set the desired sequence, patterns and characteristics of future developments. The Kauai General Plan also identifies objectives, priorities, policies and implementation actions with respect to various development matters, including wastewater systems.



ELEELE FACILITY PLAN

STATE LAND USE

COUNTY OF KAUAI
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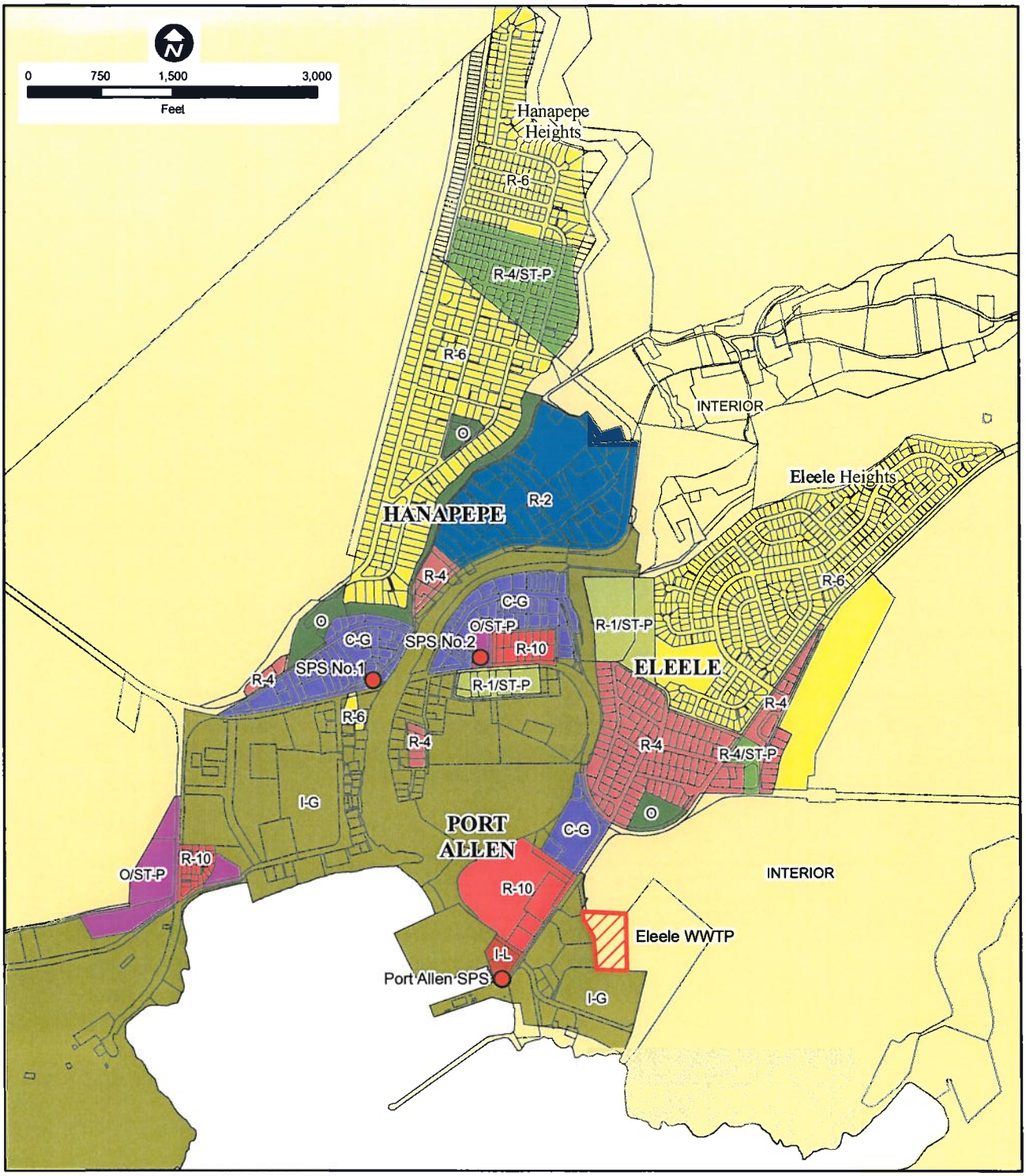
FIGURE 7



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ZONING DISTRICTS

R: Residential
O: Open
C: Commercial
I: Industrial
ST: Special Treatment

ELEELE FACILITY PLAN **Comprehensive Zoning Ordinance**

COUNTY OF KAUAI
Department of Public Works
Division of Wastewater Management

FIGURE 8

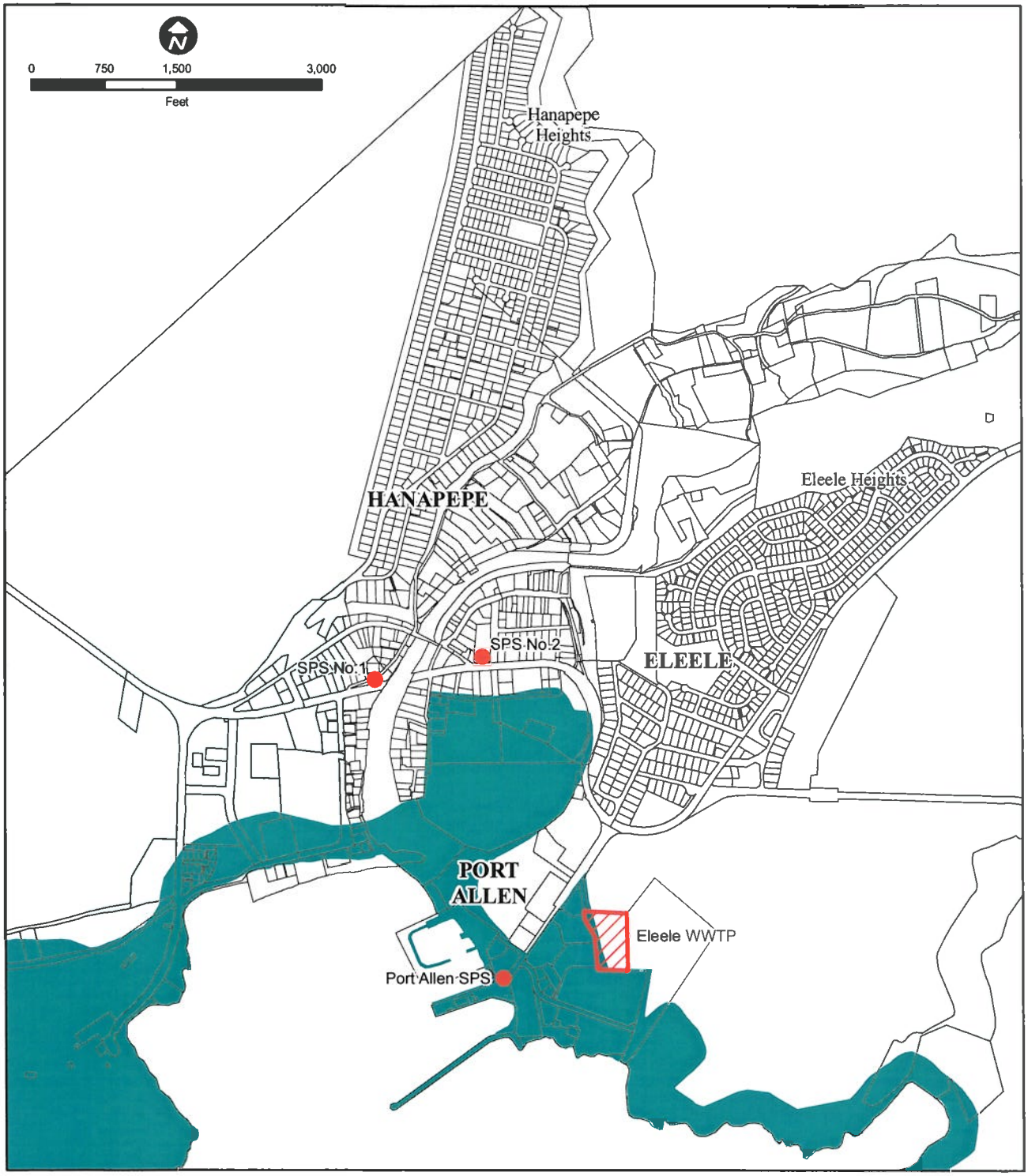
The Kauai General Plan identifies four wastewater systems, including Eleele WWTP, on the island of Kauai. The Kauai General Plan Chapter 7.5.1.1 describes the status of Eleele WWTP as:

> "...collection system needed to extend service to Hanapepe Heights. Further expansion will be needed to accommodate future Department of Hawaiian Homelands development on Hanapepe Heights."

