Final Environmental Assessment and Finding of No Significant Impact for

Waimalu Sewer Rehabilitation

Aiea, Hawaii

Prepared For:

Department of Design and Construction
City and County of Honolulu

Prepared by:

Hawaii Pacific Engineers, Inc.

HPE Project No. 2004013
March 11, 2005

Final Environmental Assessment and Finding of No Significant Impact

for

WAIMALU SEWER REHABILITATION

Aiea, Oahu, Hawaii
TMK: 9-8-10, 22, 23, 24, 26, 27, 28 and 65

March 11, 2005

THIS ENVIRONMENTAL DOCUMENT HAS BEEN PREPARED PURSUANT TO CHAPTER 343, HAWAII REVISED STATUTES

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ABBREVIATIONS AND ACRONYMS

BMP	Best Management Practices
C&C	City and County
CDP	Census Designated Places
CIP	Capital Improvement Program
CIPP	Cured-in-place pipe
CITY	City and County of Honolulu
DLNR	State of Hawaii Department of Land and Natural Resources
DOH	State of Hawaii Department of Health
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FRP	Fiber-reinforced polyester
HAR	Hawaii Administrative Rules
HDD	Horizontal directional drilling
HDOT	State of Hawaii Department of Transportation, Highways Division
HRS	Hawaii Revised Statutes
I/I	Infiltration/Inflow
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and maintenance
PUC DP	Primary Urban Center Development Plan
PVC	Polyvinyl chloride
SCS	Soil Conservation Service
SHPD	State of Hawaii Historic Preservation Division
SMA	Special Management Area
SOBA	Southern Oahu Basal Aquifer
SSA	Sole Source Aquifer
UIC	Underground Injection Control
UST	Underground storage tank
VCP	Vitrified clay pipe

SUMMARY

EXECUTIVE SUMMARY

The City and County of Honolulu proposes to rehabilitate sewers in the Waimalu Sewerage Basin, which encompasses approximately 117 acres in Aiea, Oahu. The project is required to correct significant structural and capacity problems that result in sewage spills and excessive maintenance effort. The project area is comprised primarily of single family residences but also includes the Waimalu Shopping Center and an apartment zone.

The sewers generally located between Moanalua Road and Kamehameha Highway are in very poor condition due to ground settlement from consolidation of soft alluvial soils. Differential ground settlement has resulted in cracks, broken/separated joints and other defects in the sewer pipes that causes entry of groundwater/rainwater and overloading of the sewer system. Severe ground settlement has also caused undesirable "sags" (low points) in the sewer lines. Costly frequent maintenance is required to remove grease and other debris that accumulate at the sag points to avoid sewage spills and backups from clogged lines. The existing inverted siphon (depressed sewer) line that conveys sewage under the Waimalu Stream channel also experiences significant clogging and capacity problems.

Installation of new replacement sewer lines and other sewer repair work are proposed to resolve clogging/sewage spill problems, capacity limitations, and structural deficiencies. The major sewer reconstruction work, which is proposed to include approximately 9,000 linear feet of new 8-inch to 16-inch diameter sewers, is anticipated to be constructed using conventional open-cut trenching. The project will include a new trunk sewer crossing Kamehameha Highway at Hekaha Street to replace the Waimalu Stream inverted siphon. The construction of new lines will be supplemented with spot repairs utilizing cured-in-place pipe (CIPP) "trenchless" sewer lining technology and conventional pipe replacement methods.

The construction work will be generally confined to the right-of-way of existing roads and easements in private property. There will be short-term construction impacts such as traffic congestion and restricted access near construction areas, and noise and dust generated from construction equipment and vehicles. Operation of sewage bypass and trench dewatering pumps at night will likely be required. Discharge of trench dewatering effluent to the storm drainage system is anticipated.

The construction cost for this project is estimated to be approximately $15.5 million. Construction of the project is expected to begin in late 2005 at the earliest. The construction work is expected to require a total of approximately 18 to 24 months.

PROJECT INFORMATION SUMMARY

1.	Proposing and Approving Agency:	City and County of Honolulu Department of Design and Construction 650 South King Street Honolulu, Hawaii 96813
2.	Prepared By:	Hawaii Pacific Engineers, Inc. 1132 Bishop Street, Suite 1003 Honolulu, Hawaii 96813-2830 Roy K. Abe, Project Manager, Ph. 808-524-3771
3.	Project Name:	Waimalu Sewer Rehabilitation
4.	Project Location:	Waimalu Aiea, Hawaii 96701
5.	Tax Map Key:	9-8-10, 22, 23, 24, 26, 27, 28 and 65
6.	Land Area:	117 acres (approximate total Waimalu Sewerage Basin project area)
7.	Property Owner:	City and County of Honolulu (most streets) State of Hawaii (Kamehameha Highway and land under H-1 Freeway) Various private property owners (sewer easements)
8.	State Land Use:	Urban
9.	County Zoning:	Residential (R-5), Apartment (A-1), Community Business (B-1)
10.	Special Designations:	None (outside of the SMA and shoreline setback; not listed as a historic site on state or federal register)
11.	Determination:	FONSI (Finding of No Significant Impact)

CHAPTER 1
PROJECT DESCRIPTION

A. INTRODUCTION AND GENERAL BACKGROUND

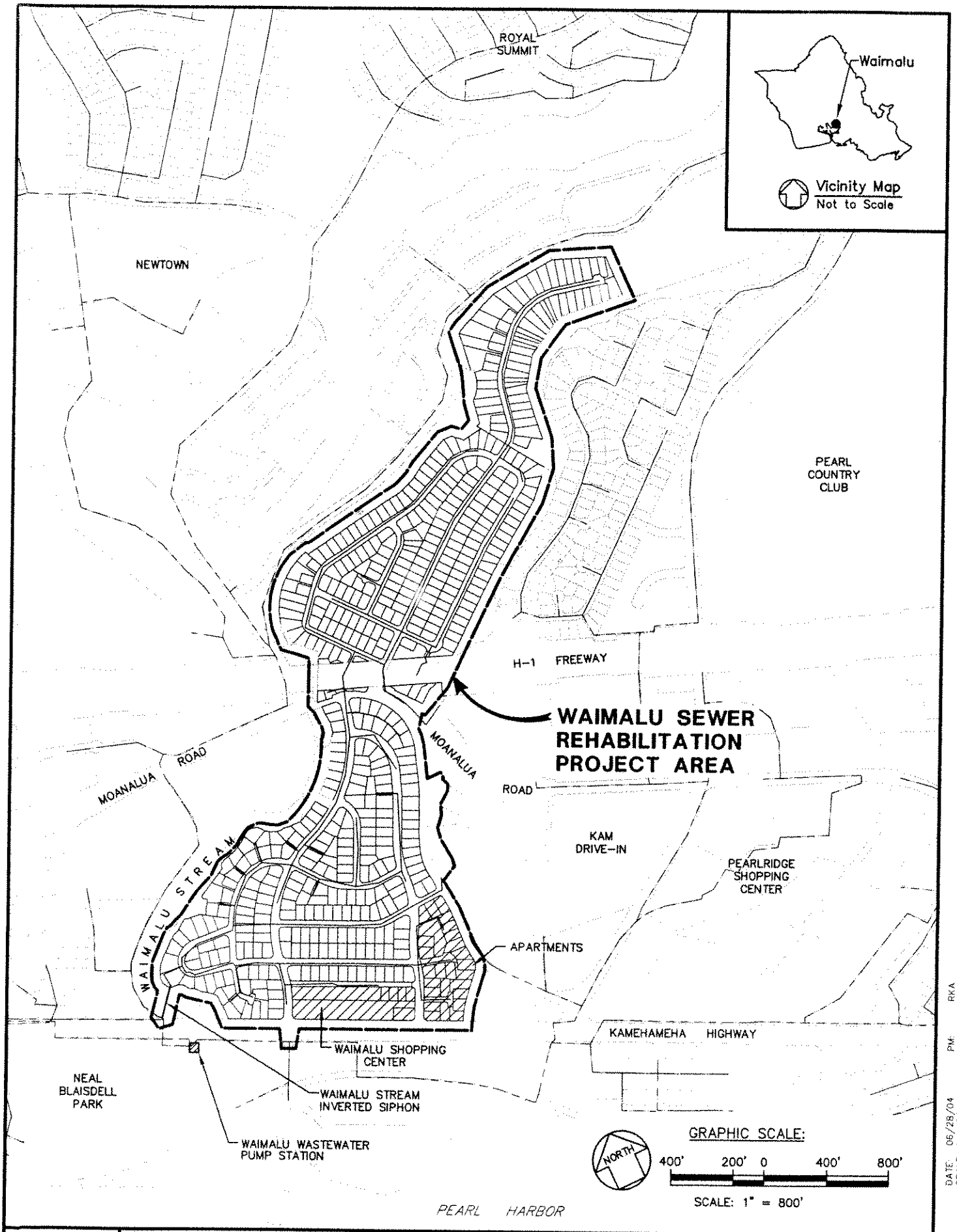
The City and County of Honolulu has embarked on a long-term program to upgrade and improve its aging sewer system. The Waimalu Sewerage Basin, which encompasses approximately 117 acres in Aiea, Oahu, has been identified by the City as one of the high priority sewer basins requiring rehabilitation of existing sewer lines.

This Final Environmental Assessment and Finding of No Significant Impact (FEA/FONSI) describes the proposed Waimalu Sewer Rehabilitation project and anticipated environmental impacts. The FEA/FONSI has been prepared pursuant to the State of Hawaii environmental review process as required and defined by Chapter 343, Hawaii Revised Statutes (HRS) and Title 11, Chapter 200, Hawaii Administrative Rules (HAR). The project is subject to the State environmental review process due to the use of City and County of Honolulu funds.

The boundaries of Waimalu Sewer Rehabilitation project area essentially encompass the wastewater service area of the Waimalu Sewerage Basin (see Figure 1-1). The project area is bounded to the south by Kamehameha Highway and extends approximately one-half mile mauka of the H-1 freeway and Moanalua Road. Waimalu Stream is located along the west boundary of the project area.

The wastewater collection facilities in the Waimalu Sewerage Basin consist of a network of sewer lines and manholes owned and operated by the City and County of Honolulu. The sewer system serves primarily single-family residential parcels. The Waimalu Shopping Center and a medium-density apartment zone are located at the lower end of the basin. The wastewater generated in the project area is conveyed across Waimalu Stream to the Waimalu Wastewater Pump Station. The majority of the sewers in the basin were constructed in the mid to late 1950's.

The sewers in the lower portion of the basin (south of Moanalua Road) are in poor condition due to ground settlement from consolidation of soft alluvial soils in the area. Differential ground settlement has resulted in cracks, broken/separated joints and other defects in the sewer pipes that cause groundwater and rainwater to enter the lines. During the heavy storms in December 2003 and January 2004, sewage spills and backups occurred in the lower Waimalu basin because the high flows caused by excessive infiltration/inflow of rainwater into the sewer lines exceeded the capacity of the system. Flooding of homes with sewage and contamination of stormwater runoff and the Waimalu Stream by sewage overflows result in significant adverse public health and environmental impacts.



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Hawaii Pacific Engineers	WAIMALU SEWER REHABILITATION AIEA, OAHU, HAWAII	PROJECT LOCATION MAP	FIGURE 1-1

Severe ground settlement in Waimalu has also caused undesirable "sags" in the existing sewer lines. This results in the need for constant maintenance to remove grease, fecal material, grit and other debris that accumulate at or near the low points in the line. Frequent sewer cleaning is required to avoid sewage spills and backups due to clogged lines. The high degree of maintenance performed on the Waimalu sewer lines is labor intensive and costly.

Three existing depressed sewer pipes, referred to as an inverted siphon, are used to convey sewage under the Waimalu Stream channel. Similar to the sags in the sewer lines, the inverted siphon is subject to clogging problems and requires frequent maintenance to remove accumulated grease and solids that would otherwise clog the lines and reduce flow capacity.

B. DESCRIPTION OF THE PROPOSED PROJECT

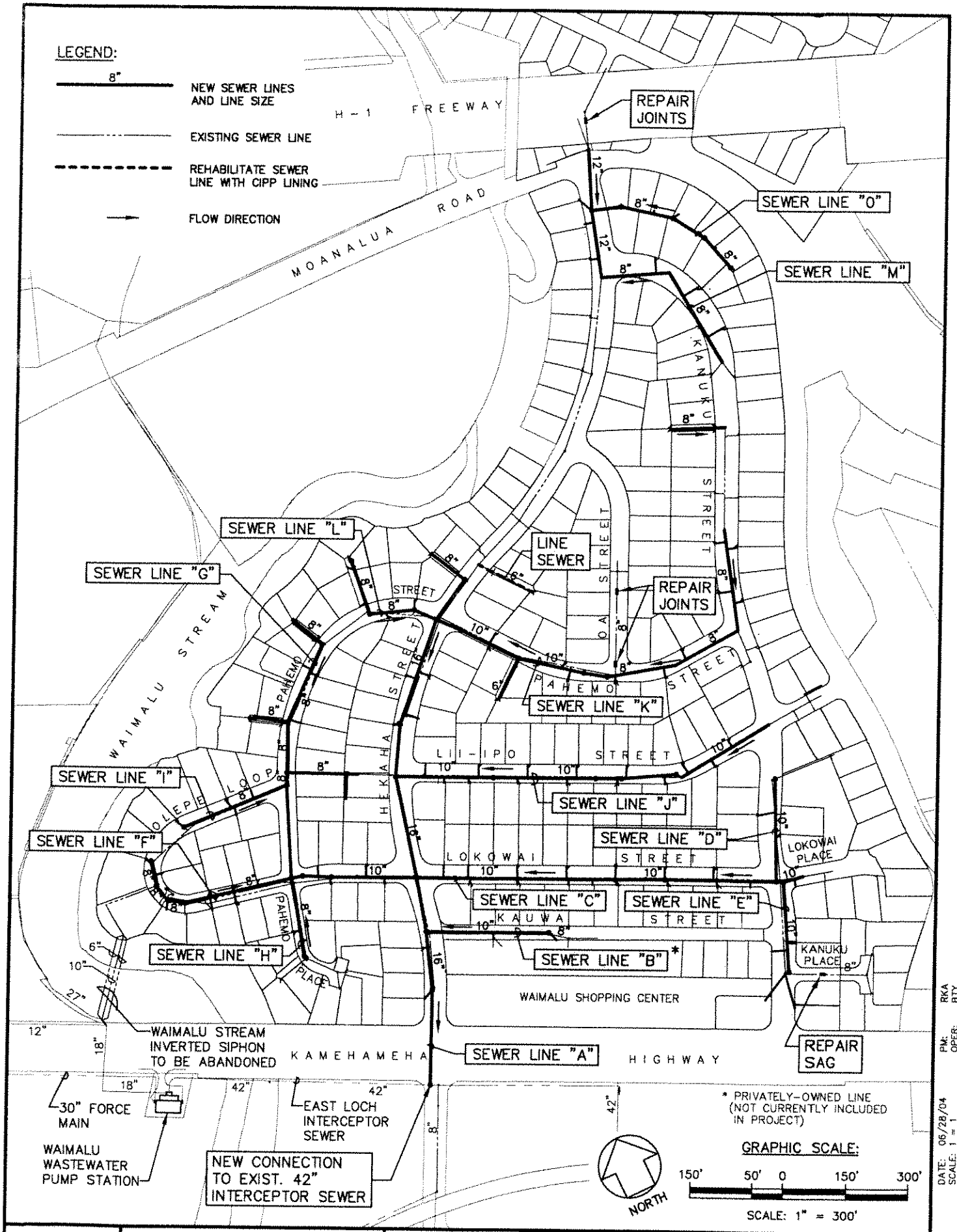
1. General Project Description

Installation of new replacement sewer lines and other sewer repair work are proposed to resolve clogging/sewage spill problems, capacity limitations, and structural deficiencies. The anticipated extent of the rehabilitation work for the lower and upper basins is shown on Figures 1-2 and 1-3, respectively. The replacement of a portion of the Waimalu Shopping Center sewer line (Sewer Line B on Figure 1-2) that is located in the privately owned Kauwa Street will not be funded by the City and is not included in the proposed project. Sewer reconstruction work in Kauwa Street, if implemented, would be performed under a separate project that is privately funded by the owners of the line.

The major sewer reconstruction work will be located in the lower portion of the sewerage basin. This work is anticipated to include approximately 9,000 linear feet of new 8-inch to 16-inch diameter sewers. The project will include a new trunk sewer crossing Kamehameha Highway at Hekaha Street to replace the Waimalu Stream inverted siphon. Up to approximately 180 sewer laterals servicing single-family homes and other sewer customers are proposed to either be replaced or rehabilitated up to the property line. The construction of new lines will be supplemented as required with spot repairs utilizing cured-in-place pipe (CIPP) sewer lining technology and conventional pipe replacement methods.

The new replacement sewer lines are anticipated to be constructed using conventional open-cut trenching. Since a large portion of the new sewer lines will be located below the water table, a significant amount of shoring and dewatering of the pipeline trenches will be required. The limited CIPP sewer lining work is a "trenchless" technology that requires little or no excavation.

The details and basis of the proposed actions are presented in a preliminary engineering report entitled, "Design Alternatives Report for Waimalu Sewer Rehabilitation – 7D01C" (Hawaii Pacific Engineers. 2004). Information pertaining to construction methods, traffic control, alternatives considered, and other relevant aspects of the project are described in



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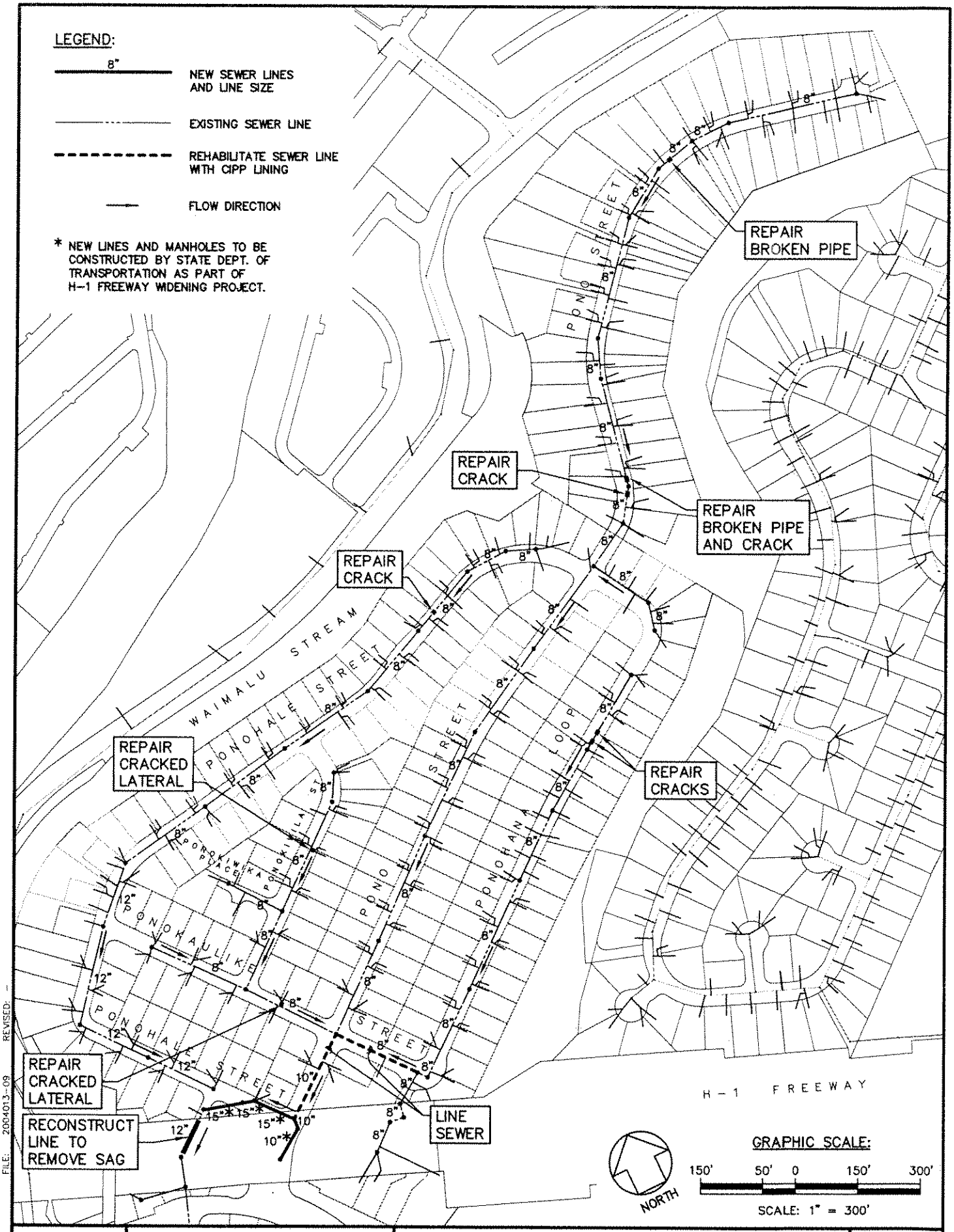
Hawaii Pacific Engineers	WAIMALU SEWER REHABILITATION AIEA, OAHU, HAWAII	GENERAL PLAN FOR PROPOSED RECONSTRUCTION AND REHABILITATION OF SEWERS IN LOWER BASIN	FIGURE 1-2



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Hawaii Pacific Engineers	WAIMALU SEWER REHABILITATION AIEA, OAHU, HAWAII	GENERAL PLAN FOR PROPOSED RECONSTRUCTION AND REHABILITATION OF SEWERS IN UPPER BASIN	FIGURE 1-3

subsequent chapters of this environmental assessment. It should be noted that the current project supercedes the Waimalu Tract Reconstructed Sewer project, which is a similar project for which a preliminary engineering report (Gray Hong Bills & Associates, 1998) and environmental assessment (Gray Hong Bills & Associates, 1999) were previously prepared.

2. Project Funding

The preliminary construction cost estimate for the project is $15.5 million. The project will be funded by the City and County of Honolulu under its Capital Improvement Program budget. A low interest loan from the State Revolving Fund (SRF) administered the State Department of Health may potentially be used.

There will be no direct assessment fees levied on the residents served by the project. The City has determined that the replacement of the privately owned sewer line in Kauwa Street servicing the Waimalu Shopping Center should be performed under a separate project funded by the owners of the line.

3. Project Schedule

Construction of the project is expected to begin in late 2005 at the earliest. Construction of the proposed improvements is anticipated to occur within an 18 to 24 month period.

4. Permits and Approval Required

State Permits/Approvals

Construction plans approvals	Department of Health
Community noise permit and noise variance	Department of Health
NPDES General Permits for storm water runoff from a construction site, discharge of construction dewatering effluent, and discharge of hydrotesting water	Department of Health
Permit to perform work within a State Highway Right-of-Way; construction and traffic control plans approvals	Department of Transportation
Permit for construction to cross or enter the State energy corridor	Department of Transportation

State Permits/Approvals (continued)

Use and Occupancy Agreement (Kamehameha Highway)	Department of Transportation
Discharge permit	Department of Transportation
Construction plans approval	Disability Communication Access Board

City and County of Honolulu Permits/Approvals

Construction plans approvals	Department of Planning & Permitting
Building permit for sidewalk/driveways	Department of Planning & Permitting
Erosion control plan/BMPs	Department of Planning & Permitting
Construction dewatering permit (temporary)	Department of Planning & Permitting
Street usage and trenching permit	Department of Transportation Services/ Department of Planning and Permitting

CHAPTER 2
ENVIRONMENTAL SETTING

A. INTRODUCTION

This chapter provides an overview of the environmental setting of the project area, including physical and biological aspects of the natural environment and the socio-economic characteristics of the community. The environmental setting of a project can significantly affect the type and extent of impacts.

B. CHARACTERISTICS OF THE PHYSICAL AND BIOLOGICAL ENVIRONMENT

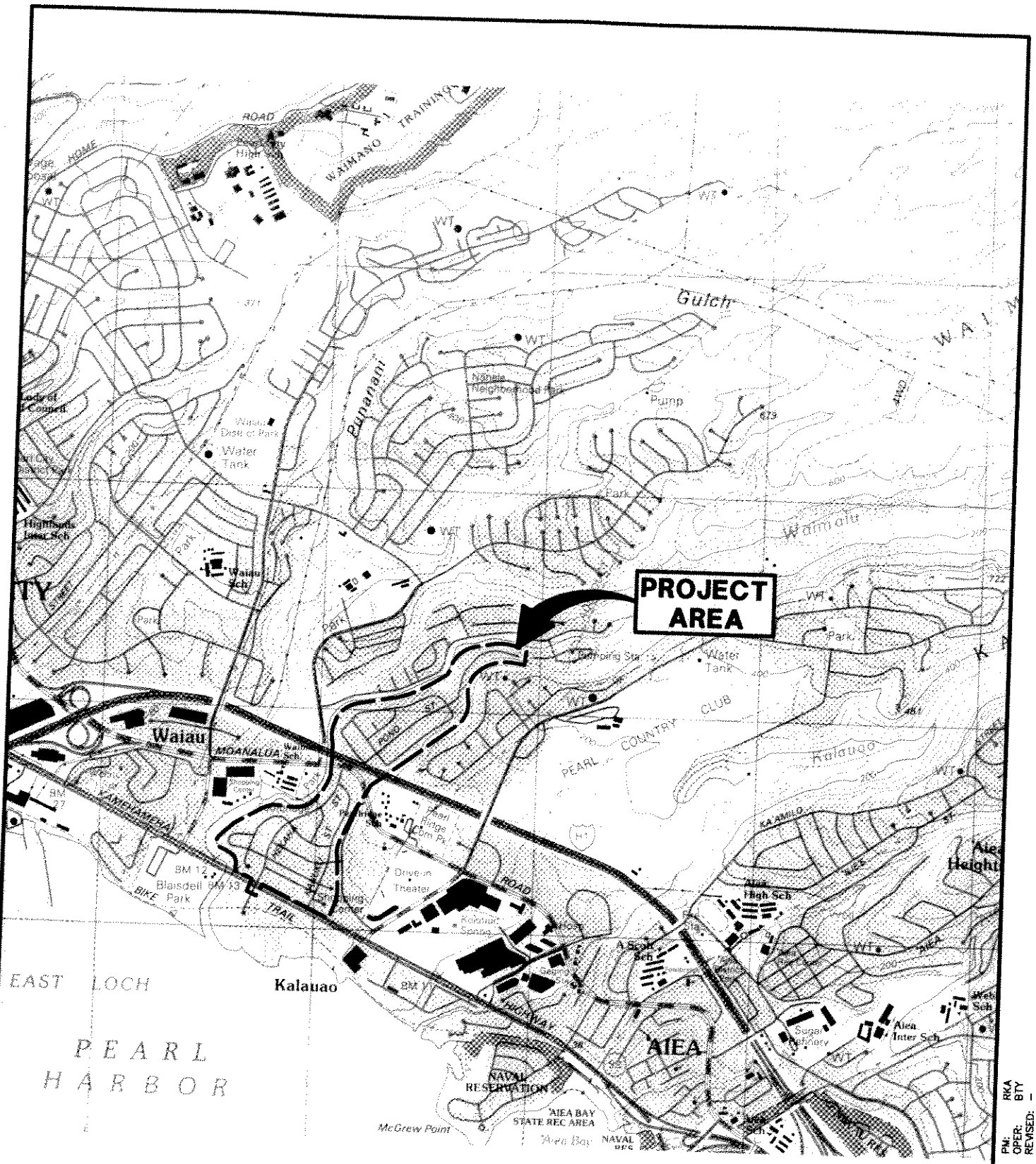
1. Location, Land Use and Topography

As indicated in Figure 2-1, the Waimalu Sewerage Basin is located within the central coastal lowland and floor of Waimalu Stream Valley that drains into East Loch of Pearl Harbor. The project area encompasses approximately 117 acres and is bounded to the south by Kamehameha Highway and extends approximately one-half mile mauka of the H-1 freeway and Moanalua Road. The basin is bounded to the west by Waimalu Stream. A map showing the parcel boundaries, land uses, topographic contours, existing sewers, and other information is presented on Figure 2-2.

The majority of the sewers in the Waimalu sewerage basin were constructed in the mid to late 1950's. The sewers were constructed as part of the following projects listed below and shown on Figure 2-2:

Project	Year (construction plans)
Waimalu Tract (Units 1 though 4)	1954
Waimalu Garden Tract	1957
Waimalu Tract IV-A Hotel Apartment Zone	1957
Waimalu Shopping Center	1958
Pono Aina Subdivision	1959
Salvation Army Day Care and Community Center	1971
Waimalu Vista Subdivision	1978

The lower basin (area south of Moanalua Road) consists primarily of single-family homes, with the exception of the Waimalu Shopping Center located along the Kamehameha Highway boundary and an area zoned for apartment use in the southeast corner of basin. The lower basin, which encompasses about 61 acres, has approximately 250 single-family homes and 130 apartment units.



Source: Adapted from USGS Quadrangle Map (Waipahu, 1998)

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Hawaii Pacific Engineers	WAIMALU SEWER REHABILITATION AIEA, OAHU, HAWAII	USGS TOPOGRAPHIC MAP	FIGURE 2–1

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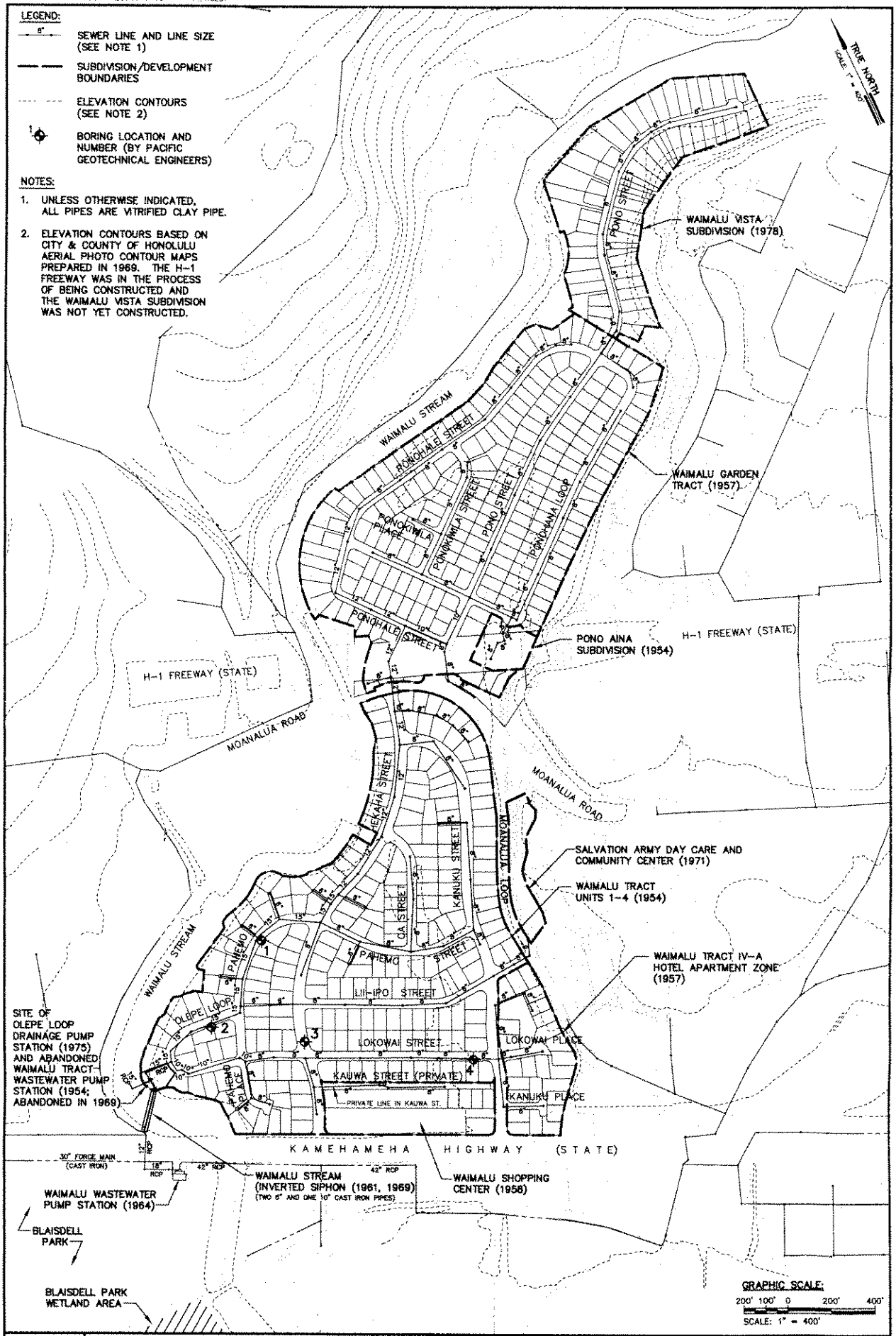


Hawaii Pacific Engineers	WAIMALU SEWER REHABILITATION AIEA, OAHU, HAWAII	EXISTING GENERAL PLAN	FIGURE 2-2

The upper basin (area north of Moanalua Road) encompasses approximately 56 acres and 250 parcels. The majority of the parcels in the upper basin consist of single-family homes. A number of parcels that were previously developed and within the H-1 freeway right-of-way were acquired as part of the original freeway construction project. Additional parcels were recently acquired as part of the freeway widening project currently being constructed. Some sewer lines in the area affected by the widening project will be relocated.

The general topography of the Waimalu sewerage basin is shown on Figure 2-2. The lower basin is relatively flat with ground elevations ranging from 3 feet to 15 feet above mean sea level (MSL). The upper basin ranges in elevation from 15 feet to 52 feet. The project area is fully developed with a minimal amount of unused open space.