The Kauai General Plan includes the Land Use Map that depicts policy for long-range land uses with the following map designations: Urban Center, Resort, Residential Community, Agriculture, Open, Park, Transportation, Military. The Eleele WWTP is located in the Urban Center land use district. Likewise, Port Allen SPS is located in the Urban Center. SPS No.1 and SPS No.2 are located in the Residential Community district (reference 3).

4. Coastal Zone Management Program

The County of Kauai has established Special Management Area (SMA) ordinances to protect the natural resources of the coastal zone of Kauai. Any development or activity proposed within the SMA must apply for a permit or obtain an exemption. The SMA extends from the shoreline inland to a demarcation line established by the County and is shown on Figure 9. The western edge of the Eleele WWTP site is within the SMA. Any construction within an SMA requires approval from the County of Kauai, Planning Division in the form of a permit or an exemption. However, this is only required for work within the SMA. Any work on the treatment plant site that is not in the SMA will not require a permit.



LEGEND:

Special Management Area

ELEELE FACILITY PLAN

SPECIAL MANAGEMENT AREA

COUNTY OF KAUAI
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FIGURE 9

B. LAND OWNERS

Eleele WWTP is located at 4440 Waialo Road, Eleele, Kauai and identified by Tax Map Key 2-1-01: 43 as shown in Figure 10. SPS No.1, SPS No.2, and Port Allen SPS are identified by Tax Map Keys 1-9-05: 47, 1-9-10: 94, and 2-1-03: 02, respectively. The County of Kauai owns Eleele WWTP, along with SPS No.1, SPS No.2, and Port Allen SPS. Kaumualii Highway is owned by the State of Hawaii. The lands surrounding the Eleele WWTP are owned by Kauai Island Utility Co-op and Alexander & Baldwin. Port Allen SPS is adjacent to the properties of State of Hawaii and Alexander & Baldwin. A large property located on the west side of Hanapepe town is owned by Department of Hawaiian Home Lands.

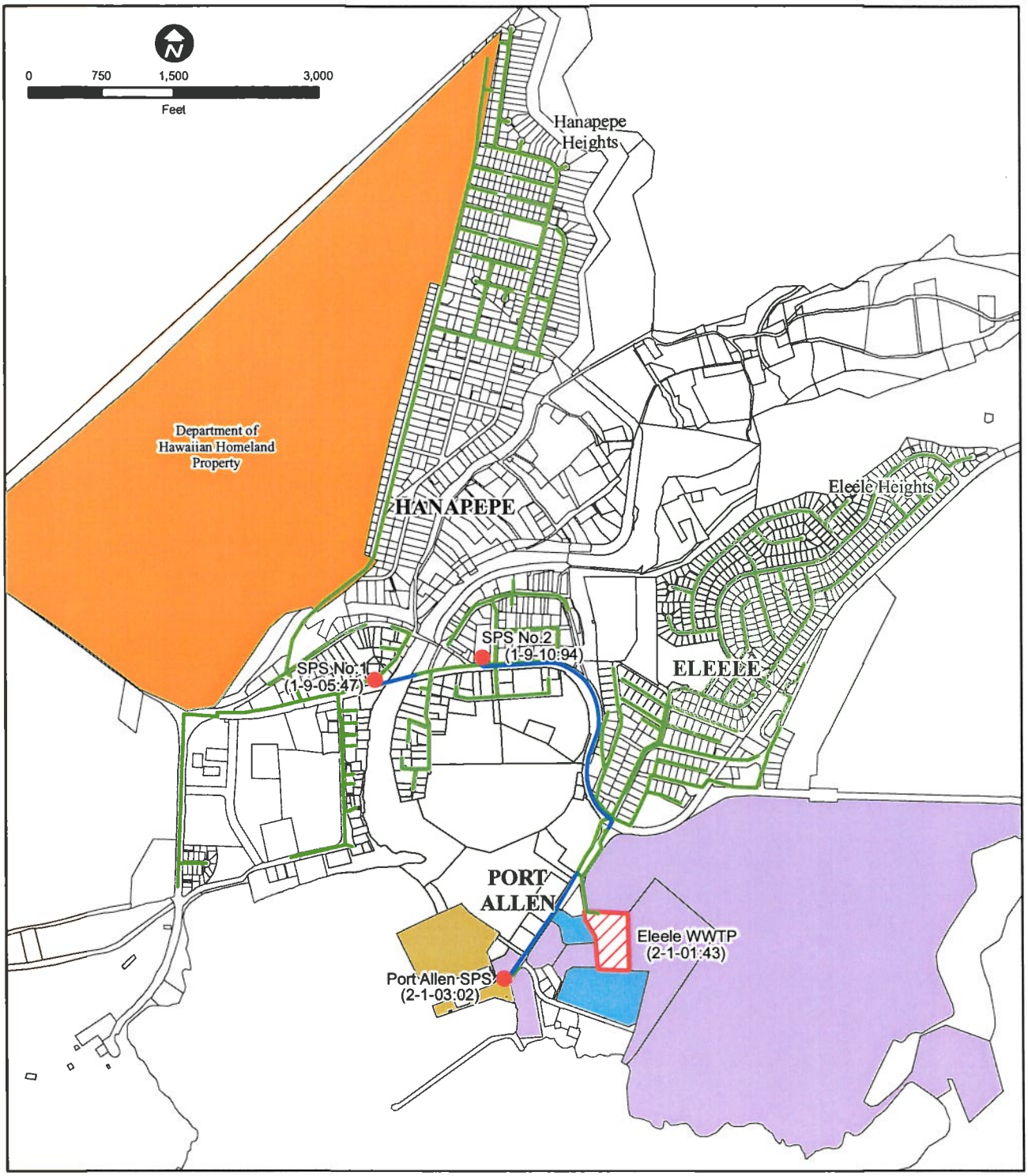
C. PHYSICAL FEATURES

1. General

The Eleele area is located on the southwest side of the island of Kauai, State of Hawaii. Kauai is the northernmost and geologically the oldest of the main Hawaiian Islands. It comprises 549 square miles of land area and 90 miles of coastline, and is the fourth largest in size and population.

Kauai is generally circular in shape with an average diametric width of 30 miles. The higher central mountainous sector is dominated by Mount Waialeale, with a peak elevation slightly more than 5,000 feet. Except for about 10 miles of sea cliffs along the northwesterly Napali Coast, the overall terrain rises gently inland from the relatively flat coastal plains to the farmlands and agricultural belt, then toward the grassy uplands, rolling foothills and forest reserves before ascending the hinterlands and the rugged slopes of Mount Waialeale.

The project area focuses on the Eleele WWTP, three sewer pump stations, and its sewerage service area, which includes the contiguous communities of Hanapepe, Eleele, and Port Allen.



LEGEND:

Forcemain
Sewermain

Properties adjacent to the Eleele WWTP and Port Allen SPS

Property of Alexander & Baldwin
Property of Kauai Island Utility Co-op
Property of State of Hawaii

ELEELE FACILITY PLAN **Major Land Owners & Project Site TMK**

COUNTY OF KAUAI
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FIGURE 10

2. Topography

   From the shoreline, the land gradually rises inland to the island's highest point, Mt. Waialeale, at about 5,000 feet above sea level. Hanapepe River and Hanapepe Valley splits the service area into four general service areas referred to as Hanapepe Heights, Hanapepe Town West, Hanapepe Town East, and the Eleele Heights-Port Allen areas. Ground elevations are relatively low within the Hanapepe Valley area rising from about 5 feet along the coast to about 15 feet into the valley. Hanapepe Heights and Eleele Heights are higher. Hanapepe Heights ground elevations vary from about 10 feet above sea level in Hanapepe Town to about 250 feet near the top of residential zoned areas of Hanapepe Heights. Eleele and Port Allen ground elevations vary from about 10 feet near the sea shore to about 50 feet near the Eleele WWTP and to about 200 feet. Figure 11 shows the topography of the area.