2. Climate

Rainfall in the Waimalu Sewerage Basin averages approximately 32 inches per year (DLNR, 1984). The design storm for the basin that is used by the City for evaluation of peak wastewater flows and sewer infiltration and inflow rates is 3 inches of rainfall for a 6-hour storm duration (recurrence interval of 2 years).

Temperature in Waimalu averages 76 degrees F, with temperatures typically averaging in the low 70s during December through March and in the upper 70s and low 80s in the summer months.

Prevailing winds are northeasterly trade winds that occur approximately 70 percent of the time. Trade wind frequency ranges from about 45 percent in January to more than 90 percent in July. Winds may blow from any direction. High winds are most likely to occur during the winter months.

3. Geology and Soils

The project area's geology and soil conditions are critical to the project since past ground settlement has damaged sewer lines and caused poor sewer system performance. A key project objective is to avoid similar problems with the new sewers. Long-term satisfactory performance of the new sewer lines require minimizing differential settlement to maintain adequate pipe slopes for satisfactory flow capacity and scouring (self-cleansing) flow velocity. Soil conditions also directly affect the ease in which pipe trenches can be excavated, which in turn influences the extent and duration of environmental impacts during construction.

As part of the initial planning work for this project, a geotechnical study was conducted by Pacific Geotechnical Engineers, Inc. (PGE, 2003). Soil borings were performed in the study to supplement information from earlier geotechnical studies, which include findings of a previous study investigating ground settlement problems (Fewell Geotechnical Engineering, 1996). As part of the PGE geotechnical investigations,

ground settlement was monitored in the lower basin area. The following discussion summarizes surface and subsurface soil conditions based on the PGE study findings and other available information.

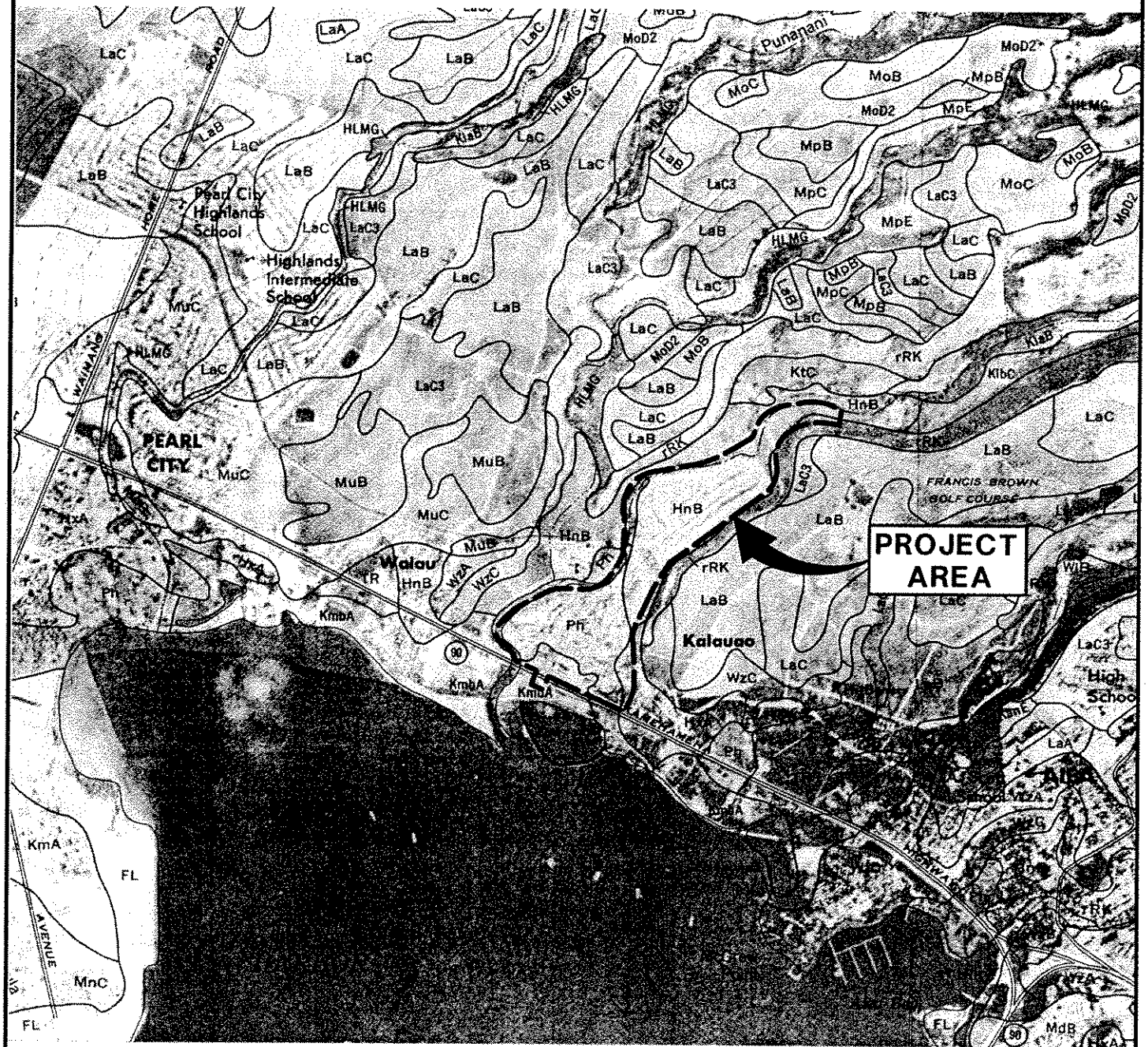
During the last major ice age, about 12,000 years ago, the sea level fell to over 100 feet below the present level. The streams that flowed into Pearl Harbor cut deep channels into deposits of older, consolidated alluvium derived from weathered Waianae and Koolau basalts. As the sea level rose to its present level, thick deposits of younger, soft and loose alluvium accumulated in the channels. In coastal areas, marsh environments formed at the mouth of the stream channels. The marsh environments consisted of younger alluvium with abundant amounts of decomposed organic matter and variable amounts of marine calcareous sediments.

The project site is located in the lower reaches of the Waimalu Stream Valley on the southeastern side of the stream. The low valley walls in the southeastern side of the stream consist of highly to completely weathered basalt. The foot of the valley walls is composed mainly of old alluvium. Prior to the development of the area, much of the lower portion the site consisted of a marsh environment. During the development of the area, site grades were raised by filling and Waimalu Stream was realigned and lined with concrete.

The classification of soils in the Waimalu Sewerage Basin by the U.S. Department of Agriculture Soil Conservation Service (SCS) in its 1972 survey (SCS, 1972) is shown on Figure 2-3. The majority of the surface soils in the lower portion of the project area are classified as Pearl Harbor clay. The SCS classified the surface soils on the shoreward portion of the site, near Kamehameha Highway, as Keaau clay (KmbA), and the surface soils further inland near and above Moanalua Road as Hanalei silty clay (HnB). The SCS classified the surface soils in the southeastern portion of the site as Honouliuli clay (HxA). According to the SCS, HnB is subject to flooding and is moderately permeable. HxA and KmbA soils are very sticky and highly plastic, and have high shrink-swell potential, low shear strength, and low permeability.

The majority of the fill at the site was placed in the mid 1950s and was believed to have originated from the Love's Bakery building excavation alongside the eastern ridge of the valley walls. The fill material consists of old alluvium and completely weathered basalt.

As part of the preliminary geotechnical investigation for the current project, four supplemental test borings were performed at locations shown on Figure 2-2. The soil borings indicated the presence of about 3 to 9 feet of fill over about 15 to 74 feet of marsh deposits generally consisting of very soft to medium stiff organic silt and very loose to loose silty sand. The marsh deposits were found to be thicker in the western portion of the site. The marsh deposits are underlain by firm alluvial deposits and weathered basalts. Groundwater was encountered at depths corresponding to



Source: Adapted from U.S. Dept. of Ag. Soil Conservation Service, (Soil Survey of Oahu, 1972)

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Hawaii Pacific Engineers	WAIMALU SEWER REHABILITATION AIEA, OAHU, HAWAII	SOILS MAP	FIGURE 2-3

approximately 2.3 feet above mean sea level. Artesian groundwater conditions were encountered in the three test borings on the western portion of the site.

Based on the geotechnical investigations, it was concluded that primary consolidation of the soft soils does not appear to be complete and therefore settlement is likely to continue. The degree of consolidation to date for the marsh deposits is estimated to be 65 to 85 percent in the area of the test borings. The rate of settlement, however, is anticipated to decrease substantially with time and should be relatively low in the future. The settlement at Boring Nos. 1, 2 and 3 on the western side of the sewer basin (see Figure 2-2) is estimated to be 5, 8 and 5 inches, respectively, during the next 50 years. In comparison, Borings Nos. 1, 2 and 3 experienced estimated settlements of 34, 25 and 14 inches, respectively, during the nearly 50 years since the initial construction of the sewers in the mid-1950's. The projected 5 to 8 inches of projected settlement within the next 50 years represents an average settlement of 0.008 to 0.013 feet per year. At Boring No. 4 located on the eastern side of the sewer basin, the future settlement is anticipated to be very low, with an estimated settlement of less than 1 inch during the next 100 years.

4. Streams

The Waimalu Stream is a perennial stream located along the western border of the project site. The lower reaches of this stream receive stormwater runoff from the project site. High water levels in the Waimalu Stream channel have caused flooding in the lower basin though backflow of stormwater through the drainage system. Flooding can cause overloading of the sewer system due to infiltration and inflow of runoff and groundwater through defects in the sewer lines and manholes, and through sewer cleanouts and manhole covers that are sometimes opened by residents to drain flooded yards and streets. During heavy storms, runoff in the lower areas of the project site can be contaminated by sewage spilled from manholes of the overloaded sewer lines.

Under the Waimalu Stream Flood Control Project constructed in the early 1970s, the stream banks were lined with concrete and the stream bottom was dredged to a depth of approximately –8.0 feet below sea level (Engineers Surveyors Hawaii, 2003). Channel floodwalls and fencing restricts access to the steep channel banks and deep water upstream of Kamehameha Highway. Public access to the stream banks downstream of Kamehameha Highway is somewhat impeded by overgrown mangrove. Small boats could navigate Waimalu Stream from Pearl Harbor up to Moanalua Road. The use of the stream for boating is limited, however, because the U.S. Navy forbids civilian access by boat to Pearl Harbor and therefore boats cannot be readily launched to access the stream. Upstream of Moanalua Road, the channel bottom is generally exposed during dry weather conditions.

Under Hawaii Administrative Rules, Chapter 11-54, "Water Quality Standards," Waimalu Stream is a classified as an Inland Class 2 waterbody. The lower portion of

Waimalu Stream is influenced by tides. The salinity of stream ranges from 32 to 37 parts per thousand (ppt) near the stream mouth at Blaisdell Park to 0 ppt near the H-1 Freeway (Bishop Museum, 1997).

Due to high turbidity levels, Waimalu Stream is included in the list of "impaired waters" in Hawaii prepared by the State of Hawaii Department of Health under Section 303(d) of the Clean Water Act (DOH, 2002; DOH, 2004). Total Maximum Daily Loads (TMDLs) are currently in the process of being established for Waimalu Stream. Pearl Harbor, in the vicinity of Blaisdell Park, is designated as an impaired coastal waterbody due to high turbidity, total nitrogen, total phosphorus and chlorophyll a.

Like other urban streams on Oahu, the State Department of Health (DOH) warns against the consumption of fish, shellfish or crabs from Waimalu Stream due to potential contaminants by pollutants in stormwater runoff. DOH also has postings to warn of the risk of leptospirosis.

5. Wetlands

There are no wetlands within the limits of the project. As previously noted, however, marsh conditions existed in the lower basin area prior to filling of the area for development in the mid to late 1950's.

A small wetland that is a part of Blaisdell Park is located in the west bank area of Waimalu Stream that borders Pearl Harbor. The wetland is approximately two acres in size and begins approximately 650 feet makai of Kamehameha Highway (see Figure 2-1).

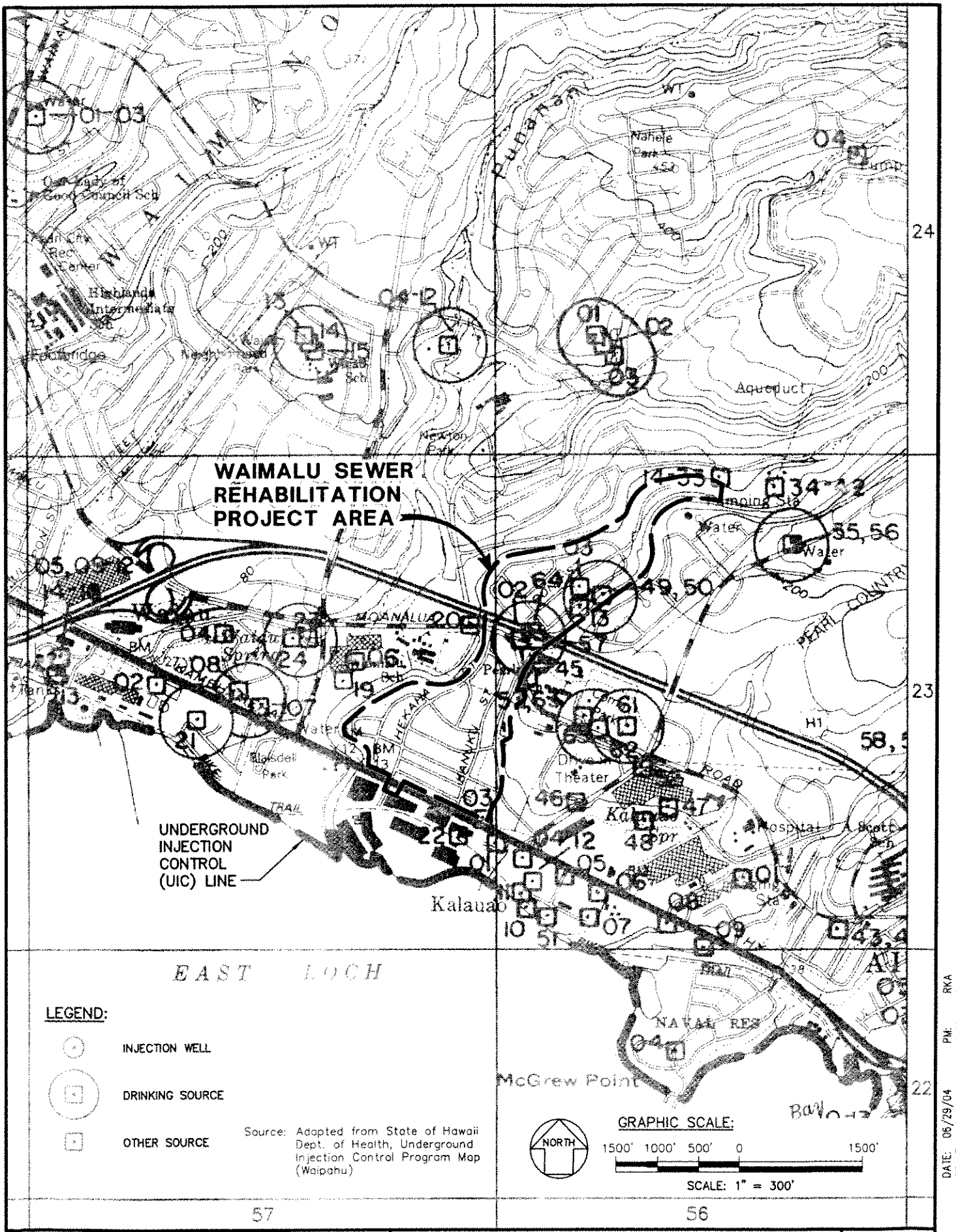
6. Hydrology and Water Resources

The Waimalu Stream watershed is comprised of approximately 5,250 acres, of which 24 percent is developed and classified as an Urban District (Engineers Surveyors Hawaii, 2003). The remainder of the watershed is classified as a Conservation District.

The Waimalu Sewerage Basin is located within the Waimalu aquifer system. The Waimalu aquifer, which has a sustainable yield of 45 million gallons per day, is a major potable water source (DLNR, 1990).

As shown on Figure 2-4, the entire project site is located upgradient of the State Department of Health's Underground Injection Control (UIC) line. The UIC line borders the Pearl Harbor shoreline near the project site. As indicated on Figure 2-4, there are several potable water wells within and near the project site. There are no underground injection wells within or near the project site.

The project site is located within the Southern Oahu Basal Aquifer (SOBA), which encompasses the leeward portion of Oahu from the Wahiawa/Ewa region to Manoa



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Hawaii Pacific Engineers	WAIMALU SEWER REHABILITATION AIEA, OAHU, HAWAII	UIC LINE AND WELL LOCATION MAP	FIGURE 2-4

Valley. In 1987, the SOBA was designated for protection by the EPA under the Sole Source Aquifer (SSA) Protection Program (Safe Drinking Water Act of 1974, Section 1424(e)). The SSA Protection Program is established to prevent contamination or degradation of aquifers that are the sole or principal source of drinking water for an area.

Some of the basal groundwater in the Pearl Harbor area exits the area through springs. There are active springs at Waiau and Kalauao that are approximately 0.4 miles west and east of the project site, respectively (see Figure 2-1). Springs existed at the project area prior to filling and development of the area. Plans for the Waimalu Shopping Center indicate that two springs are located under the shopping center near Kauwa Street. Subsurface springs that result in high water table conditions appear to exist within the project site. One home on Pahemo Street near Oa Street has constant standing water in a shallow drainage trench. A nearby grated storm drain inlet appears to be constantly filled with water during dry weather based on algae growth on the walls and presence of small fish.

7. Flood, Tsunami and Earthquake Hazards

Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), the Waimalu Sewerage Basin is located in Zone D, which are areas of undetermined but possible flood hazards. Plans for the Waimalu Stream Flood Control project show the floodwall along the east bank of the stream having a top of wall elevation of 10.5 feet MSL and a hydraulic grade line of about 6.2 feet MSL in the vicinity of Olepe Loop. During storm conditions when the stream water levels are high, the Olepe Loop drain pump station (see Figure 2-2) is designed to pump stormwater draining to the lower end of the basin to Waimalu Stream.

The lower basin is subject to flooding and was the subject of a recent flood study conducted by the City (Fukunaga & Associates, 2002). The study indicated that the lower areas experience flooding problems that are caused by the low elevation of the lots and the high flood stage of the Waimalu Stream. Flooding is aggravated by ground settlement (i.e., further lowering of the developed parcels) and malfunctioning flap gates on storm drain outlet pipes to Waimalu Stream. Some of the residences in the low-lying areas are provided with 4-inch yard drains connected to the drainage system. The drainage study indicated that despite past drainage improvements, the drainage system does not meet the current City Drainage Standards. More importantly, the drainage system also does not operate as intended due to malfunctioning flap gates that cause Waimalu Stream floodwaters to flow in the reverse direction into the subdivision via the drain inlets and yard drains. As a minimum, the study recommended fixing the flap gates, installing check valves on yard drains, and installing water tight manhole covers at certain low lying locations. The study also provided recommendations for more extensive drainage improvements that could be considered if funding was available.

The project site is not located in a tsunami evacuation zone based on maps from the Joint Institute for Marine and Atmospheric Research and the State Civil Defense System.

The earthquake hazard for the project site is small. The entire island of Oahu is in seismic Zone 2A based on the Uniform Building Code.

8. Flora and Fauna

There are no known endangered flora or fauna within the project site, which has been subjected to extensive urban development. This conclusion is based on information provided by The Nature Conservancy's Hawaii Natural Heritage Program and past flora and fauna evaluations conducted for other projects in the area. These projects include the H-1 Freeway widening (R.M. Towill, 2000) and Waimalu Stream dredging (Engineers Surveyors Hawaii, 2003).

Flora within the project site is essentially limited to landscaping and other vegetation within yards and roadside planting strips. There are no Exceptional Trees in the project area that are protected by the City and County of Honolulu Ordinance No. 78-91.

Fauna that would likely be found within the limits of the project site include mammals that typically inhabit urban residential areas of Oahu. They include dogs, cats, mongoose, rats and mice. With the exception of the migratory Pacific Golden Plover or Kolea (*Pluvialis fulva*), avifauna would include alien species such as the House Finch (*Carpodacus mexicanus*), Zebra Dove (*Geopelia striata*), Java sparrow (*Padda oryzivora*), Spotted Dove (*Streptopelia chinensis*), and Common Waxbill (*Estrilda astrild*) (R.M. Towill, 2000). Endangered native species such as the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) and Short-eared Owl or Pueo (*Asio flammeus sandwichensis*), do occur on rare occasions in the lowlands of Oahu but are highly unlikely to visit the project area (R.M. Towill, 2000). The Hawaii Natural Heritage Program maps and database indicates that two listed endangered Hawaiian waterbirds have been recorded in the Pearl Harbor region. They include the Hawaiian Stilt (*Himantopus mexicanus knudseni*) on the west bank of the Waimalu Stream mouth at East Loch, and the Hawaiian Gallunule (*Gallinula choloropus sandvicensis*) at the Sumida watercress farm approximately 1,500 feet from the project site's east boundary.

The environmental assessment prepared for the dredging of Waimalu Stream (Engineers Surveyors Hawaii, 2003) assessed the flora and fauna resources of the stream that borders the project site. It was indicated that the stream supports flora primarily consisting of alien mangrove and grasses along certain areas of the stream bank. Some beach *naupaka,* a native specie that in not threatened or endangered, can also be found along the stream bank. Aquatic species such as tilapia, mullet, papio, mosquito fish, and several crab and shellfish are known to inhabit the stream. In a 1986 stream dredging environmental assessment, the U.S. Fish and Wildlife Service indicated that the

endangered Hawaiian Stilt and as well as several species of migratory shorebirds utilize the mud flats near the mouth of Waimalu Stream as loafing and feeding areas.

9. Historic and Archaeological Sites

There are no sites listed on the Hawaii or National Register of Historic Places or known archaeological resources within the Waimalu Sewerage Basin. The area of potential effect with respect to historic and archaeological resources is limited to the public right-of-way and sewer easements that have been previously disturbed, filled and developed. Aerial photos taken in 1949 prior to subdivision development indicate that the project area was generally utilized for agriculture or was undeveloped. The archeological assessment conducted for the widening of the H-1 freeway in the Waimalu area (R.M. Towill Corporation, 2000) indicated that portions of the project site was likely previously used for taro or other crop cultivation by the early Hawaiians.

A brief review of historic and archeological resources was conducted for areas near but outside the project site. The shoreline area of Pearl Harbor was heavily utilized by early Hawaiians for fishing, food gathering and fish cultivation in dozens of fishponds prior to the 20th century (Bishop Museum, 1997). Several years ago, human skeletal remains that may possibly date back to the 19th century were identified by the State Historic Preservation Division staff at the nearby Blaisdell Park (Engineers Surveyors Hawaii, 2003). There are many historic sites associated with the nearby Pearl Harbor Naval Base but none are within sufficient proximity to be directly or indirectly affected by the project.

10. Cultural Resources and Practices

No cultural resources, practices or beliefs associated with the Waimalu Sewerage Basin site or the immediate surrounding area have been identified to date. As noted in previous discussions, the project area is highly urbanized and the access to the adjacent Waimalu Stream is limited and difficult. It would be reasonable to conclude that subdivision development in the mid 1950's and subsequent flood control projects along the Waimalu Stream resulted in the demise of any significant native Hawaiian or other cultural activities that may have previously occurred in the project area.

In preparation of this environmental assessment, attempts were made to identify potential cultural impacts by soliciting input and reviewing available information. Input was solicited from government agencies, private organizations and community members to identify knowledgeable individuals who could provide pertinent information on the history, previous land use, and traditional practices of the project area. Organizations consulted included the State Historic Preservation Division, Office of Hawaiian Affairs, Aiea Neighborhood Board No. 20, Aiea Community Association, and the Pearl Harbor Hawaiian Civic Club. Residents living in the project area were also contacted via direct mail (see Chapter 6).

11. Air Quality and Odors

Vehicular traffic is the primary source of air pollutants at the project site. The H-1 freeway, Moanalua Road and Kamehameha Highway are major roadways that impact the air quality of the site. There is also considerable traffic on Hekaha Street and Kanuku Street in the lower basin area.

In general, air quality on Oahu is excellent due to prevailing northeast trade winds. The State Department of Health (DOH) Clean Air Branch maintains nine air quality monitoring stations on Oahu that measure various types of pollutants. Air quality monitoring data compiled by the State Department of Health (DOH, 2001 and 2002) indicates that the established air quality standards for all monitored parameters are consistently met on the island of Oahu.

The DOH air quality monitoring site that is nearest to the project site is located in Pearl City at the Leeward Medical Center. This site is located approximately 1.5 miles west of the project site. The monitoring site was established in 1971 and currently only monitors particulate matter.

According to the DOH data, all except one of the 597 samples collected and tested during 2001 and 2002 for PM_{10} particulate matter (10 microns or less) met the Hawaii State air quality standards. The State PM_{10} standards are 150 micrograms (μg) of particulate matter less than 10 microns in diameter per cubic meter (m^3) over 24-hours, and 50 $\mu g/m^3$ on an annual arithmetic average basis. The Pearl City sampling site had annual mean PM_{10} particulate concentrations of 15 $\mu g/m^3$ for both 2001 and 2002. The one day that exceeded that standards (167 $\mu g/m^3$) occurred on New Year's day in 2001 and can be attributed to smoke from fireworks. The PM_{10} particulate data represents "coarser" particles from sources such as road and windblown dust.

In 2002, $PM_{2.5}$ particulate matter data, which represent "fine" particles typically produced by fuel combustion, was also monitored at the Pearl City site. Based on 186 readings, the $PM_{2.5}$ particulate averaged 4 $\mu g/m^3$ at the Pearl City site, with the highest daily reading of 57 $\mu g/m^3$. The Federal standards are 65 $\mu g/m^3$ over 24 hours and 15 $\mu g/m^3$ for the annual average.

DOH currently operates four monitoring stations for carbon monoxide (CO), none of which are located near the project site. Data from the monitoring stations located in downtown Honolulu, Waikiki, Kapolei and West Beach indicated that CO concentrations are well below State and Federal standards, even in areas with heavy vehicular traffic. In the 8,687 1-hour readings taken in Waikiki during 2002, the highest maximum CO reading recorded was 3,420 $\mu g/m^3$, which is considerably lower than the 10,000 $\mu g/m^3$ and 40,000 $\mu g/m^3$ respective Hawaii and Federal 1-hour standard.

City maintenance personnel have indicated that residents in the lower portion of the project site have complained about odors from the sewer system in the past. A considerable amount of grease, fecal matter and other organic solids can accumulate at points in the sewer system with inadequate pipe slope and flow velocities. Putrefaction of the organic matter in the sewer lines and at manholes can generate hydrogen sulfide and other odorous gases that are released into the atmosphere through roof vents, uncapped cleanouts and drains without traps. Frequent cleaning of the sewer lines in the problem areas is required to prevent both excessive odor generation and clogging problems. Odor complaints, such as those in the Waimalu area, are generally not a health concern. The concentration of odor causing substances such as hydrogen sulfide that generate complaints is considerably lower than levels at which they pose a health concern and would violate air quality standards.

12. Noise

Noise is regulated by DOH under HAR Chapter 11-42, "Vehicular Noise Control for Oahu," and Chapter 46, "Community Noise Control." The current allowable noise limits for residential, apartment and community business properties on Oahu are as follows:

Zoning	Daytime (7:00 a.m. – 10:00 pm)	Nighttime 10:00 p.m. – 7:00 a.m.)
Residential	55 dBA	45 dBA
Apartment	60 dBA	50 dBA
Community Business	60 dBA	50 dBA

Vehicular traffic is the primary source of ambient noise in the project area. In addition to heavy traffic on the H-1 Freeway, Kamehameha Highway and Moanalua Road, there is also considerable traffic on Hekaha Street and Kanuku Street. Other typical sources of noise in the area include aircraft, barking dogs, birds, wind and people engaged in routine activities.

As part of the environmental assessment for the H-1 Freeway widening project in the Waimalu area (R.M. Towill, 2000), a noise study was conducted to evaluate existing and future traffic noise from the freeway. The study found that existing traffic noise near the freeway currently exceed the U.S. Federal Highway Administration (FHWA) and State of Hawaii Department of Transportation, Highways Division (HDOT) noise abatement criteria of 66 dBA for residential areas. Noise measurements taken under the freeway viaduct and within approximately 200 feet of the freeway centerline ranged from 66 to 69 dBA. The high noise levels can be attributed to both traffic noise traveling directly from the freeway lanes and noise radiating below from the viaduct structure. Substantial

noise from traffic from Moanalua Road is also a factor. HDOT currently does not plan to implement permanent noise impact mitigation measures such as a noise barrier on the outer edge of the viaduct.

13. Hazardous Substances

High concentrations of hazardous substances that would impact the project are not anticipated to be encountered at the project site. The land was used primarily for agriculture in the past and was subsequently developed for residential and commercial (shopping center) uses.

An earlier environmental assessment for a similar sewer project that was not implemented (Gray Hong Bills & Associates, 1999) indicated that a diesel fuel underground storage tank (UST) was removed from the Olepe Loop drain pump station site (see Figure 2-2 for location). No petroleum contamination was observed in the soil or groundwater around the tank during excavation. Although minor groundwater oil sheen was observed two days after the excavation, soil and groundwater samples that were taken and analyzed did not indicate petroleum compound concentrations exceeding DOH action levels for soil and groundwater. The UST closure report concluded that additional investigative or remedial activities were not necessary.

A database for reported releases of hazardous substances since 1988 is maintained by the DOH Hazard Evaluation and Emergency Response Office. Within the limits of the project, the database indicated a sewage spill incident at 98-139 Kanuku Street in 1999 and two sewage spill incidents at 98-108 Pahemo Street in 1999 and 2000. There was also one observation of an unknown white substance in runoff (year not indicated) at a pest management company being operated out of a home at 98-170 Pahemo Street.

Groundwater contamination maps (DOH, 2003) reflecting the location of detected organic chemical contaminants do not indicate the presence of contaminants within or upgradient of the project area. The maps are based on data collected from potable water wells between January 1999 and December 2002

14. Utilities Infrastructure

In addition to the sewer lines, other utility infrastructure in the project area includes water, drainage, electrical power, cable and telephone. In the majority of the areas, power, cable TV and telephone lines are located aboveground. Water lines were replaced within the project area south of Moanalua Road in the early 1990s by the Honolulu Board of Water Supply. A stormwater drainage pumping station that is owned and operated by the City and County of Honolulu is located on Olepe Loop (see previous discussion on flood hazards).

Major transmissions lines located within the Kamehameha Highway energy corridor that will need to be crossed included a gas line (16-inch diameter), fuel oil line (10-inch diameter), and telephone, fiber optic and electrical duct banks.

Sewer lines located within the public right-of-way and in easements in private property are owned and maintained by the City and County of Honolulu. Homeowners are responsible for repair and maintenance of the portion of the sewer service lateral that is located within their property. The sewer line located in Kauwa Street that services the Waimalu Shopping Center is privately owned and maintained.

15. Roadways and Traffic

The proposed sewer lines will involve construction of new pipes in the heavily traveled Kamehameha Highway and Moanalua Road. Near the project site, Kamehameha Highway has six through lanes of traffic (three in each direction) whereas Moanalua Road has four through lanes of traffic (two lanes in each direction). New lines will also be constructed in the Hekaha Street and Kanuku Street, which are two moderately traveled connector roads. Some sewer work will be required under and near the H-1 Freeway viaduct that is currently undergoing major widening work. A substantial amount of the sewer line construction work will occur on residential streets in the lower basin.

The streets in the project area have not been recently paved. In a road condition evaluation conducted in February 2003 by the City and County of Honolulu, most of the streets in the project are rated to be F- (fair minus). Road repaving issues are discussed further in Chapter 3.

All of the upper basin mauka of Moanalua Road and about a third of the lower basin makai of Moanalua Road are provided with curb and gutters. Wheelchair curb ramps are provided at most of the intersections in the lower basin that have curbing and sidewalks.

C. SOCIO-ECONOMIC SETTING

1. General

The Waimalu Sewerage Basin is within the City's Primary Urban Center planning area and is represented by the Aiea Neighborhood Board No. 20. Some characteristics that define the project area include the large number of single-family homes, high level of commercial activity at the Waimalu Shopping Center, and heavy traffic on Kamehameha Highway and Moanalua Road.

2. Population

Waimalu had a total population of 29,371 based on the 2000 census and the Waimalu Census Designated Places (CDP) boundaries. This represents a 2 percent decline from

the 1990 census population of 29,967. There were 10,999 housing units in the Waimalu CDP in 2000, which translate to an average household size of 2.7 persons per housing unit.

The design population for the Waimalu Sewerage Basin, which comprises only a portion of the Waimalu CDP, is 4,250 (Hawaii Pacific Engineers, 2004). Average household size in the project area, which is estimated to range from 3 to 5 persons per housing unit, is relatively high due to a fair number of homes with extended families. The project area is fully developed and the population is expected to decline slightly with time largely due to family members moving out of the community to newer housing in West Oahu.

3. Socio-Economic Background

In the Waimalu CDP, 34 percent of households have individuals below 18 years of age and 20 percent of the households have individuals above age 65 (C&C of Honolulu, 2002). The median age is 37.8. In comparison, 38 percent of the households on Oahu have individuals below 18 years and 28 percent of households have individuals above age 65. The median age on Oahu is 35.7.

Workforce and economic statistics for the Waimalu CDP have also been compiled (C&C of Honolulu, 2002). Approximately 91 percent of the residents older than 25 have a high school education or better. The median household income of approximately $61,000 is substantially higher than the median household income of $44,000 for Oahu. The unemployment rate for the civilian workforce is 5 percent and the percentage of the families below the poverty level is 4.1 percent.