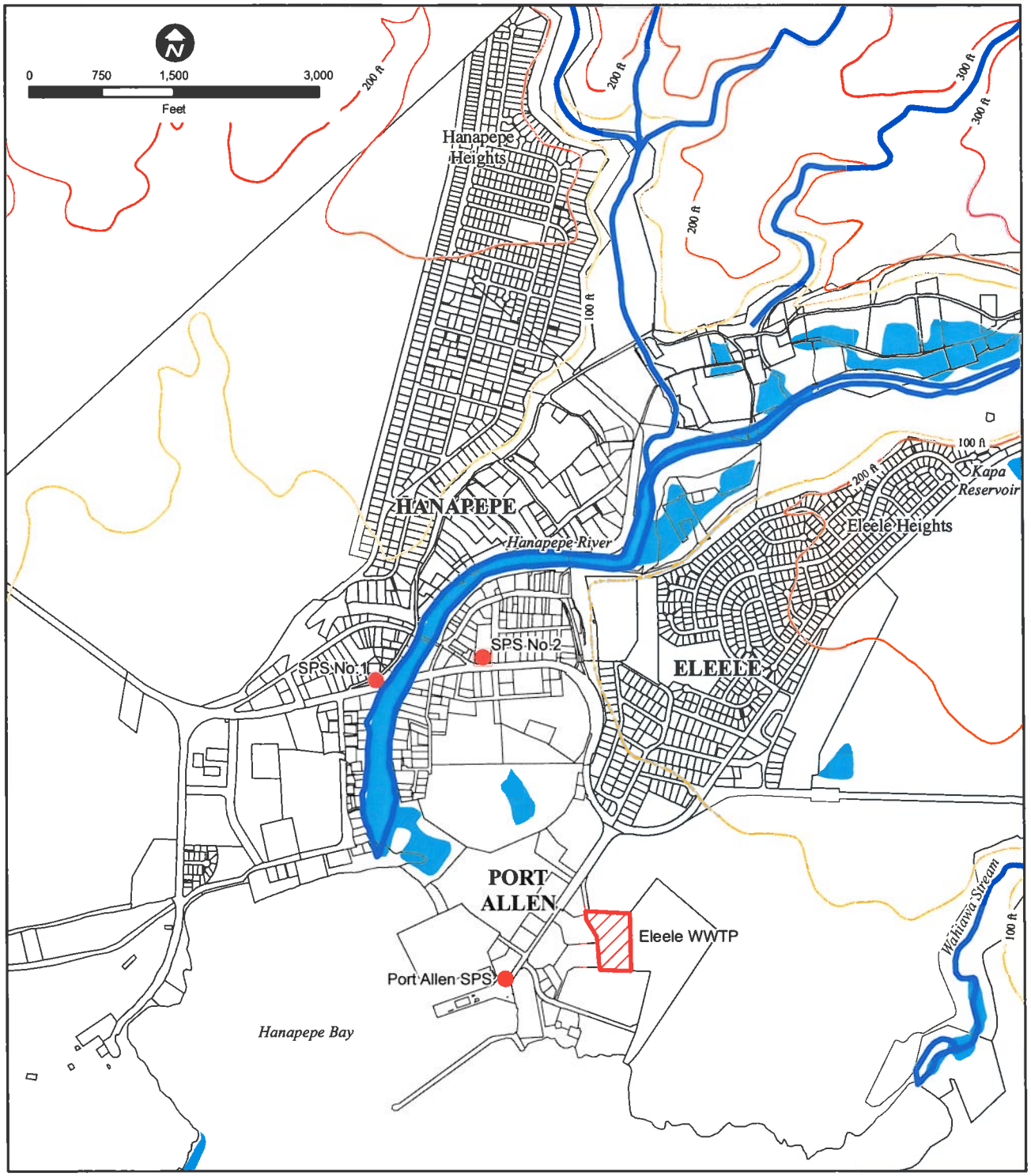
3. Wetlands

   The U.S. Department of Interior, Fish and Wildlife Service "National Wetlands Inventory Maps 1978" does not identify any wetland in the vicinity of the Port Allen SPS, SPS No.1, SPS No.2, and the Eleele WWTP, as seen in Figure 11.

4. Soils

   According to the Soil Survey issued in 1972 by the U.S. Department of Agriculture Soil Conservation Service (USDA SCS), soils of the project area are classified as "*Makaweli-Waiawa-Niu Association: deep, gently, sloping to steep, well-drained soils that have a dominantly moderately fine textured or fine textured subsoil and shallow, steep and very steep, well-drained soils over basalt bedrock; on uplands*". Figure 12 shows the detailed soil classification of the project area. Eleele WWTP and Sewer Pump Stations are located on the following soils:

   - Eleele WWTP: Makaweli silty clay loam, 0 to 6 percent slopes (MgB).
   - Port Allen SPS: Makaweli Stony silty clay loam, 20 to 35 percent slopes (MhE).
   - SPS No.1 & No.2: Pakala clay loam, 0 to 2 percent slopes (PdA).



LEGEND:

Streams

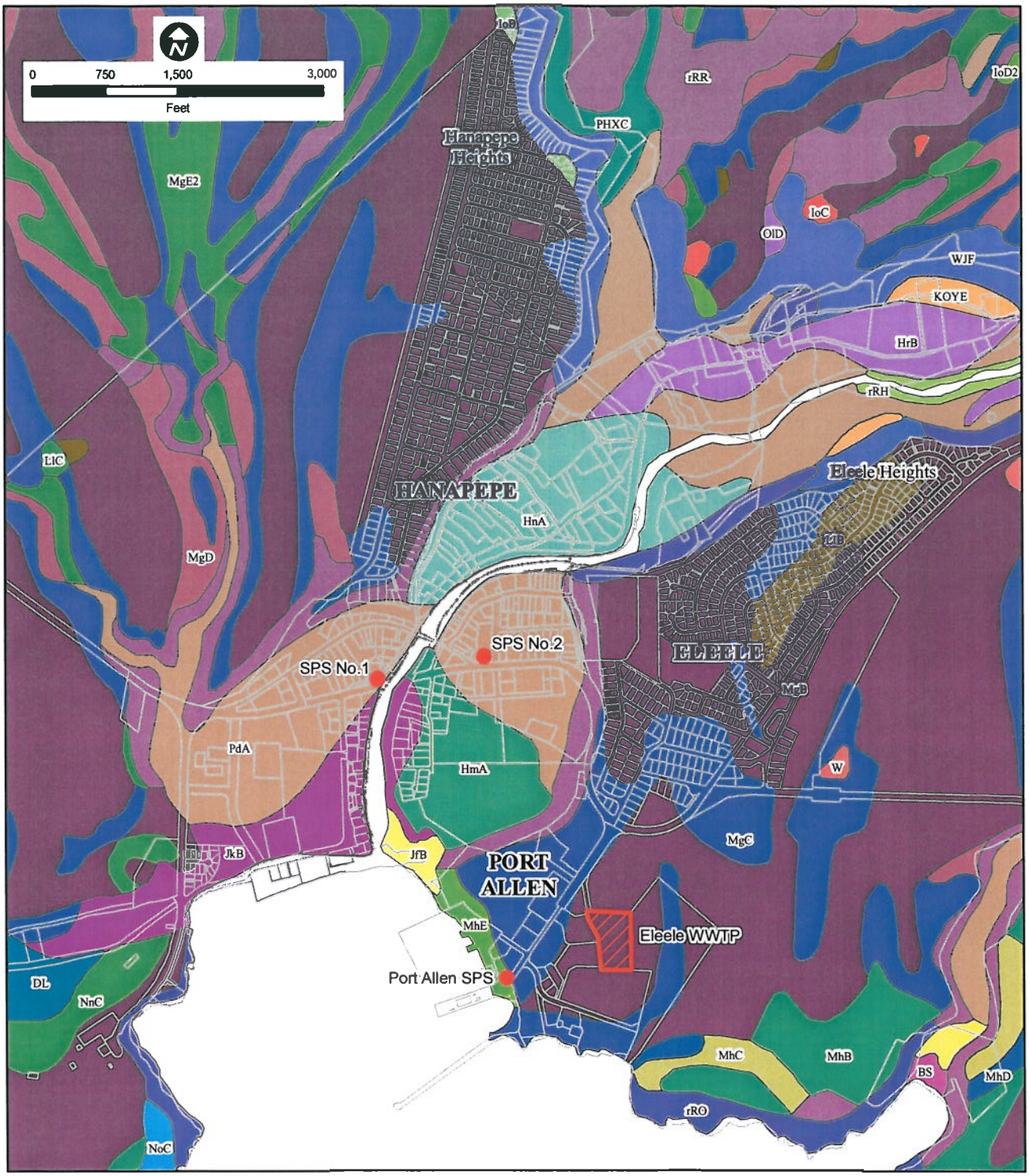
Wetlands

ELEELE FACILITY PLAN

Topography & Wetlands

COUNTY OF KAUAI
Department of Public Works
Division of Wastewater Management

FIGURE 11



SOURCE; Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, U.S. Dept. of Agriculture, Soil Conservation Service, August 1972.

LEGEND:

JkB Jaucas loamy fine sand, dark variant, 0 to 8 percent slopes
MhE Makaweli stony silty clay loam, 20 to 35 percent slopes
MgB Makaweli silty clay loam, 0 to 6 percent slopes
MgC Makaweli silty clay loam, 6 to 12 percent slopes
PdA Pakala clay loam, 0 to 2 percent slopes

ELEELE FACILITY PLAN **USDA SCS Soils Map**

COUNTY OF KAUAI
Department of Public Works
Division of Wastewater Management

FIGURE 12

5. Hydrology

   Eleele WWTP is about 2,200 feet east of the mouth of Hanapepe River and about 1,250 feet from the shoreline. Port Allen SPS is about 1,250 feet southeast of the mouth of Hanapepe River and about 100 feet from the shoreline. SPS No.1 is about 2,000 feet north of the mouth of Hanapepe River and the shoreline. SPS No.2 is about 2,400 feet north of the mouth of Hanapepe River and the shoreline. Surface water and groundwater movement is generally toward the ocean.

6. Geology

   According to "The Geology and Groundwater Resources of the Island of Kauai, Hawaii," the island is fundamentally a single broad volcanic dome built by a basaltic shield volcano resembling the present active volcanoes of Kilauea and Mauna Loa on the Island of Hawaii (reference 4). The lavas deposited in the area were described as being from early volcanic activities of the Waimea Canyon volcanic series. After the major volcanic shield was built, there was a long period of inactivity. Subsequently, volcanism resumed and lavas from that period of activity were described as the Koloa Volcanic series. The near surface rock in the vicinity of the study area is from the Koloa Volcanic series.

7. Water Quality

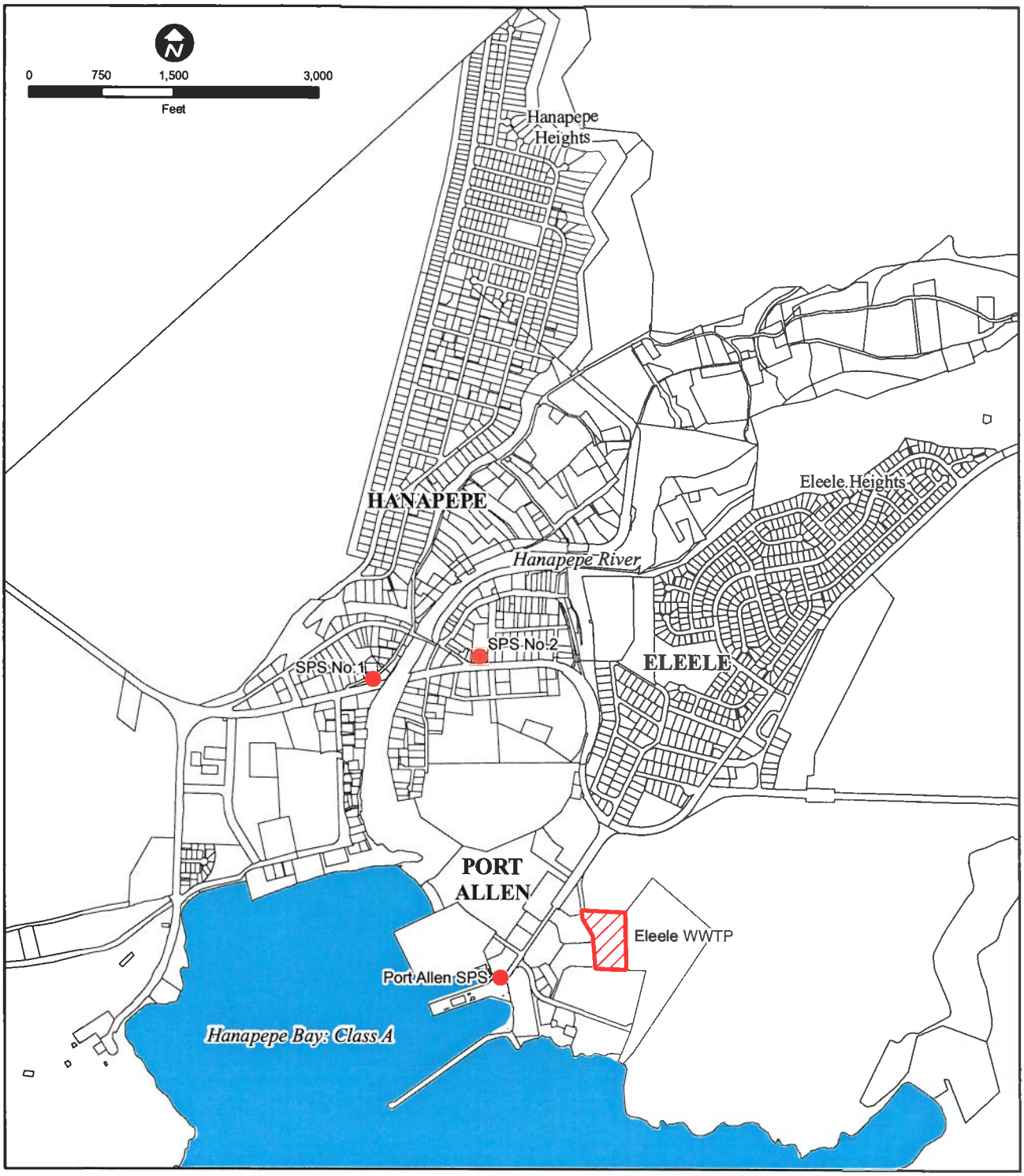
   According to the DOH report, "Hawaii's Water Quality-Limited Waters: The 1997 Assessment," Hanapepe Bay and coastal waters including the Hanapepe River and watershed are identified as Category I – Watersheds In Need of Restoration (reference 3).

   "The Water Quality Standards Map" published by the State of Hawaii Department of Health, Office of Environmental Planning defines the Hanapepe Bay as Class A marine water (reference 5). See Figure 13 for more details.

8. Climate

   The climate of Eleele is generally warm and subtropical with mild seasonal changes throughout the year. The variations in temperature encountered in the area range between 69.4 and 77.2° F on the average for the coolest and warmest month, respectively.

   The Eleele area is characteristic of the leeward coastal region and is relatively dry in comparison to the windward side of the island. The average rainfall in the Eleele area is approximately 30 inches per year per data collected by the National Climatic Data Center between the years 1971 and 2000 (reference 6).