The project area is primarily a residential area comprised of single-family homes and a section of low-rise apartment buildings. The Waimalu Shopping Center, which includes a Zippy's restaurant and many other dining establishments, generates significant traffic during lunch and dinner hours. More consumers from outside the community are expected to be drawn to the area following the opening of the Best Buy "big box" consumer electronics store on Kamehameha Highway across from the Waimalu Shopping Center.

4. Land Ownership

The majority of the parcels within the project area are privately owned. With the exception of some work in sewer easements in private property, the majority of work will take place in the public-right-of way of City and State-owned roadways. The State of Hawaii owns Kamehameha Highway and land under the H-1 Freeway. The City owns all the other streets in the project area with the exception of Kauwa Street.

The privately-owned Kauwa Street and the sewer line in the street serves the Waimalu Shopping Center and several residential parcels adjacent to the shopping center. Repair of the sewer line within Kauwa Street will be not be included in the project. The owners

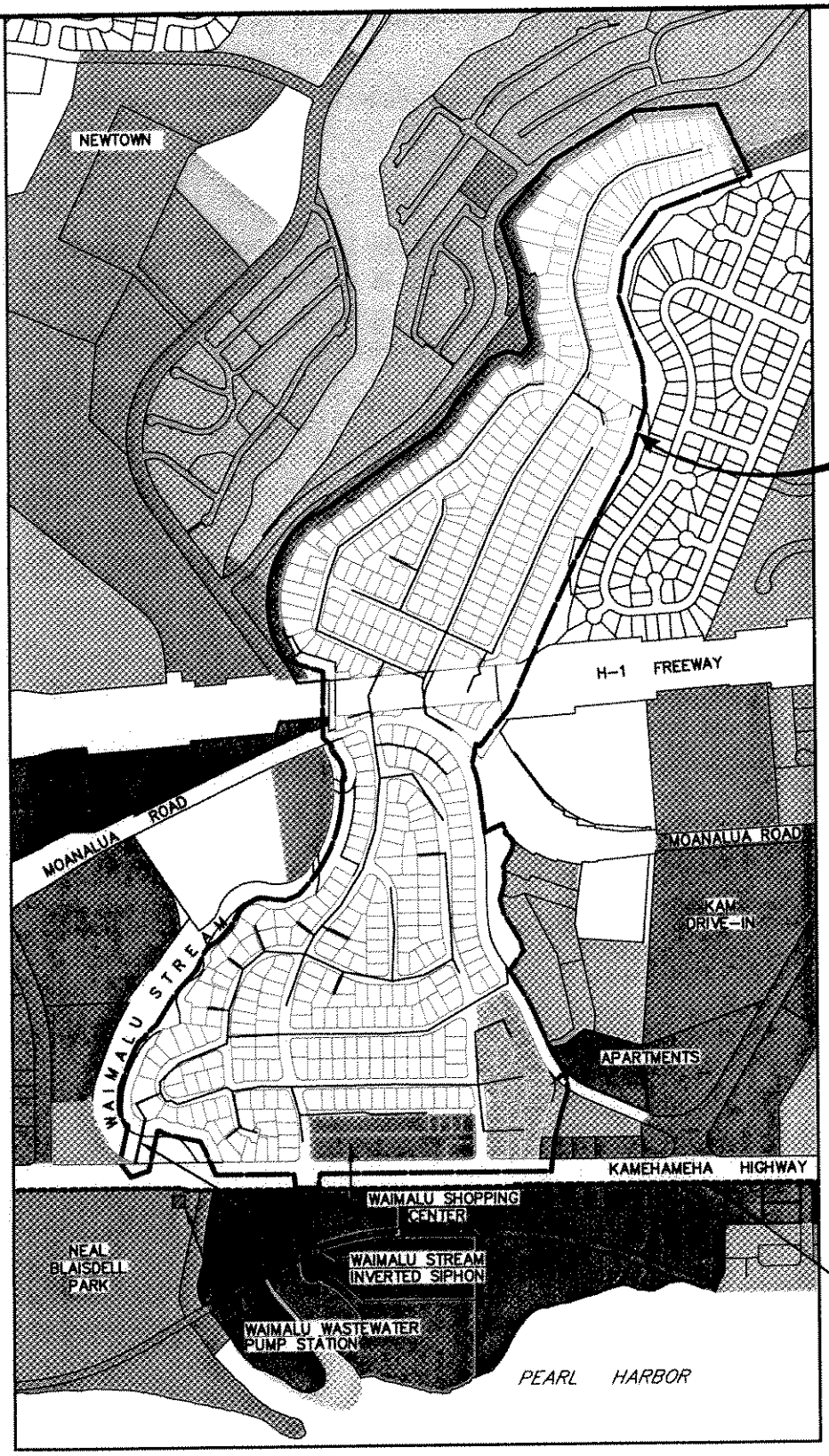
of the line will be required to repair the sewer line under a separate project utilizing private funds.

5. Land Use and Land Use Designations

The project site is classified as "Urban" by the State Land Use Commission. As shown on Figure 2-5, most of the project site is zoned R-5, Residential. The Waimalu Shopping Center parcel is zoned B-2, Community Business, and the apartment area in the southeast section of the project area is zoned A-2, Apartment.

The project site falls under the "Primary Urban Center Development Plan," (C&C of Honolulu, 2004). The apartment area, but not the Waimalu Shopping Center, is located within the area designated as the "Pearl Harbor Regional Town Center." The designated area, which includes the Pearlridge Shopping Center, new Best Buy store, watercress farm and shoreline frontage along Pearl Harbor's East Loch, is intended to promote a neighborhood oriented and pedestrian friendly atmosphere.

The Special Management Area (SMA) has been designated to control development along the shoreline. In the vicinity of the project site, the SMA boundary is located along the makai boundary of Kamehameha Highway (see Figure 2-5). A new proposed sewer manhole for connection to the existing East Loch interceptor sewer is located near the SMA boundary.



WAIMALU SEWER REHABILITATION PROJECT AREA

ZONING LEGEND:

R-5	RESIDENTIAL
A-1	LOW DENSITY APT.
B-1	COMMUNITY BUSINESS
P-1	RESTRICTED PRESERVATION
P-2	GENERAL PRESERVATION
I-2	INTENSIVE INDUSTRIAL
IMX-1	MIXED USE INDUSTRIAL-COMMERCIAL
AG-1	RESTRICTED AGRICULTURAL

SPECIAL MANAGEMENT AREA (SMA) BOUNDARY

SOURCE: INFORMATION ADAPTED FROM C&C OF HONOLULU GIS MAP.

NORTH

GRAPHIC SCALE:

400' 200' 0 400' 800'

SCALE: 1" = 800'

PM: RKA
OPER: FAI
REVISED: -

DATE: 06/29/04
SCALE: 1 = 800
FILE: 2004013-01a

Hawaii Pacific Engineers

WAIMALU SEWER REHABILITATION
AIEA, OAHU, HAWAII

ZONING MAP

FIGURE 2-5

CHAPTER 3
POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

A. INTRODUCTION

This chapter discusses the potential environmental impacts and proposed mitigation measures for the Waimalu Sewer Rehabilitation project. In general, there are no anticipated significant negative long-term impacts associated with the project. Environmental impacts will be limited primarily to short-term disruptions associated with construction activities. The project will have the beneficial effect of providing a reliable low-maintenance sewer system for the project area.

B. LAND ALTERATION AND AESTHETICS

Short-term impacts associated with land alteration and aesthetics will result from the construction activities. The work will include trench excavation, shoring and backfill; installation of piping and manholes; stockpiling of materials; treatment and disposal of dewatering effluent; and traffic detours. The general visual and aesthetic deterioration from the work will cease upon completion of construction and the affected areas will be restored to their original condition to the extent possible. Construction inspection and monitoring services will help ensure that the contractor performing the work adheres to all environmental regulations applicable to construction activities. Construction wastes will be hauled to a State Department of Health (DOH) permitted solid waste disposal or recycling facility as required.

Construction activities may increase the potential for erosion slightly in active work areas due to removal of asphalt pavement in roadways and groundcover in yard easement areas. Erosion control measures will be implemented during the construction to minimize the impacts of erosion during and following construction. The contractor will be required to comply with the Best Management Practices for erosion control in the project's construction drawings and Erosion Control Plan. As part of the trenching permit approval process, the erosion control documents will be reviewed by the City and County of Honolulu Department of Planning and Permitting for conformance to applicable regulations and guidelines.

Construction work within the sewer easements located in private property will need to be coordinated with property owners and residents since existing yard landscaping will be impacted. Appropriate yard restoration work will be included as part of the project.

There will be no adverse long-term visual impacts because the new sewer lines will be located below grade. There will less long-term visual impacts associated with sewer

maintenance vehicles and personnel since the new lines will reduce the frequency of sewer cleaning required.

C. FLOOD HAZARD

The Federal Insurance Rate Map (FIRM) indicates that the project site is located in Zone D, which are areas of undetermined but possible flood hazards. As noted in Chapter 2, flooding in the lower makai areas of the project site is possible due to drainage problems in the area. The construction contract documents will require the contractor to monitor weather conditions and prepare the work area to prevent flood damage, prevent sewage overflows, and maintain continuity of wastewater service. The contractor will be required to provide sewage bypass pumps adequately sized for peak wet-weather sewage flows and backup bypass pumps.

D. FLORA AND FAUNA

No significant adverse impacts to flora and fauna at the project site or in the general area are anticipated to result from the proposed project. No endangered flora or fauna are known to exist at the site. Introduced/alien species are the dominant components of the vegetation and animal communities within the limits of the project. Construction work will be generally limited to the paved, sidewalk and shoulder areas within the public right-of-way, and within sewer easements in private properties.

E. SURFACE WATER QUALITY

The proposed project will not increase the volume of peak stormwater runoff or contribution of contaminants to stormwater runoff. The project will restore pavements and groundcover that are disturbed during construction. Implementation of the project will benefit water quality in Waimalu Stream since the project should resolve sewage overflow problems that result from clogging of sewer lines, inadequate line capacity, and excessively high wastewater flows caused by wet-weather infiltration/inflow.

Materials that may potentially enter Waimalu Stream as a result of the construction work include soil from excavation and material stockpiles, particles from asphalt concrete pavement materials, fuel and oil from construction equipment, and suspended clay particles in dewatering effluent. Adverse impacts to the water quality of Waimalu Stream will be mitigated by employing erosion control measures, keeping the construction site clean as possible to minimize contaminants in stormwater runoff, and treating dewatering effluent discharges to remove silt. Silt fences and sediment trapping drain inlet filters will be used to minimize the entry of contaminants through storm drain inlets. Construction will be phased and scheduled to limit the extent and time that bare ground is exposed to minimize erosion from rainfall and stormwater runoff. Construction vehicles will be fueled offsite or in a designated area with appropriate spill containment features.

The contractor will be required to treat the dewatering effluent using appropriate Best Management Practice (BMP) methods such as sedimentation, chemical pretreatment and filtration prior to discharge to the stream. Groundwater samples obtained during geotechnical investigations conducted during the design phase will be subjected to water quality testing to obtain baseline groundwater quality data and provide preliminary verification that hazardous constituents are not present in the discharge.

National Pollutant Discharge Elimination System (NPDES) general permit coverage will be obtained from DOH for: 1) construction activities, 2) construction dewatering effluent disposal, and 3) hydrotesting water disposal. Water quality testing will be performed to comply with requirements of the NPDES general permit. Discharge pollution controls will be required to be monitored and maintained by the contractor on a routine basis and immediately (within 24 hours) after each significant rain event (1/2 inch or greater rainfall within a 24-hour period). The contractor will be required to curtail work and take action as necessary to protect the work site and stored materials from storm damage and erosion.

Dewatering effluent that is contaminated with sewage will be discharged to the sewer system. Accidental sewage spills during construction will be reported in accordance with standard DOH spill reporting protocol. The contractor will be required to submit a spill mitigation plan prior to commencing work.

The project will not be subject to the Department of Army Section 10 and 404 permits for activities in waterways since all proposed construction activities will be outside the limits of "navigable waters" and "waters of the U.S." (see correspondence in Appendix A). No alteration of the bed or banks of Waimalu Stream is anticipated.

F. GROUNDWATER QUALITY

The project is located inland of the UIC line and there are potable water sources within or near the areas of proposed sewer construction (see Figure 2-4). Throughout construction, the contractor will be required to minimize spillage of sewage within pipe trenches and on the streets to minimize potential groundwater contamination.

As noted above, dewatering effluent contaminated with sewage will be discharged to the sewer system and groundwater water quality testing during the design phase will be performed to verify that no hazardous constituents are present in the discharge. The impact of any contamination of groundwater in the pipe trenches will be insignificant since little or no contaminated water would exfiltrate into the surrounding soil during trench dewatering (groundwater would be entering the trench). Even without dewatering in progress, the impacts would be insignificant due to the low permeability of the clay soil, which would limit exfiltration and provide good pathogen removal.

G. AIR QUALITY AND WASTEWATER ODORS

The use of construction equipment at the project site will create dust and exhaust emissions. The contractor will be required to comply with the provisions of Hawaii Administrative Rules (HAR), Chapter 11-60.1, "Air Pollution Control," which includes the requirements of Section 1-33 on fugitive dust.

The air quality impacts during construction will be temporary in nature and will cease upon completion of the construction. The project will be implemented in appropriate incremental phases to minimize the extent of dust generating materials and activities.

In general, the trench excavation work is not expected to generate a significant amount of fugitive dust since the high water table will tend to minimize dry soil conditions. The contractor will be required to control the generation of dust by adequately watering down the construction site and soil stockpiles, keeping the construction site and access roadways reasonably free of dust-causing materials, covering trucks hauling materials, and implementing other appropriate dust control practices.

The contractor will be required to control exhaust emissions by maintaining construction equipment (including emission control devices) in proper working order and minimizing unnecessary idling of engines. The construction equipment emissions should not significantly change the quality of air in the project area due to prevailing winds and existing exhaust emissions generated from traffic in the area.

The Waimalu sewer rehabilitation project is not anticipated to generate a significant amount of odors during construction since the contractor will be required to bypass sewage using enclosed pumping/piping systems. Odors generated during work on connections will be very short-term and minimal. Odors generated during construction work should be substantially lower that odor levels that are generated by putrefaction of grease and organic matter that currently accumulate due to clogged lines and sluggish flows.

Upon completion of the project, odor problems that have periodically occurred in the lower basin area should be eliminated. The new sewers will have sufficient slope to attain self-cleansing scouring velocities that eliminate odorous grease and solids accumulation.

H. NOISE

The noise level will increase during the construction period due to use of construction equipment such as sheet pile drivers, backhoes, trucks, compactors, and pavers. Homes and business near the active construction area will be impacted by construction equipment that are anticipated to typically generate noise levels ranging from 80 to 90 dBA at a distance of 50 feet. The noise impact of construction equipment will be minimized by requiring properly functioning mufflers on machinery and restricting construction activity to normal working hours to the extent possible. The noise impacts from construction will be temporary in nature

and will generally shift to different areas of the project site as each sewer line segment is completed.

Work on weekends and at night will be limited to the extent possible. Work on the sewers in many areas will likely require operation of sewage pumps to bypass flow around the work area and pumps to dewater the pipe trenches. The pumps may be required to operate intermittently or continuously throughout the night. Although the pumps would be housed in noise-attenuation enclosures, noise standards may be exceeded. Due to heavy traffic on Kamehameha Highway, it is anticipated that work at night may be required.

Construction activities will be required to meet Chapter 11-46, "Community Noise Control," of the Administrative Rules of the Department of Health. The contractor will be required to obtain a noise permit from DOH to allow the daytime noise level limits to be exceeded during the working hours of 7:00 a.m. to 6 p.m., Monday through Friday, and 9:00 a.m. to 6:00 p.m. on Saturday. A noise variance will be required for all other hours to allow continuous operation of the pumps at night and weekends, and for night work on Kamehameha Highway. During the design phase of the project, a noise study to support the noise variance will be conducted. The study will include measurements of ambient noise levels, analysis of potential increases in sound levels, and evaluation of sound attenuation requirements. Construction activities will be suspended or curtailed on Sundays and during holidays to the extent possible.

Following completion of construction, the project will have some beneficial impacts on noise due to the reduction of sewer cleaning frequency. Noise from sewer cleaning operations is generated by high-pressure water pumps (use for sewer cleaning water), vacuum pumps (used to suck debris), and pipeline auger equipment.

I. ARCHAEOLOGICAL AND HISTORIC SITES

No impacts to archaeological and historic sites are anticipated. The proposed construction will take place within roadway and easement areas that have been previously disturbed and where no historic sites are known to exist. The affected areas have been significantly altered due to past cultivation of the land, and grubbing and grading work. In its pre-assessment consultation response letter dated June 25, 2004 (see Appendix A), the State Department of Land and Natural Resources Historic Preservation Division (SHPD) stated the following:

> "A review of our records shows that there are no known historic sites within the project area. The project will be conducted within existing sewer corridors, street right-of-ways, and sewage easements where historic sites are highly unlikely to be found. Thus, we believe that "no historic properties will be affected" by this project."