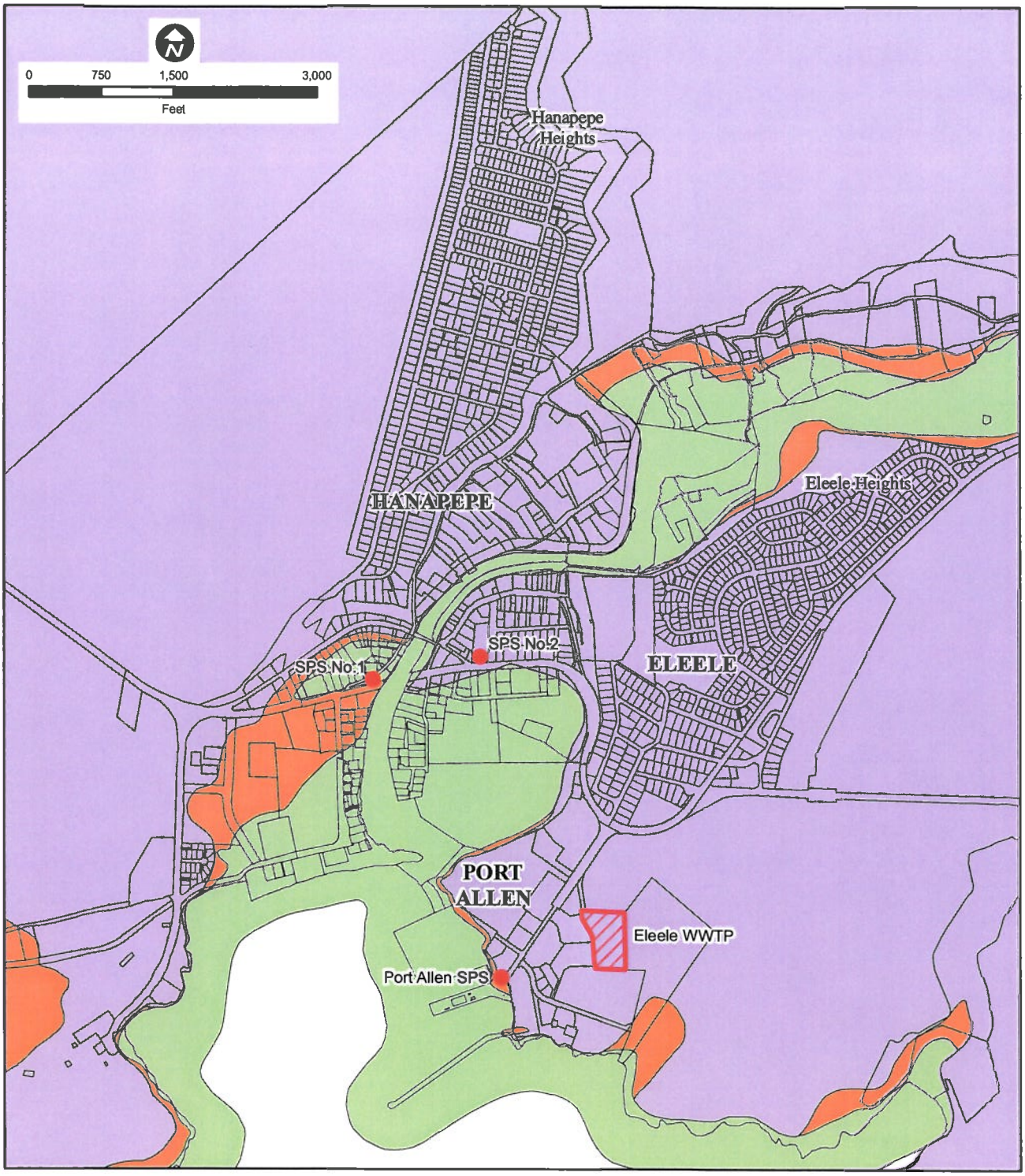

0
750
1,500
3,000
Feet
Hanapepe Heights
HANAPEPE
Hanapepe River
Eleele Heights
SPS No.2
SPS No.1
ELEELE
PORT ALLEN
Eleele WWTP
Port Allen SPS
Hanapepe Bay: Class A

LEGEND:

9. Flood and Tsunami

The project areas are located near by the Hanapepe River. The Flood Insurance Rate Map (FIRM), issued by the Federal Emergency Management Agency (FEMA), indicates that the Eleele WWTP and SPS No.2 are located in Zone X, which is determined to be outside of the 100-year flood plain. SPS No.1 is located in zone A, which is in the 100-year flood zone. Port Allen SPS is located in zone X500, which is in the 500-year flood zone. Figure 14 shows the flood zones for the Eleele area.

Recent Tsunami Evacuation Maps, as published by the Civil Defense Agency, indicate that the existing Eleele WWTP, SPS No.1, and SPS No.2 are not currently in a Tsunami Evacuation Zone. Port Allen SPS is in a Tsunami Evacuation Zone, as shown in Figure 15. In the event of a tsunami warning, people in all areas within the Tsunami Evacuation Zone must be evacuated and follow additional instructions issued by the Civil Defense Agency.



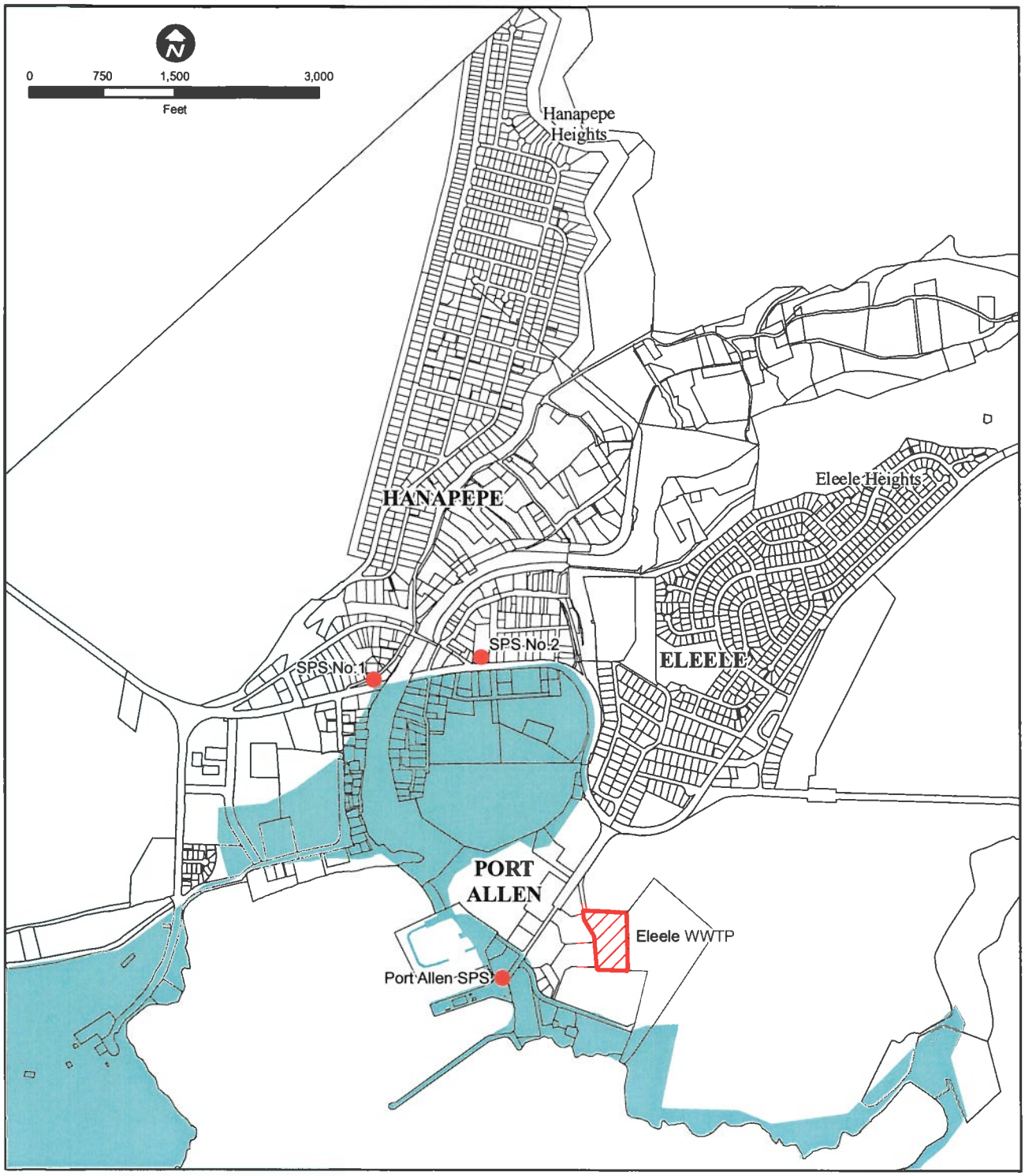
LEGEND;

- A: 1% Annual Chance / 100 Year
- X500: 0.2% Annual Chance / 500 Year
- X: Outside the 1%
- D: Undetermined But Possible Flood

ELEELE FACILITY PLAN **Flood Insurance Rate Map**

COUNTY OF KAUAI
Department of Public Works
Division of Wastewater Management

FIGURE 14



LEGEND:

Tsunami Evacuation Area

D. SOCIO-ECONOMIC FEATURES

The Eleele area is considered to be rural, which is typical of the west side of the island of Kauai. There are lower population densities, no high buildings, and less urban growth as compared to larger cities like Lihue. The Port Allen area is a center for industrial and some commercial activities.

In 2000, the United States Department of Commerce, Census Bureau conducted a census for all 50 states. According to this census, the total population of Eleele and Hanapepe is 4,193, and an average household size is 3.15 (reference 7). According to the report "*Kauai Long-Range Land Transportation Plan – Existing Land Use and Future Land Use*", estimated Single Family Unit counts in the areas of Eleele and Hanapepe will increase approximately 50 percent between year 1994 and year 2020. Estimated Multi Family Unit counts will also increase from 40 units in 1994 to 270 units in 2020 (reference 8). The amount of future wastewater flow to the Eleele WWTP facility is anticipated to increase correspondingly with the population growth.

E. SURFACE WATER QUALITY

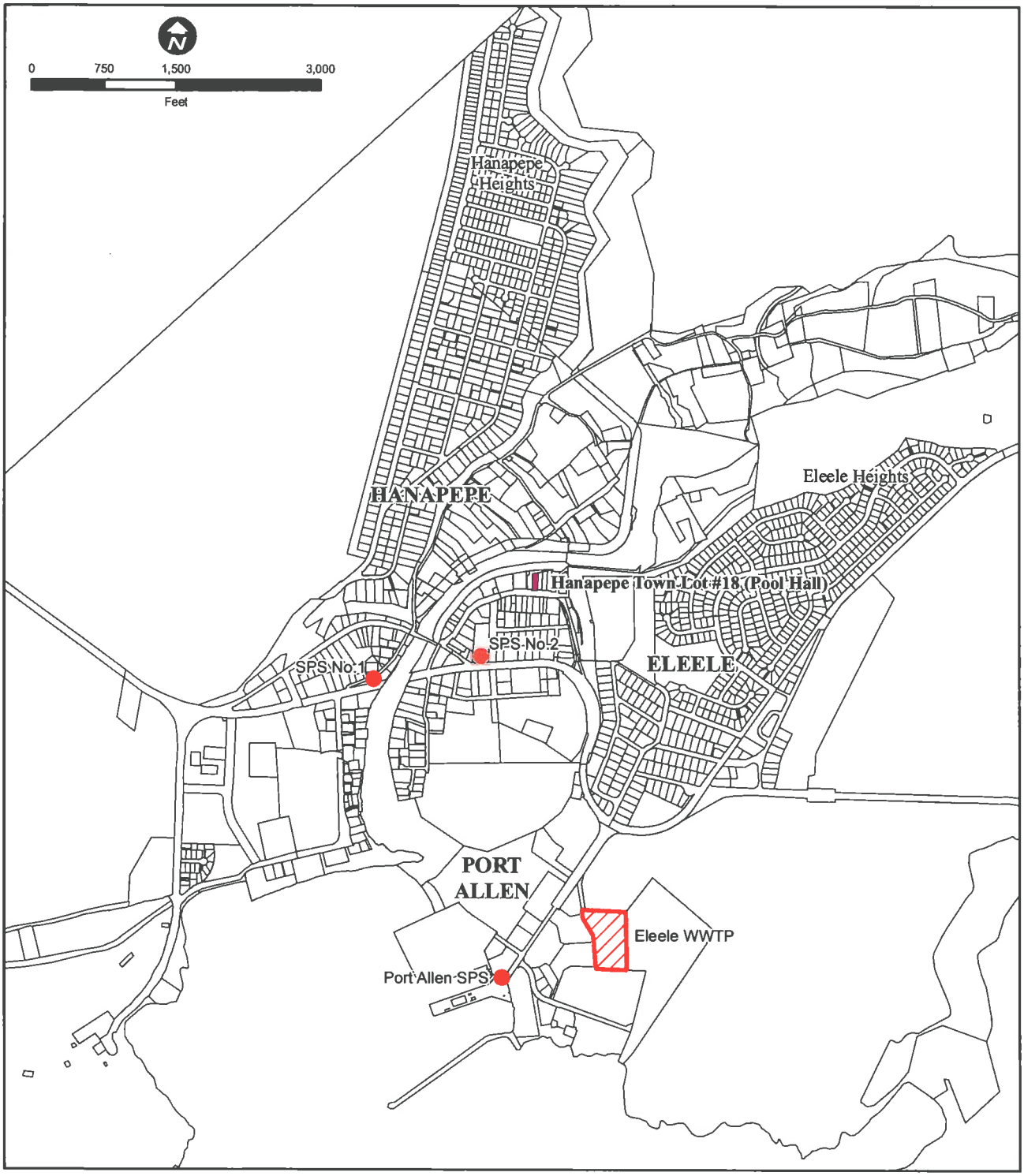
The portion of the Hanapepe River in the project area is identified as "Impaired Water Quality" in the Department of Health report, "*Hawaii's Water Quality-Limited Waters: The 1997 Assessment*" (reference 9). In addition, the Hanapepe River and the associated watershed is defined as Category I – Watersheds In Need of Restoration in the DOH's 1998 report of "*The Hawaii Unified Watershed Assessment*" (reference 10).

F. ARCHAEOLOGICAL AND HISTORICAL CONSIDERATIONS

The National and State Register of Historic Places (NRHP) identifies one historical area in the vicinity of the project area, known as "Hanapepe Town Lot No.18 (a.k.a. Pool Hall)." See Figure 16 for location. According to the NRHP, the place is considered historic architecture/engineering significant in the period of 1925–1949; however, it is currently vacant and not in use (reference 11).

G. FLORA

The natural plants in the vicinity of the project include Koa Haole, Lantana, Java Plum, Cactus, Swollen Fingergrass, Bermudagrass, and Guinea Grass. Surrounding residential and commercial areas are planted with fruit trees, vegetable gardens, common landscaping trees, bushes and ornamental plants. The project area is highly disturbed, and there are no endangered or critical plants identified in the area.



LEGEND:

Hanapepe Town Lot #18 (Pool Hall)

ELEELE FACILITY PLAN **Archaeological & Historical Places**

COUNTY OF KAUAI
Department of Public Works
Division of Wastewater Management

FIGURE 16

H. FAUNA

Mammals in the vicinity of the project include feral cat, roof rat, cattle, dog, pig, and the Hawaiian hoary bat. Birds in the vicinity of the project include cardinal, spotted dove, mockingbird, mynah, ricebird, white eye, barred dove, elepaio, pueo, and golden plover. Elepaio and pueo are native Hawaiian birds and the golden plover is an indigenous Hawaiian bird (reference 12).

The U.S. Department of the Interior, Fish and Wildlife Service has listed the information regarding threatened and endangered species and critical habitat in Hanapepe and Eleele as follows:

Federally endangered species –

Hawaiian hoary bat (*Lasirus cinereus semotus*)

Four species of endangered Hawaiian waterbirds –

Hawaiian moorhen (*Gallinula chloropus sandvicensis*)
Hawaiian coot (*Fulica alai*)
Hawaiian duck (*Anas wyvilliana*)
Hawaiian stilt (*Himantopus mexicanus knudseni*).

The Fish and Wildlife Service agency also confirmed that there is no designated critical habitat in the vicinity of the two towns. Therefore, the project areas are highly disturbed and it is unlikely that the fauna species above inhabit the areas.

III. PROBABLE IMPACTS AND MITIGATIVE MEASURES

A. SHORT TERM IMPACTS

Short term impacts are associated with the construction activities at each of the project sites. The impacts are not anticipated to be significant; and will be controlled and minimized by Federal, State, and County of Kauai laws, regulations, best management practices, permit requirements and monitoring of construction by County inspectors.

1. Air Quality
   (Clean Air Act, Pub.L. 84-159, as amended)

   There will be a temporary increase in dust, and vehicular and equipment exhaust emissions in the vicinity of the project areas during construction. Dust resulting from construction is anticipated to be minimal. The Contractor will be required to comply with Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control." and Section 11-60.1-33, "Fugitive Dust." Dust control will be maintained by sprinkling with water when needed. Exhaust emission should not have any significant effect on the area because prevailing winds should disperse any exhaust gas concentration.

2. Erosion

   The Contractor will be required to implement erosion and sediment control measures during the construction as appropriate.

3. Surface Water Quality

   No impacts on surface water quality resulting from the construction of this project are anticipated. A National Pollutant Discharge Elimination System (NPDES) permit is not required because the contiguous area to be disturbed by construction activities is less than one acre. In addition, no discharge to navigable waters is anticipated. However, if the Contractor chooses methods of construction which require discharge to navigable waters, e.g. discharge of construction dewatering effluent, he will be responsible for obtaining an NPDES permit from the State Department of Health, Clean Water Branch and a Department of Army Permit from the Army Corps of Engineers. Through the permitting process, the Contractor will propose construction Best Management Practices (BMPs) for approval.

4. Traffic

   Temporary impacts to traffic may occur during the construction of the improvements. A traffic control plan will be required at the time of construction to minimize traffic impacts in the work areas.

5. Noise

There will be an increase in noise from the construction activities. However, the work will be limited to normal working hours. The Contractor will be required to comply with the requirements of the Department of Health Hawaii Administrative Rules, Chapter 11-46, "Community Noise Control."

B. LONG TERM IMPACTS

Long term impacts are generally those impacts related to the operation of the proposed new improvements. Appropriate design, and competent, efficient, and effective operations and maintenance will mitigate any potential negative long term impacts associated with the implementation of the project.

1. Water Quality

a. Surface Water

No negative long term impacts on surface water quality are anticipated. As discussed, this project addresses existing deficiencies in the conveyance and treatment capabilities of the Eleele Sewerage System, and will serve to preserve the water quality of surrounding water bodies.

b. Ground Water
(Safe Drinking Water Act, Pub.L. 93-523, as amended)

The Eleele WWTP is an R-2 facility and uses three underground injection wells for disposal of plant effluent. All injection wells are makai of the Underground Injection Control (UIC) line and are not above drinking water aquifers. Therefore, the project does not adversely impact drinking water aquifers.

c. Effluent Disposal

There is a KIUC power plant adjacent to the Eleele WWTP that extracts groundwater for use as cooling water. The concentration of nitrates in the groundwater was observed to be relatively high, probably due to the extensive agricultural activities in the area. As the service area increases, the amount of effluent generated by the wastewater treatment plant will correspondingly increase. As a result, there may be an increase in nitrate entering the groundwater due to the increase in the volume of effluent disposed. If it is later determined that this will adversely impact water quality, the County will take steps to mitigate the amount of nitrates in the effluent.