As a precautionary measure, the contractor will be made aware of potential encounters with artifacts or remains such as shells, bones or charcoal deposits. Should archeologically significant features be uncovered, immediate archeological consultation will be sought with

the SHPD in accordance with applicable regulations. The work will be halted in the immediate vicinity of the find and the find will be protected from further disturbances. Mitigation measures recommended by SHPD will be implemented as required.

J. CULTURAL RESOURCES AND IMPACTS

The proposed project has no identifiable adverse impacts on Hawaiian culture and traditional and customary rights. Due to the location and nature of the proposed work, the project does not lend itself to significant or direct promotion or protection of cultural beliefs, practices and resources of native Hawaiians or any other ethnic group. No significant cultural resources or potential adverse impacts to cultural practices related to the site or proposed project were identified by organizations and individuals that were contacted.

K. HAZARDOUS SUBSTANCES

Based on the past use of the project area for agriculture and the existing residential and commercial land uses, remediation work for hazardous materials is not anticipated to be required at the project site. During the design phase of the project, tests on soils samples obtained from exploratory soil borings will be performed to verify the absence of excessive levels of hydrocarbons, pesticides and other hazardous substances.

During construction, the contractor will be required to perform hazardous materials testing on soil hauled offsite for disposal. Also during construction, the contractor and City inspectors will visually monitor the trench excavation and groundwater for signs of possible contamination such as oil sheens or odors. If soil contamination is suspected, the excavated materials and groundwater will be immediately tested to determine if hazardous pollutants are present. Appropriate remedial action will be taken to meet applicable regulatory requirements and modification of the design and/or construction methods will be implemented as required.

L. TRAFFIC IMPACTS

Traffic on roadways near the construction work will be temporarily disrupted during installation of the sewer lines and other rehabilitation work. Roadways on which the sewer work will be performed were previously shown on Figures 1-2 and 1-3. Increased traffic congestion on Kamehameha Highway and Moanalua Road will result from construction work on or near these two heavily traveled major thoroughfares. Increased traffic due to the sewer construction work will also be a concern on Hekaha Street and Kanuku Street, which are two collector streets that experience moderately heavy traffic. Opening of a new Best Buy store across the Waimalu Shopping Center is expected to increase traffic in the area.

Construction work on the Waimalu roads during the peak hours from 7:00 a.m. to 8:30 a.m. and 3:30 p.m. to 6:00 p.m. will result in potentially significant adverse traffic impacts. The sewer construction work, which will require open trenches in the roadways, will therefore generally be limited to non-peak traffic hours between 8:30 and 3:30 p.m., Monday through

Friday. Construction work on Kamehameha Highway will generally be limited to 8:30 and 3:00 p.m., Monday through Friday and will not be permitted during the "Back to School Jam," Thanksgiving weekend, and Christmas/New Year period. Open trenches will be covered as required with steel plates during non-working hours.

The sewer construction work involving open trench sections along the proposed sewer alignments will require lane closures and detours. Closure of roadways to all through traffic and directing non-local traffic to use alternate routes will be considered to improve traffic flow and safety, and expedite the construction work. Where closure to through traffic is not appropriate, such as on Kamehameha Highway and Moanalua Road, one lane will be closed at a time. Night work on Kamehameha Highway will be proposed to the State of Hawaii Department of Transportation (HDOT) to minimize traffic impacts. Work on Hekaha Street and Kanuku Street in the vicinity of Kauwa Street will need to be coordinated with the merchants of the Waimalu Shopping Center to maintain adequate access to the backside of the shopping center for delivery of goods.

To avoid major traffic congestion, construction work on the sewer project, particularly work affecting traffic on Moanalua Road, will be deferred until after work on the H-1 Freeway widening project in the Waimalu area is completed. The sewer line work will also be coordinated with other State and City projects in the area to the extent possible to minimize traffic congestion.

The contractor will be required to comply with traffic control plans approved by the City Department of Planning and Permitting and the HDOT. Construction will be phased and the contractor will generally be required to limit the work area to one where the work within the area can be completed during the day. Traffic control plans will cover each phase of work.

The contractor will be required to comply with safety precautions and measures as prescribed in the "Administrative Rules of Hawaii Governing the Use of Traffic Control Devices at Work Sites on or Adjacent to Public Streets and Highways," as adopted by the State Director of Transportation, and Part VI, "Standards and Guides for Traffic Controls for Street and Highway Construction, Maintenance, Utility and Incident Management Operations," of the "Manual of Uniform Traffic Control Devices for Streets and Highways," as published by the Federal Highway Administration. Special-duty police officers will be employed as required to facilitate traffic flow and minimize traffic hazards. Monitoring will be performed to verify compliance with conditions imposed by permits issued for the construction work in the streets and highway. Existing traffic control devices, which may be damaged or removed during construction, will be required to be replaced immediately after the construction in the area is completed.

Area residents and businesses will be kept well informed of the project prior to and during the construction work. Information will be published in the major daily newspapers and on a project website to inform affected residents and commuters of upcoming major construction

work, road closures, detours, and suggested alternate routes. Electronic roadside billboards will also be used to warn motorist of upcoming and current work. A telephone hotline number to reach a person knowledgeable about the project will be made available 24-hours per day during the construction period to receive questions and complaints on traffic, noise, and other project concerns. Residents and businesses within and near the project area will be informed about the project and the availability of the project website and hotline by direct mailings. Press releases may also be issued periodically.

The contractor will be required to minimize inconvenience to the property owners. Residents in the immediate work area may be inconvenienced by restrictions to driveway access and roadway frontage usage. Vehicular and pedestrian access to and from the private properties will be provided at all times, or the contractor will provide other suitable temporary accommodations. The contractor and the City will coordinate any temporary closure of private driveways with the affected property owners prior to the closure. Where necessary, parking may be temporarily restricted on both sides of streets.

The contractor will be required to make provisions for emergency access and will be required to provide full access during non-working hours. Emergency services (fire, ambulance and police) will be notified prior to implementation of any required detours or street closures. The Honolulu Police Department may see an increase in complaints and calls related to traffic and other project related concerns.

The contractor will be required to notify Oahu Transit Services a minimum of two weeks prior to construction of the location, scope of work, proposed closure of any streets or traffic lanes, and the need to relocate any bus stops. Bus routes potentially affected by increased traffic from the project are as follows:

- Kamehameha Highway: Route 40/40A (Honolulu-Makaha), Route 42 (Ewa Beach-Waikiki), Route 53 (Honolulu-Pacific Palisades), Route 62 (Wahiawa Heights and Wahiawa-Honolulu), and Route A (CityExpress!)
- Moanalua Road: Route 54 (Honolulu-Pearl City)

Bus stops on Kamehameha Highway in the Ewa and Honolulu direction are located on the Honolulu side of the Hekaha Street intersection. Traffic control plans will include temporary relocation of the bus stops as required based on input from Oahu Transit Services. No bus stops on Moanalua Road are anticipated to require temporary relocation.

It may be necessary for the contractor to use the public right-of-way for parking and temporary storage of vehicles and construction equipment. The contractor will be required to provide adequate and safe sidewalk widths, allow for adequate visibility, and institute other actions to ensure pedestrian and motorist safety.

The project will also have some beneficial long-term impacts on traffic. Due to reduced amount of maintenance required for the new sewers, there should be less traffic impacts associated with sewer maintenance vehicles and personnel working in the streets to clean or unclog sewer lines.

M. USE OF ENERGY

The sewer system within the project area operates by gravity flow and requires no power for operation. There will be some long-term energy savings due to reduction in sewer cleaning requirements, which includes fuel for operation of sewer cleaning equipment and hauling of sewer debris to disposal sites.

N. USE OF POTABLE WATER

The project will result in savings in potable water consumption due to the reduction in sewer cleaning requirements. Unless reclaimed water is available, potable water is typically used to flush sewer lines during cleaning operations.

During construction of the sewer line, water will be used for dust control, concrete mixing, jet grouting operations, and other typical construction uses. Water will be provided by temporary water meters installed on fire hydrants. The City's Fire Communication Center (Ph. 523-4411) will be required to be notified regarding any interruption of the existing fire hydrant system.

O. USE OF RECLAIMED MATERIALS AND DISPOSAL OF CONSTRUCTION MATERIALS

In accordance with HRS Section 103D-407, recycled glass will be used for non-structural pipe cushion and backfill material when available at a cost equal to or lower than the equivalent aggregate material. It should be noted that a portion of the backfill for the Waimalu project will likely consist of special lightweight fill material to minimize the weight of the backfill and settlement problems. Recycled glass will not be used in place of the lightweight backfill.

Excavated soil not suitable for reuse as backfill will be removed from the site and hauled to a suitable reuse or disposal site. Existing asphalt concrete pavement removed from the roads will be recycled to the extent practicable.

P. UTILITIES, ROADS AND OTHER INFRASTRUCTURE

The construction work will take place within existing roadways with various utility lines. There will be temporary localized disruptions to sewer, water and possibly other utility services during the project. The new sewer lines will be designed to minimize interferences with other utility lines. Construction plans will be submitted to the utility companies and City and State agencies for review and approval and the work will be scheduled and coordinated to the extent possible to minimize impacts to other utilities. Existing utilities

lines will be located by toning, potholing or hand excavation as required to minimize the risk of damaging the lines. Residents will be given advance notice of utility outages for such work as relocation of water and other utility lines, and connections to new sewer lines. All existing street improvements (i.e., pavement, curbs and gutters, sidewalks and driveways, traffic control devices, etc.), utilities, and other public and private property improvements will be restored to their original or better condition after the installation or repair of the sewer lines.

Due to high water table conditions, dewatering of trenches for installation of new sewer lines and manholes will be required in the majority of the lower basin areas. Pumping of groundwater from the trenches, however, must be minimized to prevent ground settlement and damage to roads and sidewalks, utilities, homes and other structures. Reduction of inflow of water into the pipe trenches during construction is expected to be accomplished by the use of steel sheet piles along the trench walls and jet grout on the bottom of the trench (see discussions in Chapter 4). The contractor will be required to monitor the area around the active work zone for possible ground settlement.

During pre-assessment consultations (see correspondence in Appendix A), the Aiea Neighborhood Board No. 20 and Representative Mark Takai indicated that the entire width of roadway affected by the construction should be paved. At the time this issue was raised, the City was reevaluating its policy on repaving the entire lane or roadway as part of utility construction work affecting only a portion of the roadway. The City has since issued a policy memorandum dated September 30, 2004 addresssing the road paving requirements. The policy requires the following minimum repaving for utility trenches that are longitudinal to the roadway:

- For paved road travel ways greater than 36 feet, the paving shall be a minimum of one lane not exceeding 15 feet in width.
- For paved road travel ways 36 feet or less, the paving shall be the trench width plus an additional one foot on each side of the trench.

The policy memorandum also includes policies to improve the quality of the trench backfill and restored pavement. They include:

- Certification that the repair work has been performed in accordance with City standards and/or specifications.
- Improved training of inspectors to effectuate good quality trench restoration and pavement repair.
- Two year warranty period.
- Alignment of trenches outside the probable vehicles' wheel tracks where possible.

- Thicker asphalt concrete pavement section (4-inches thick) over and within one foot of each side of the trench.

Based on the City's new policy, full paving of the roadway is not required under the Waimalu sewer project. More importantly, the use of sewer funds for the paving of the entire roadway cannot be justified under the new policy. Based on the current pavement condition of the Waimalu roads, full repaving of the roads as part of the sewer project would be recommended if sufficient supplemental road maintenance funding was available. The City's Department of Design and Construction, however, has determined that funds are currently not available to cover this additional work and that the repaving requirements of the Waimalu streets would be more effectively addressed by a separate repaving project. The City has found through experience that the quality of the repaving work under a separate dedicated road paving project is generally higher than the quality of repaving work performed under a utility installation or repair project. Due to many higher priority projects, the City is not able to provide the desired degree of coordination and quality control inspection for the full repaving of roads under utility projects at the present time.

In general, streets in the poorest condition should be given highest priority for repaving. It would not be prudent to transfer limited funds or delay work for other streets in worse condition in order to fully repave the streets in the Waimalu sewer project. The extent of repaving work on the Waimalu sewer project will be dictated by the minimum requirements of the City's new repaving policy. Based on the policy, it is anticipated that full lanes affected by the trenching work will be paved on Hekaha Street and Kanuku Street, and only the trenched areas will be repaved on the other streets. Roads in the project area would eventually be fully repaved under the City's road maintenance program at a later date.

The above discussion applies to City-owned streets, where most of the sewers in Waimalu are located. A HDOT repaving project for the State-owned Kamehameha Highway is scheduled to be bid in May of 2006 (see pre-assessment correspondence with the HDOT in Appendix A). The timing of the State project is ideal as the proposed installation of the new sewer line across Kamehameha Highway should be completed just prior the repaving project. Moanalua Road, which is owned by the City, is expected to be repaved within one to two years following repair of the sewer line crossing the road.

It is important to note that paving the entire roadway will not necessarily prevent pavement failure over the utility trenches or potholes from developing. Proper compaction of the backfill material in utility trenches is necessary to minimize the probability of future pavement problems. This can be achieved through a comprehensive trench backfill inspection and testing program during construction. The Waimalu project will incorporate a rigorous backfill quality control program, which is especially important due to the poor soil conditions. Ground stabilization techniques and use of lighter weight backfill, pipeline and manholes materials are proposed for the Waimalu project to minimize future pipeline settlement and pavement problems. Extensive use of flowable fill/Controlled Low Strength

Material (CLSM) backfill is proposed to help ensure that a sound base for the trench repaving is provided and to expedite construction.

For other portions of the roadway, reconstruction of the road subbase in areas of distressed pavement should be considered as a long-term solution to the pothole problems. Due to drainage problems in the lower Waimalu area that can result in water logged and weakened road subbase, improvements to the drainage system should also be considered as part of the solution to resolving pavement problems. The use of Waimalu sewer funds for drainage improvements is not justified.

The sewer line work will be coordinated with State and City projects to the extent possible to minimize excavation in newly paved roads. As noted above, the sewer line work in Kamehameha Highway should be completed prior to the planned Kamehameha Highway and Moanalua Road repaving projects.

Q. SCENIC AND RECREATIONAL RESOURCES

The project involves replacement and repair of underground utilities and there are no impacts to view planes or scenic vistas. There are no significant panoramic views identified in the "Primary Urban Center Development Plan" (C&C of Honolulu, 2004) that would be temporarily obstructed or degraded during construction by construction equipment or activities.

There are no significant recreational activities occurring at the project site and within the adjacent Waimalu Stream. Increased traffic congestion during construction may have some short-term impacts on users of the nearby Newtown Golf Driving Range, Blaisdell Park and other parks and recreational facilities in the area.

R. SOCIO-ECONOMIC AND LAND USE IMPACTS

The estimated cost of the Waimalu Sewer Rehabilitation project is $15.5 million. The project will be funded under the City and County of Honolulu's Capital Improvement Program (CIP). Since sewer user service fees are assessed uniformly islandwide, this project and other proposed sewer projects on Oahu are projected to result in increases to user fees for all sewer customers.

The project will provide employment for contractors and their employees, material suppliers and others associated with the construction industry. The increased employment, however, will be temporary and will generally not directly benefit residents in the Waimalu community. The project may reduce employment opportunities for sewer maintenance personnel due to reduced sewer cleaning and sewage spill cleanup requirements. Traffic impacts during construction may temporarily reduce the number of customers at the Waimalu Shopping Center and other nearby businesses.

Since the project area is fully developed, the project has no effect on future land use unless the land is rezoned for higher density use. Although the project increases sewer capacity, the intent is to rectify past capacity deficiencies and to provide a greater factor of safety against sewer overloading.

This project will benefit the residents of the service area by minimizing the probability of future public health hazards and sewer service disruptions caused by sewage spills and clogged pipes. The City and County of Honolulu will benefit from reductions in the expenditure of manpower for maintenance of the sewer lines, for cleanup of wastewater spills, and for reporting/administrative tasks associated with wastewater spills.

Some homeowners may be required by the City to repair their sewer lateral pipes within their property at their own cost if during construction, the lines are found to be defective and leak excessive amounts of groundwater and stormwater runoff into the City's sewer system. Repair of the privately-owned sewer lateral lines may be a financial hardship for homeowners. The repairs, however, will have the benefits of reducing sewer overloading, risk of sewage spills, and capital and operation and maintenance costs associated with downstream wastewater facilities.

S. RELATIONSHIP TO LAND USE POLICIES AND CONTROLS

1. State Land Use District

The State Land Use Law, Chapter 205, Hawaii Revised Statutes (HRS), is intended to preserve, protect and encourage the development of lands in the State for uses which are best suited to the public health and welfare for Hawaii's people. The project site is located within the State "Urban" district and the proposed project is consistent with this designation.