2. Agricultural Land
(Farmland Protection Policy Act, Pub.L. 97-98)

The proposed project recommends acquiring land adjacent to the existing facility. The Eleele WWTP is surrounded by land designated "Agriculture" in the Kauai CZO. Since public utility facilities are not generally permitted in the Agriculture districts, a Class IV Zoning Permit will be a requirement of the Use Permit. The standard for the issuance of a Use Permit is set forth in Section 8-20.5 of County of Kauai, CZO.

The CZO requires that the proposed project is not detrimental to health, safety, peace, morals, comfort and general welfare to public; does not cause any substantial harmful environmental consequences; and will not be inconsistent with the intent of the General Plan. The proposed project is an expansion to the existing wastewater treatment facility and is consistent with the current use of the area; therefore, the proposed improvement project will not adversely impact its surroundings.

3. Coastal Zone Management
(Coastal Zone Management Act, Pub.L. 92-583, as amended)

The proposed project will not have any improvements within the coastal zone Special Management Area.

4. Floodplain Management
(Floodplain Management, Executive Order 11988, as amended by Executive Order 12148)

The Eleele WWTP and SPS No.2 are outside of the 500-year flood plain. Port Allen SPS is in the 500-year flood plain. SPS No.1 is in a special flood hazard area inundated by the 100-year flood with a base flood elevation determined to be 10 feet Mean Sea Level (MSL). The entrance tube cover for SPS No.1 is 12 feet MSL, which is 2 feet above the base flood elevation, and shall not result in flooding of the pump station.

Due to the nature of wastewater collection, treatment and disposal systems, pump stations and treatment plants are typically in areas lower than the associated service areas. The Eleele Sewerage System service area is generally in low-lying areas near the coast. The risk of a 100-year flood at SPS No.1 and the 500-year flood at Port Allen SPS is considered reasonable since there is no practicable alternative. Developed areas within the floodplain must be served. The specific improvements to SPS No.1 and Port Allen SPS proposed in this project, however, will not alter existing floodplain conditions.

5. Flora and Fauna
   (Endangered Species Act, Pub.L. 93-205, as amended and Fish and Wildlife Coordination Act, Pub.L. 85-624, as amended)

   There are no indications of rare or endangered flora in the project area. Although the U.S. Department of Interior, Fish and Wildlife Service has listed endangered birds and mammals in Hanapepe and Eleele areas, the specific project areas are already highly disturbed and developed. Therefore, no negative impacts to existing plants and mammals are anticipated.

6. Air Quality
   (Clean Air Act, Pub.L. 84-159, as amended)

   No long term negative impacts on air quality resulting from the proposed project are anticipated.

7. Visual Impacts

   The visual impacts of the proposed project area are not expected to be significant. The work will be done in the existing facilities or will be underground.

8. Archeological and Historical Sites
   (Archaeological and Historic Preservation Act of 1974, Pub.L. 86-523, as amended and National Historic Preservation Act, Pub.L. 89-665, as amended)

   There is one historically significant structure in the vicinity of the proposed project sites, which will not be affected by this project. In addition, since the projects will be in areas that have been previously disturbed, no adverse effect on significant historic areas or human burials is anticipated. Construction and the required mitigation plans will be coordinated with the State Historic Preservation Division, the Kauai Burial Council and the Office of Hawaiian Affairs in accordance with the Hawaii Revised Statutes and the Hawaii Administrative Rules to minimize any long term negative impacts on historic sites.

9. Public Health and Safety

   Public health and safety will be a priority of this project. Monitoring will be conducted to ensure protection of public health and safety. State DOH regulations will be followed; therefore, no public health or safety problems associated with the system improvements are anticipated.

IV. ALTERNATIVES TO THE PROPOSED PROJECT

A. NO ACTION ALTERNATIVE

The No Action Alternative is unacceptable because the proposed improvements must be made to the existing Eleele sewerage system for continued compliance with the State DOH regulations, to protect the public and the environment.

B. ALTERNATIVE SITES

The proposed improvements are associated with existing facilities, namely Eleele WWTP, SPS No.1, SPS No.2, and Port Allen SPS. The expansion of the Eleele WWTP needs to be adjacent to the existing plant to allow integration of the existing and new treatment processes. The new sewage pump stations need to be constructed adjacent to the existing pump stations because they need to be fed by gravity from the sewer system. This limits the site options for these facilities to lands that are directly adjacent to the existing facilities. Therefore, alternative site analysis is not applicable.

C. ALTERNATIVE SEWERAGE IMPROVEMENTS

One alternative sewerage improvement is to construct an additional wastewater treatment plant. However, there are several issues that make this alternative impractical over expansion of the existing treatment plant. First, it is difficult to find a contiguous tract of available public land large enough for an additional treatment plant. Second, constructing a new wastewater treatment plant and replacing the existing wastewater transport system to a new treatment plant are much more expensive than expanding the existing Eleele WWTP. Third, an additional wastewater treatment plant would essentially double the amount of maintenance required since economics of scale and centralization would not be realized. Fourth, permits and approvals for building a new treatment plant are more complex and time consuming processes than expanding the existing wastewater treatment plant. Therefore, constructing a new wastewater treatment plant alternative was not considered further.

D. MEMBRANE BIOREACTOR PLANT ALTERNATIVE

Another alternative sewerage improvement is to convert the existing treatment facility at the WWTP to a membrane bioreactor (MBR) plant. An MBR system is not recommended for the Eleele WWTP due to the high construction and maintenance costs. The construction cost would be nearly double compared to the expansion option, and specialized training is required for sludge disposal and handling.

V. PERMITS AND APPROVALS REQUIRED

Several permits, approvals and clearances may be required for the recommended improvements from the County of Kauai, the State of Hawaii, and the Federal Agencies.

A. APPROVALS

- Kauai Burial Council
  Burial Treatment Plan (if burials are found)
- State Department of Health, EHA, EMD, Wastewater Branch
  Engineering Report
- State Department of Land and Natural Resources, Historic Preservation Division
  Monitoring Plan
  Burial Treatment Plan (if burials are found)
- State Department of Health, DCAB
  Plans and Specifications conformance with American Disabilities Act

B. PERMITS

- National Pollutant Discharge Elimination System Permit, State of Hawaii, Department of Health (if required, based on Contractor's construction methods)
- NPDES Stormwater, Construction Dewatering, Hydrotesting Permits
- Underground Injection Control (UIC) Permit
- Building Permits
- Grading Permits
- Pressure Vessel and Boiler Permit
- Fuel Storage Tank permit
- Wastewater Management Permit
- Conditional Use Permit
- Noncovered Stationary Source for Permit (modification/update)
- Water Quality Certification
- Community Noise Permit
- Notification of Renovation and Demolition Permit
- Well Construction Permit

The permit application must be completed and approved prior to any wastewater improvements.

VI. AGENCIES AND ORGANIZATIONS CONSULTED

The following agencies were consulted directly or indirectly during the preparation of this document.

- State of Hawaii, Department of Hawaiian Home Lands
- County of Kauai, Planning Department
- County of Kauai, Department of Public Works

VII. FINDINGS AND DETERMINATION

A. FINDINGS

Based upon the guidelines and provisions of Significance Criteria listed in §11-200-12 Environmental Impact Statement Rules and Chapter 343, HRS, the findings of this environmental assessment are:

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

   Loss or destruction of a natural or cultural resource is not anticipated. As described in this assessment, careful planning and coordination will be done with review and approvals by the State Historic Preservation Division, the Kauai Island Burial Council, and other concerned parties. Any finding of archaeologically significant resources during construction will be handled in compliance with the approved plans. In addition, the proposed project protects the natural environment by improving the wastewater systems and wastewater treatment facilities for disposal and reuse. Wastewater reuse also helps to conserve water resources.

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

   The proposed project is improving wastewater treatment to ensure water quality for reuse and disposal; therefore, it is enhancing the beneficial use of the environment.

3. Conflict with the State's long term environmental policies or goals and guidelines as expressed in Chapter 344, Hawaii Revised Statutes, and revisions thereof and amendments thereto, court decisions or executive orders:

   The proposed project is in accordance with the guidelines set forth in the State Environmental Policy Chapter 344, Hawaii Revised Statutes (HRS).

4. Substantially affects the economic or social welfare of the community or State:

   The proposed project provides the wastewater infrastructure necessary to keep up with the needs of the community. The improved operating conditions and better effluent quality will enhance the welfare of the community.

5. Substantially affects public health:

   The proposed project will improve public health protection by providing sanitary wastewater infrastructure that complies with Federal, State and County requirements.

6. Involves a substantial secondary impact, such as population changes or effects on public facilities:

   The population in Hanapepe and Eleele is projected to increase, and many residences that are using individual treatment systems will eventually connect to the sewer systems. In order to accommodate the growing incoming wastewater flow, the proposed sewer system improvements are needed to protect the public health. Although the public facilities, which are the County roads and the State highways, may be affected where sewerlines are replaced, the impacts will be temporary and minimal. Therefore, substantial secondary impacts are not anticipated.