2. Hawaii State Plan

The Hawaii State Plan, HRS Chapter 226 adopted in 1978, outlines broad goals, policies and objectives to serve as guidelines for the future growth and development of the State. The proposed project is consistent with the objective of "maintenance and pursuit of improved quality in Hawaii's land, air, and water resources" (§226-13[a][2]). It is also consistent with the policy of the State to "promote the proper management of Hawaii's land and water resources," (§226-13 [b][2]) and "promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters" (§226-13 [b][3]). The project will decrease the risk of sewage spills and thereby improve stream and coastal water quality. The project will meet the needs of the Waimalu community and does not conflict with the State Plan with respect to the well being of the residents and protection of the environmental and cultural resources.

3. City and County of Honolulu General Plan

The General Plan of the City and County of Honolulu sets forth broad statements of social, economic, environmental, and design objectives and policies which are desired over the long-term. The plan, which was originally adopted in 1972, was revised in 1992 to reflect past amendments through the end of 1991, and was most recently amended in 1992 and 2002. The latest October 3, 2002 amendment reflects changes in population distribution percentages in Resolution 02-205, CD1.

The proposed project is consistent with the following policies and objectives of the General Plan:

III. Natural Environment

Objective A To protect and preserve the natural environment

Policy 7 Protect the natural environment from damaging levels of air, water, and noise pollution.

V. Transportation and Utilities

Objective B To meet the needs of the people of Oahu for an adequate supply of water and for environmentally sound systems of waste disposal

Policy 5 Provide safe, efficient, and environmentally sensitive waste-collection and waste disposal services.

Objective C To maintain a high level of service for all utilities

Policy 1 Maintain existing utility systems in order to avoid major breakdowns.

The project will result in much need rehabilitation and upgrade of the Waimalu sewer lines to decrease the risk of sewage spills and water pollution.

4. Primary Urban Center Development Plan

The Primary Urban Center Development Plan (PUC DP) helps to implement the objectives and policies of the General Plan by providing relatively detailed development schemes for Central Oahu. The PUC DP was approved on June 21, 2004 as Ordinance 04-14. The proposed project is consistent with the following sections of the PUC DP:

- The vision statement in Section 2.1 of the PUC DP projects a vision in which beaches and coastal waters are actively managed and improved. The proposed

project will protect beaches and coastal waters by improving water quality through reduction of sewage spills.

- Under Section 4.2.2 of the PUC DP, one of the stated wastewater policies is to "Implement wastewater collection system improvements to provide adequate service and sound facilities to existing neighborhoods." Under Section 4.2.3, the stated development plan guidelines include, "complete current projects needed to correct identified service or facility inadequacies to neighborhoods where change in service demand is not anticipated." The proposed project to rehabilitate the Waimalu sewers fully conforms to the wastewater policies and guidelines of the PUC DP. The Waimalu system has been identified in past studies as one of the high priority sewer basins requiring timely upgrade work.

5. Primary Urban Center Public Infrastructure Map

In its pre-assessment consultation response letter dated June 29, 2004 (see Appendix A), the City Department of Planning and Permitting indicated that the proposed project would not require the addition of a symbol for the publicly funded facility to the Primary Urban Center Public Infrastructure Map. Underground sewer lines are not a type of public infrastructure that is required to be shown on the map.

6. Special Management Area

The City Department of Planning and Permitting has indicated in its draft environmental assessment review comments dated December 15, 2004 that the proposed project is outside the Special Management Area (SMA) and therefore a SMA Use Permit is not required (see Appendix B). As indicated previously on Figure 2-5, the SMA line is located makai of Kamehameha Highway.

CHAPTER 4
ALTERNATIVES CONSIDERED

A. INTRODUCTION

Various alternatives for upgrade of the Waimalu sewer system were investigated in detail in the engineering report, "Design Alternatives Report for Waimalu Sewer Rehabilitation, - 7D01C," (Hawaii Pacific Engineers, 2004). This chapter provides a brief summary of the alternatives that were considered and the basis for the recommended actions. The following areas of evaluation are addressed:

- Alternative construction methods for new sewers.
- Alternative sewer design options to minimize settlement problems.
- Alternatives for reconstructed wastewater system to resolve lower basin problems.

If more information is required on the alternatives, the engineering report is available for review at the City's Municipal Reference Library.

B. ALTERNATIVE CONSTRUCTION METHODS FOR NEW SEWERS

Construction of the new sewer lines represents a large portion of the sewer upgrade work for the Waimalu system since many existing lines must be completely replaced rather than rehabilitated to rectify pipeline slope problems caused by settlement. Construction of new sewers in the lower portion of Waimalu sewer basin will be challenging due to difficult site conditions. These conditions include soft soils, high water table, and substantial amount of existing utilities.

Alternatives for construction of new sewers that were evaluated included the following:

- Conventional open trench construction
- Microtunneling
- Directional drilling

A brief evaluation of the alternatives is presented below.

1. Conventional Open Cut Trench Construction

Conventional open cut trench construction was determined to be the most appropriate and cost-effective construction method for most if not all of the new Waimalu sewers. Other "trenchless" sewer construction methods are generally either not appropriate or

not anticipated to be cost-effective. Despite significant challenges that are associated with the construction of the deeper sewer lines, the open cut trench method is applicable to the Waimalu project for the following reasons:

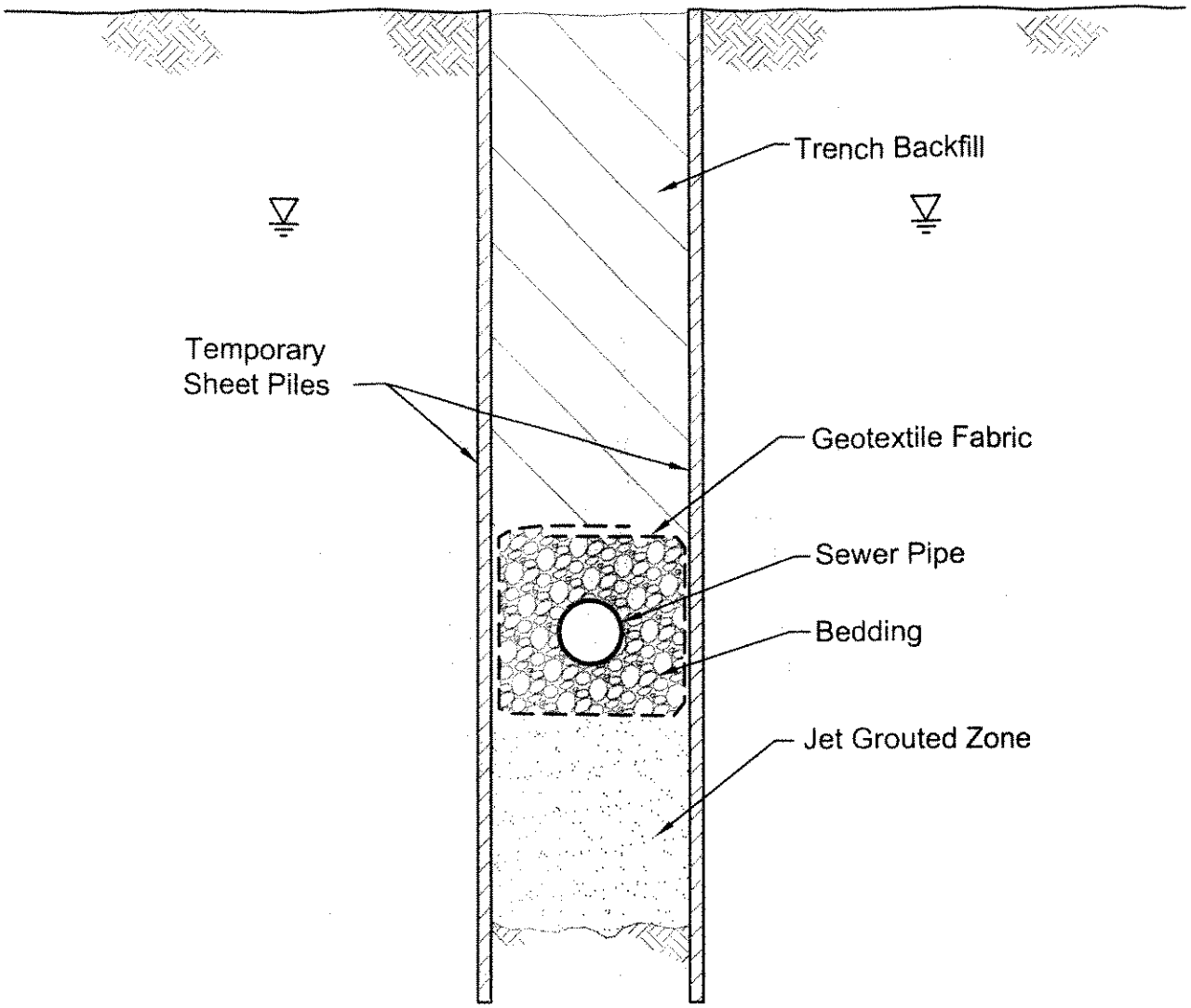
- A large portion of the new sewers is relatively shallow, with most pipe inverts typically ranging from 6 to 10 feet deep.
- The majority of the sewers are generally located within accessible roads and easements.
- Installation of new house sewer laterals also using open trench construction will likely be required in many cases to replace existing laterals.
- Contaminated soils are not expected to be encountered.
- Extra care can be exercised in excavating near other utilities.

The disadvantages of open cut trenching include the following:

- Difficulty and high cost of contending with groundwater and soft soils due to the need for considerable shoring, sheet piling, ground improvement, dewatering and dewatering effluent disposal. Dewatering and installation/removal of sheet piles, if not executed with care, may result in settlement and damage to existing utilities and structures.
- Impacts to and interferences with existing utility lines.
- Noise and dust from the construction operations.
- Disruptions to traffic.

A proposed pipe trench excavation and backfilling concept for the deeper sewer lines in groundwater is shown and described on Figure 4-1. The proposed concept utilizes the installation of temporary sheet piles in combination with a jet grouted zone below the pipe bedding material. Jet grouting involves in-situ mixing of soils with a stabilizer such as neat cement grout to improve its structural properties and reduce its permeability. The jet grouted zone minimizes intrusion of groundwater into the trench and provides improved subgrade support for the trench.

Based on an assessment of the subsurface conditions, the use of conventional piles, micropiles or jet grouted columns, or other deep foundation support for the new sewer lines was not recommended. Due to continuing ground settlement, differential movements would likely develop between the pipeline supported on deep foundations and the adjacent street and house sewer laterals. Potential problems include pipeline distress due to the tendency for the pipeline to rise out of the ground as subsidence



GENERAL STEPS:

1. Excavate shallow trench along new sewerlines.
2. Install temporary steel sheet piles.
3. Jet grout inside the sheet piles below pipe bedding.
4. Excavate inside sheet piles and dewater trench.
5. Install pipe, bedding, and trench backfill.
6. Remove sheet piles.
7. Restore ground surface.

Reference:
Adapted from Pacific
Geotechnical Engineers, 2003.

Hawaii Pacific Engineers	WAIMALU SEWER REHABILITATION AIEA, OAHU, HAWAII	TYPICAL PIPE TRENCH EXCAVATION AND BACKFILLING CONCEPT	FIGURE 4–1

Dr: 5/28/1 PM: KA
SCALE: 1 = 1 OPER: BTY
FILE: 2004D13-11 REVISED: -

occurs and the need to resist large downdrag forces. Deep foundation support would be costly due to the depth to firm substrate in the Waimalu area and would generally be considered cost-prohibitive for the size of lines involved in the project.

2. Microtunneling

Microtunneling is a method of installing underground pipe without trenching. Elimination of trenching reduces disruption to surface improvements and environmental impacts. In microtunneling, hydraulic jacks are used to push specially designed pipes through the ground behind a tunneling shield at the same time excavation is taking place. Excavation is accomplished by a remote controlled laser guided boring machine.

Microtunneling was not considered to be widely applicable to the Waimalu project primarily because of the extensive amount of soft soils in the area and the relatively small size of most of the sewer lines. Microtunneling in very soft soils such as those found in much of the Waimalu basin is generally not viable due to difficulty in controlling the alignment of the microtunneling boring machine. Ground improvement methods such as jet grouting could be employed to make ground suitable for microtunneling but this would add significantly to the cost. Microtunneling is generally most cost-effective for installation of new pipes 36 inches and larger due to the high equipment and mobilization cost. The cost of excavating and shoring the jacking and recovery pits required for microtunneling is also substantial. The largest new proposed sewer line in the Waimalu project is 16-inches in diameter.

According to a noted authority in microtunneling (Cross, 1998), microtunneling is typically cost-effective under the following conditions:

- Pipeline depths greater than 15 feet deep.
- Under busy roads or industrial/commercial areas.
- Under or near major existing buried utilities.
- In unstable ground conditions and below the water table.
- Where settlement is hazardous to property or other utilities (since no dewatering required).

Some of the above conditions such as busy roads, work below the water table and settlement concerns are applicable to the Waimalu site. These factors are offset by the excessively soft soils, moderate line depths, and the large amount of smaller lines with a large number of service connections. Currently, soil conditions are not well defined along possible pipeline routes and other problem soil conditions such as boulders could be encountered in some of the areas. For this project, microtunneling is considered a possible construction alternative that might be used by a contractor in lieu of open cut

trench construction in certain special situations, such for a new sewer line across Kamehameha Highway.

3. Horizontal Directional Drilling

Horizontal directional drilling (HDD) involves using a remotely controlled tunneling machine. A pilot boring along the proposed alignment is first drilled. The hole is then reamed to the required diameter. The new pipe is then pulled into place within the reamed hole.

Like other trenchless technologies, the cost-effectiveness of HDD depends on such factors as distances between entry/exit points, pipe sizes and materials, extent of surface and environmental impacts, subsurface conditions, and number of alignment changes. One of the limitations of HDD is the difficulty in precisely controlling the grade of the pipeline. Although current HDD tracking electronics can potentially measure grade in 0.1 percent increments, the use of HDD poses substantial risk for the Waimalu project due to the soft and variable nature of the soils and the low sewer slopes required due to flat topography. Like microtunneling, extensive excavation at a significant additional cost would be required to connect service laterals to the new sewer line.

4. Evaluation of Alternative Construction Methods

Based on the above assessments, open trench construction for new sewer lines was determined to generally be the most appropriate method for constructing new sewers in the Waimalu project. The use of microtunneling in conjunction with ground improvement technology may be given further consideration for the larger and deeper sewer line crossing Kamehameha Highway.

C. ALTERNATIVE DESIGN OPTIONS TO MINIMIZE SETTLEMENT PROBLEMS

Several design options were evaluated to help minimize future sewer settlement problems in the Waimalu basin. The primary objective is to minimize the extent of future differential settlement to avoid sewer line sag and slope problems. A secondary objective is to minimize sewer clogging, reduced hydraulic capacity, and other problems in the event that differential settlement does occur in the future.

The following design options were evaluated for the Waimalu project:

- Use of higher pipe slope
- Use of larger pipe size
- Pipe material and joints options

- Pipe support and backfill options
- Fiberglass manholes

A brief evaluation of the options is presented below.

1. Higher Pipe Slope

The new sewers may potentially experience some differential ground settlement problems since some settlement is expected to continue to occur in the future. To minimize future sewer slope problems, the new sewers are proposed to be provided with slopes steeper than the minimum required slope where practicable. This would help promote maintenance of positive sewer line slopes despite some differential settlement in the future. The amount of additional slope that can be provided, however, is limited by the sewer elevation of the downstream connection point.

2. Larger Pipe Size

In addition to increasing the pipe slope, future problems with differential settlement could be partially mitigated by using a larger pipe size. For replacement lines with low slopes in areas prone to ongoing settlement, 10-inch diameter lines will be considered for use in lieu of the normal minimum 8-inch lines. A 10-inch line would essentially provide two additional inches of headroom before the pipe flows full and experiences problems with trapping of floating grease and debris.

3. Pipe Material and Joint Options

The existing vitrified clay pipe (VCP) sewers in the lower Waimalu basin are experiencing significant sagging, joint separation, cracking and other problems associated with differential settlement. In poor soils, VCP is somewhat prone to sagging and other problems due to the relatively short three to six foot pipe lengths and the substantial weight of the pipe. The large number of joints increases the potential for groundwater infiltration problems. VCP pipes are also subject to joint problems due to the brittle nature of the pipe material and the close spacing of joints.

To minimize future sagging and joint problems in the new sewers, it is recommended that polyvinyl chloride (PVC) or HDPE (high density polyethylene) pipe be used. The lighter weight of the thermoplastic pipe should reduce the propensity for the pipe to settle within the sewer trench. PVC pipes, which are typically manufactured in 20-foot sections, should have substantially less structural and infiltration problems at the joints due to the wider spacing and watertightness of the joints, and greater flexibility of the pipe material. HDPE would also have minimal joint problems since pipe sections are fusion welded to essentially eliminate joints. PVC or HDPE pipe should also develop better self-cleansing scouring velocities than VCP pipe due to the smoother pipe interior.