7. Involves a substantial degradation of environmental quality:

   The proposed project will not involve any substantial degradation of environmental quality. As described in this assessment, the impacts on the environment are generally beneficial, and negative impacts are minimal.

8. Individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions:

   As described in this assessment, the proposed project does not have any significant impacts or effects upon the environment or involve any commitment for larger actions.

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

   There are no identified endangered or critical species of flora and fauna in the vicinity of the project sites that would be disturbed.

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

    The proposed project will have positive impacts on water quality by improving wastewater transmission and effluent quality for reuse and disposal. This project will not detrimentally affect air or water quality, or ambient noise levels.

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, freshwater, or coastal waters:

    As discussed in the previous section, the proposed project does not detrimentally affect any environmentally sensitive area. The majority of the sewer service area is outside of the 100-year floodplain and tsunami evacuation zone. The proposed project, which is improvement and expansion of the existing wastewater systems and facilities, is necessary in order to provide sanitary sewer service in the area to

protect public health. The proposed facilities that are within the flood and tsunami hazard intensity area will be constructed to be flood resistant to minimize damage as a result of floods or inundation by tsunami.

12. Substantially affects scenic vistas and view planes identified in county or state plans or studies:

    The proposed project does not affect any scenic vistas or views.

13. Requires substantial energy consumption:

    The energy consumption at the project sites will be slightly increased by improvements due to an increase in conveyance and treatment capacity. However, this is a necessary public utility and will be designed to be as energy efficient as possible.

B. FINDINGS BASED ON DOH STATE ENVIRONMENTAL REVIEW PROCESS (SERP) CRITERIA

The proposed action involves the use of State Revolving Funds and is subject to the DOH SERP criteria, which addresses that the analysis of alternatives and impacts shall include the following items.

1. The primary and secondary (direct and indirect) impacts for all feasible alternatives (to include the "no action" alternative).

   The proposed action and impacts are discussed in Section I and Section III, and alternatives to the proposed action are discussed in Section IV.

2. The impacts on social parameters such as land use, recreation and open-space opportunities.

   As discussed in Section III, the impacts are not anticipated to be significant.

3. The cumulative impacts such as anticipated community growth (residential, commercial, institutional, and industrial) within the project and study area.

   This is discussed in Section VII, Paragraph A, Item 6 of the DOH 11-200-12 Significant Criteria.

4. The impacts on other anticipated public works projects (if any) and the planned coordination with them.

There are some housing development projects located in Eleele and Hanapepe; however, the impacts on other public works projects are not anticipated.

5. The impacts on any individual sensitive environmental issues that have been identified through the public participation program.

   No individual sensitive environmental issues have been identified during the pre-consultation. The public will have the opportunity to bring any issues in the 30-day public comment period for this Draft EA of the proposed action.

C. DOH CROSS-CUTTING AUTHORITIES

According the DOH Environmental Documents Criteria, any Environmental Assessment Document submitted for an HSRFP (Hawaii State Revolving Fund Program) project shall also address the impacts on other Federal "cross-cutting" authorities to include the following:

1. Archeological and Historic Preservation Act

   There are no historical sites near the project areas, as discussed in Section III, Paragraph B, Item 8.

2. Clean Air Act

   Dust is anticipated during construction, but it will be temporary and contractors must practice mitigative measures followed by the Federal, State, and County regulations related to construction activities. Discussed in Section III, Paragraph B, Item 6.

3. Coastal Zone Management Act

   Discussed in Section III, Paragraph B, Item 3.

4. Endangered Species Act

   Discussed in Section II, Paragraph G and H, and Section III, Paragraph B, Item 5.

5. Farmland Protection Policy Act

   Discussed in Section III, Paragraph B, Item 2.

6. Fish and Wildlife Coordination Act

Discussed in Section III, Paragraph B, Item 5.

7. Floodplain Management

   Discussed in Section III, Paragraph B, Item 4.

8. National Historic Preservation Act

   Discussed in Section III, Paragraph B, Item 8.

9. Safe Drinking Water Act

   Discussed in Section III, Paragraph B, Item 1.

10. Protection of Wetlands

    There are no wetlands near the site of the proposed action, as mentioned in Section II, Paragraph C, Item 3.

D. DETERMINATION

Based upon the above findings and considerations, the proposed project is not anticipated to have significant adverse environment impacts on the historic sites, coastal waters, local ecology, hydrology and atmosphere. Mitigation measures will be implemented as deemed necessary and as required by the government agencies. A Finding of No Significant Impact (FONSI) determination is anticipated. Therefore, an Environmental Impact Statement is not required for the *Eleele Facility Plan*.

VIII. REFERENCES

1. State of Hawaii, Department of Health. Hawaii Administrative Rules – Wastewater Systems, §11-62-23.1(i) January 14, 2004. <http://www.hawaii.gov/health/about/rules/11-62.pdf>

2. County of Kauai, Planning Department. The Comprehensive Zoning Ordinance for the County of Kauai. <http://kauai-realtor.com/czo.htm>

3. County of Kauai, Planning Department. Kauai General Plan 21 February, 2003. <http://www.kauai.gov/Government/Departments/PlanningDepartment/TheKauaiGeneralPlan/tabid/130/Default.aspx>

4. MacDonald, D.A. and Cox, D.C. "The Geology and Groundwater Resources of the Island of Kauai, Hawaii." 1960

5. Hawaii Department of Health, Office of Environmental Planning. "Water Quality Standards Map of Islands of Kauai and Niihau." October, 1987.

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11. National Register of Historical Places – Hawaii, Kauai County. <http://www.nationalregisterofhistoricplaces.com/hi/Kauai/state.html>

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APPENDIX A
AGENCY COMMENTS ON DRAFT ENVIRONMENTAL ASSESSMENT

Department of Water
County of Kaua'i

Water has no substitute.....Conserve it

November 9, 2007

CPR-UID #585

Mr. Andrew Amuro
Fukunaga & Associates, Inc.
1388 Kapiolani Blvd., 2nd Floor
Honolulu, HI 96814

Dear Mr. Amuro:

Subject: Draft Environmental Assessment for Eleele Wastewater Treatment Plant Facility Plan, TMK: 2-1-01:043, Eleele, Kaua'i, Hawai'i

Water service will be limited to the existing water meters to the lot. Any request for additional or larger sized water meters will be dependent on the adequacy of the source, storage, and transmission facilities existing at that time.

Prior to building permit approvals the applicant shall:

1. Prepare and receive Department of Water (DOW) approval of construction drawings of the necessary water system facilities and construct said facilities. These facilities shall include but not be limited to:
   a) The interior plumbing plans with the appropriate backflow prevention assemblies for all meters to the lot.

We request that the applicant complete the backflow prevention installation process as soon as possible, due to possible cross-connection between the wastewater treatment plant and the Department's water system.

If you have any questions or concerns, please contact Mr. Keith Aoki at (808) 245-5418.

Sincerely,

Gregg Fujikawa
Chief of Water Resources and Planning

KA:mll
T-9256 draft ea- eleele waste water expansion w2-1-01-043

4398 Pua Loke St., P.O. Box 1706, Lihue, HI 96766 Phone: 808-245-5400
Engineering and Fiscal Fax: 808-245-5813, Operations Fax: 808-245-5402, Administration Fax: 808-246-8628

1388 KAPIOLANI BLVD. / 2ND FLOOR / HONOLULU, HI 96814 / PH. (808) 944-1821 / FAX (808) 946-9339 / office@fainc.org / www.fainc.org

January 9, 2008

Mr. Gregg Fujikawa, Chief of Water Resources and Planning
County of Kauai
Department of Water
4398 Pua Loke Street
PO Box 1706
Lihue, Kauai, Hawaii 96766

ATTENTION: Mr. Keith Aoki

SUBJECT: Comments on Draft Environmental Assessment – Eleele Facility Plan

Dear Mr. Aoki,

Thank you for your review and comment on the Draft EA. This letter is written on behalf of the County of Kauai, Department of Public Works. Division of Wastewater Management, in response to your comment letter dated November 9, 2007.

The Eleele Facility Plan gives an overview of the improvements planned for the Eleele and Hanapepe sewer system. As these improvements are implemented, the Department of Public Works will ensure that the requirements of the Department of Water are met. These requirements include DOW review of requests for larger water meters if necessary, and protection of the water supply through the use of backflow prevention assemblies. Furthermore, all construction plans and specifications will be sent to the DOW for review in advance of construction.

We hope this response addresses your comments to your satisfaction.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.

Andrew Amuro
Engineer

cc: Edward Tshupp, DWWM