4. Pipe Support and Backfill Options

The presence of very thick, weak and compressible marsh deposits appear to be still consolidating under the weight of the fill material used to develop the area. Continuing differential settlement is expected and providing suitable support for the new sewer lines and manholes is a concern. A subgrade treatment program, consisting of overexcavating a portion of weak deposits below the replacement sewer lines and manholes, and replacing the excavated material with subbedding material wrapped in geotextile fabric, is anticipated to be required. Stabilization of the pipeline and manhole subgrade by soil improvement methods, such as jet grouting, is anticipated to be performed in many areas with poor soils to reduce the risk of future settlement problems. Concrete pipe cradles may also be used to provide improved pipe support.

The weight of the trench backfill contributes to the overall settlement in the lines. To reduce the potential for settlement due to heavier backfill material, jet grouted soil, and/or concrete cradles/jackets, the use of lightweight fill material, such as Elastizell, is proposed where appropriate. The use of flowable fill/Controlled Low Strength Material (CLSM) backfill is also proposed to reduce trench backfill settlement and provide a firm and durable base for the asphalt concrete pavement.

5. Fiberglass Manholes

Due to wheel loads bearing on the top of manholes and the soft subsoils, differential settlement occurring at the manholes is a concern. The potential for settlement at manholes is proposed to be reduced by the use of lightweight fiberglass manholes constructed of fiber-reinforced polyester (FRP) in lieu of precast concrete manholes. Fiberglass manholes weigh approximately 60 pounds per vertical foot compared to 880 pounds per vertical foot for precast concrete manholes. The fiberglass manholes are designed to withstand a 16,000 pound vertical wheel load to meet manhole industry standards. Fiberglass manholes are inherently highly corrosion resistant and will help to minimize infiltration since there are no seams or joints.

6. Evaluation of Alternatives to Minimize Settlement Problems

Based on the above discussions, special design features discussed above are proposed to be incorporated to the extent possible to minimize potential problems associated with settlement.

D. ALTERNATIVES TO RESOLVE LOWER BASIN SEWER PROBLEMS

The Waimalu Stream inverted siphon and numerous sags in the sewer lines are major causes of the problems in the lower portion of the Waimalu sewer system. Alternatives evaluated to eliminate or minimize problems included:

- Alternative 1 -- No action (maintain frequent cleaning).

- Alternative 2 -- Periodic flushing of the existing inverted siphon and/or sewer lines.
- Alternative 3 -- Construction of a new inverted siphon or sewer across Waimalu Stream.
- Alternative 4 -- Reactivation of the existing Waimalu Tract Wastewater Pump Station (WWPS) and construction of a new force main.
- Alternative 5 -- Reconfiguration of sewer system with a new trunk sewer across Kamehameha Highway at Hekaha Street
- Alternative 6 – Installation of a new low pressure sewer system
- Alternative 7 -- Installation of a new vacuum sewer system

A brief evaluation of the alternatives is presented below.

1. Alternative 1 -- No Action

The "no action" alternative would involve continuing the frequent cleaning of the sewer lines and Waimalu Stream inverted siphon to maintain a satisfactory degree of hydraulic capacity and minimize clogging and spills. This alternative, while potentially attractive from a cost standpoint, was not considered viable for the following reasons:

The Waimalu sewer system experiences spills and trouble calls periodically despite intense maintenance efforts. The spills are a hazard to public health and the environment. Sewage backups into homes are a significant hardship on the affected residents. Heavy maintenance requirements for the Waimalu system reduces availability of manpower and equipment for routine maintenance and responding to other wastewater system needs.

Pipe defects in the Waimalu system cause heavy dry and wet weather infiltration and inflow that burdens downstream facilities. The additional flow results in increased pumping and treatment costs.

Some ground settlement is expected to continue in the future and problems with line sags, surcharging and hydraulic capacity limitations may increase slightly with time.

2. Alternative 2 -- Periodic Flushing of Existing Inverted Siphon and Sewer Lines

The Waimalu Stream inverted siphon experiences significant clogging problems due to insufficient flow velocity in the depressed sewer lines during normal dry-weather flow. The low velocity is due to the configuration of the lines and the lack of sufficient hydraulic gradient and flow. There are also many locations in the Waimalu sewer basin with insufficient pipe velocities due to problems with line sags and inadequate slopes.

This alternative attempts to limit the need for major new sewer lines through periodic high volume flushing of the inverted siphon and sewer lines. This could be accomplished by providing an automated system in which sufficient flushing water would be discharged for a short duration at selected locations either via pumping or gravity flow from a storage tank. This unconventional alternative was developed primarily for flushing of the inverted siphon but could potentially be adapted to flushing of sewers as well.

The source of the flushing water could be wastewater if available in sufficient quantities, or water from other sources such as potable water, groundwater or drainage/stream water. The flushing would be performed at suitable intervals, such as one or more times per day, to substantially reduce the amount of sediments and grease accumulating in the inverted siphon lines and sewers.

The advantages of the line flushing alternative are as follows:

- The existing inverted siphon lines and many or all of the existing sewer line can continue to be utilized without the need for major widespread reconstruction of the sewer system.
- There are potential capital and operation and maintenance (O&M) cost savings compared to other alternatives.
- The devices require minimal power and if properly designed, should require minimal maintenance.

The disadvantages of this alternative are as follows:

- The use of stored wastewater for flushing would potentially result in odor problems. The use of other sources of flushing water will increase the volume of wastewater requiring transmission and treatment and result in additional capital and O&M costs.
- Flushing of the lines will not reduce the high amount of infiltration and inflow (I/I) that is entering the system. Subsurface exfiltration from the sewer system is also a concern. There would be additional capital costs to rehabilitate the existing sewer lines to reduce I/I and exfiltration.
- The frequency, quantity and duration of the flushing water discharges for effective control of grease and sediments are uncertain. Grease may still accumulate on the pipe walls due to low velocity conditions that would occur most of the time. The extent of reductions in sewer cleaning is uncertain.

- Regular periodic inspection and maintenance of the flushing system will be required.

Based on the significant disadvantages of the flushing alternative compared to its advantages, the line flushing alterative was not considered viable.

3. Alternative 3 -- Construction of New Inverted Siphon or Sewer Across Waimalu Stream

The existing Waimalu Stream inverted siphon has inherent clogging problems that cannot be readily resolved with the pipelines currently in place. Given the options of either a new inverted siphon or conventional gravity sewer, the preferred choice would be the gravity sewer. Inverted siphon sewers are prone to clogging problems, particularly those that service small basins with low flows and that have limited hydraulic gradient.

The construction of either a new inverted siphon or conventional gravity sewer across Waimalu Stream would be possible but difficult. This alternative would be potentially cost-effective if directional drilling could be used to construct the line. The feasibility of using directional drilling is uncertain due to the soft soil conditions and space constraints for staging of operations. For the gravity sewer line, the probable inability to maintain adequate grade control in the soft soils is a major limitation. Horizontal directional drilling would be more suited to the inverted siphon option where precise grade control is not critical.

Due to inherent constructability issues and the availability of other viable alternatives, the alternative of constructing either a new inverted siphon or gravity sewer across Waimalu Stream was not selected for further detailed evaluation. Although an inverted siphon could potentially be cost-effectively constructed using horizontal directional drilling technology, there are significant performance concerns with respect to clogging. Construction of a gravity sewer across Waimalu stream would be costly and difficult since trenchless methods do not appear to be feasible.

4. Alternative 4 -- Reactivation of Existing Waimalu Tract Wastewater Pump Station

The abandoned Waimalu Tract Wastewater Pump Station is located at the site of the existing Olepe Loop Drainage Pump Station and the upstream end of the inverted siphon (see Figure 2-2). Refurbishing and reactivating the wastewater pump station and construction of a new force main across Kamehameha Highway would eliminate the need to rely on the Waimalu Stream inverted siphon. An above-grade force main could be installed at the base of the floodwall of Waimalu Stream and under the Waimalu Stream bridge at Kamehameha Highway. New sewer lines would be constructed in the lower basin area to provide positive line slopes.

Advantages of this alternative include:

- Improved pipe slopes would eliminate clogging/hydraulic capacity problems.
- The use of a pump station and force main facilitates conveying the Waimalu wastewater across Kamehameha Highway since the force main can be constructed under the Kamehameha Highway Waimalu Stream bridge.
- The existing inverted siphon could be used as a backup overflow line during power outages and pump malfunctions. Flow from the pump station could be used to flush the inverted siphon pipes as necessary to keep it clean for backup use.
- The need for a new inverted siphon or sewer line under Waimalu Stream is eliminated.

Disadvantages of this alternative include:

- Difficult and costly construction of new sewers due to groundwater, soft soils and existing utilities. The proposed new sewers are deeper than the existing sewers to provide improved line slopes.
- Additional cost and manpower required for construction and maintenance of the wastewater pump station and force main.
- Despite the use of special sewer design features to minimize settlement, some differential settlement could still occur.

The estimated capital cost of Alternative 4, including the new sewer lines, rehabilitated pump station and new force main, is $15.6 million. The estimated annual operation and maintenance cost, including maintenance of the pump station, upkeep of the inverted siphon as a backup, and average sewer cleaning frequency of every two years, is $89,000.

5. Alternative 5 -- New Gravity Trunk Sewer Across Kamehameha Highway

This alternative eliminates the need for the inverted siphon by reconfiguring the sewer system to provide a new gravity trunk sewer along Hekaha Street (see Figure 1-2). Rather than using a pump station as in the previous alternative, the wastewater would be conveyed across Kamehameha Highway via a new 16-inch gravity sewer line.

Advantages of this alternative include:

- Improved pipe slopes would eliminate clogging/hydraulic capacity problems.
- No maintenance of pump station and force main facilities.

- Eliminates need for new inverted siphon or sewer line under Waimalu Stream.

Disadvantages of this alternative include:

- Difficult and costly construction of new sewers due to groundwater, soft soils and existing utilities. Lines at the downstream end would be deeper than that of Alternative 4 and there would be a need to cross Kamehameha Highway.

- Despite the use of special sewer design features to minimize settlement, some differential settlement could still occur.

The estimated capital cost of this alternative is $14.9 million. The estimated annual operation and maintenance cost, which would be limited to routine sewer cleaning and maintenance, is $24,000.

6. Alternative 6 – New Low Pressure Sewer System

The use of low-pressure sewer system was considered due to the concern with future settlement problems with conventional gravity sewers. Low pressure sewers were successfully used in the Mapunapuna area, which has similar difficult site conditions such as soft alluvial soils and high water table.

Low pressure sewer systems consist of small pumping stations located at the individual homes that discharge to a network of small diameter pressure sewers. Grinder pumps are utilized to macerate the larger solids and minimize the potential for clogging of the small diameter pressure sewers that typically range from 1-1/4 to 4 inches in diameter. Since all the flow is pumped, the system does not rely on sloped pipes to convey flow.

Under this alternative, it was assumed that both the capital and operation and maintenance costs would be funded by the City. The homeowner would be responsible for electrical power to operate the pumping system.

This alternative only proposes to service the lower problems areas of the Waimalu system with low pressure sewers. The upper basin above H-1 Freeway would continue to be serviced by conventional gravity sewers. It was assumed that a pump station would be constructed under the H-1 freeway viaduct and that a new force main would be constructed to pump the flow to the Newtown sewer system to avoid the need for a costly new gravity line through the lower basin.

Some of the advantages of utilizing the low pressure sewer systems include:

- Cost savings for sewer lines due to use of small diameter PVC or HDPE piping buried in shallow trenches without manholes. The use of shallow trenches eliminates or minimizes dewatering costs and facilitates pipe repairs.

- Pipes are not required to be accurately placed and the potential for future problems resulting from differential settlement is eliminated. Construction is simplified as piping can be located and adjusted to clear obstacles such as other utilities lines.

- Significant reduction of infiltration and inflow.

Disadvantages and limitations of using the low pressure sewer system are as follows:

- A separate pump station and force main is required for the upper service area.

- The large number of pumping units will require substantial maintenance effort, particularly as the units age. Costs will be incurred for furnishing replacement pumps and maintaining an inventory of spare pumps.

- There will likely be strong opposition from homeowners due to inconveniences associated with installing and monitoring the pumping system, and general lack of understanding of the proposed system. Since there is an existing sewer system already servicing the area, residents that have not experienced significant sewer problems would most likely not support the new system.

- There will be a general lack of space for the pumps and significant impacts to existing property improvements due to Waimalu's small fully developed residential lots.

- Upgrade of the residential electrical systems will likely be required for the pumps. The electrical systems servicing the older homes are probably operating near their capacity due to the heavy demands of modern home appliances and products.

- The potential for odors and downstream corrosion is increased due to septic conditions in the low pressure sewer system force mains.

The estimated capital cost of this alternative, including the new low pressure pumping system and the additional pump station and force main for the upper service area, is $12.9 million. The estimated annual operation and maintenance cost, including operation and maintenance of the pumping systems, is $125,000.

7. Alternative 7 – New Vacuum Sewer System

Another collection system technology that can be used as an alternative to conventional gravity sewers is vacuum sewers. Vacuum sewer systems offer many benefits similar to low pressure sewer systems, such as lower sewer line burial depth and minimal concerns with pipe slope and settlement problems.

Vacuum sewers convey flow by creating a differential pressure between the open atmosphere and lower pressure created within the collection system. The vacuum system consists of vacuum valve pits typically serving one to four residences, a network of vacuum collection system piping and division valves, and a central vacuum station. The central vacuum station consists of vacuum pumps to create the vacuum in the collection lines, a receiving tank to hold the collected wastewater, and wastewater pumps to pump the collected wastewater to downstream facilities. Line sizes for vacuum sewer collection systems typically range from 4-inches to 10-inches in diameter. The collection lines for vacuum systems are typically installed at shallow depths ranging from 3 to 5 feet deep.

Advantages of the vacuum sewer system alternative for the lower Waimalu area include:

- Cost savings for sewer lines due to use of smaller diameter PVC piping buried in shallow trenches without manholes. The use of shallow trenches eliminates or minimizes dewatering costs and facilitates pipe repairs.
- The system should be capable of tolerating differential settlement since pipe slope is less critical than for conventional gravity systems. Construction is simplified as pipes can be positioned to clear obstacles such as other utilities lines.
- Significant reduction of infiltration and inflow.
- Air valves are pneumatically operated and does not require power. Power is only required at the vacuum pump station and therefore upgrade of residential power systems is not required. Standby power can be provided at the vacuum pump station.
- Air valve pits are smaller than lower pressure pump stations and can be located outside private property. One air valve pit can service up to four homes.
- Long term operation and maintenance costs and effort is expected to be less than low pressure sewer systems.
- Due to air being introduced into the system and because the system operates under vacuum, there is less potential for odor problems.

Disadvantages and limitations of using the vacuum sewers system are as follows:

- Vacuum sewer systems are not capable of handling large concentrated flow. Two conventional pumping systems would be required for the Waimalu Shopping Center and apartments, and the upper service area.

- Vacuum systems can experience operational problems such as valve problems, vacuum pump malfunctions and "waterlogging." Frequent checks of valve pits and the vacuum pumping station are required.

- Maintenance of the vacuum pump station as well as two conventional pumping stations will be required.

- There are no known projects that have used vacuum sewers in Hawaii and therefore there is limited local experience and knowledge on the design, construction and maintenance of vacuum collection systems.

- The estimated capital cost of this alternative, including the new vacuum sewer collection system and the two additional conventional pumping systems for the large flows, is $16.4 million. The estimated annual operation and maintenance cost, including maintenance of the pumping systems, is $168,000.

8. Evaluation of Alternatives for Lower Basin Problems

A comparative summary for the two conventional sewer alternatives (Alternatives 4 and 5), low pressure sewer alternative (Alternative 6), and vacuum sewer alternative (Alternative 7) is presented in Table 4-1. The alternatives were compared on the basis of capital, O&M and life cycle costs; performance reliability, ease of implementation and environmental/social impact. Other alternatives not included in Table 4-1 were not considered sufficiently viable for detailed evaluation.

Based on evaluation of the projected costs and non-monetary factors, the installation of new gravity sewer lines (Alternative 5) was selected as the recommended alternative. This alternative has the significant advantages of requiring only routine maintenance of gravity sewers and good anticipated performance and reliability.

TABLE 4-1
COMPARISON OF ALTERNATIVES

Lower Basin Sewer Alternative	Costs	Reliability and Performance	Ease of Operation	Ease of Implementation	Short-Term Construction Impacts	Long-Term Environmental and Social Impacts
Alternative 4 - Reactivation of the Waimalu Tract WWPS	Capital Cost: $15,620,000 Annual Operating Cost: $89,000 Total Present Worth: $16,960,000 Annualized Cost: $1,128,000	Good – Substantial reduction in spill potential and maintenance due to elimination of sags and reverse slopes. Although this alternative relies on a pump station, wetwell overflows can be directed to existing inverted siphon.	Good – Requires operation of network of gravity sewers and one conventional pump station. Normal periodic inspection and cleaning of sewers is required.	Poor– Deep excavation in soft soils and groundwater is required. There will be a need for sheet piling and dewatering. Traffic disruption and some excavation related impacts to surrounding utilities and homes can be expected. Pump station reactivation and new force main work should not be difficult.	Poor – Major construction involving deep trenching, sheet piling, jet grouting and heavy equipment is envisioned taking place within the streets. Noise, dust, and traffic impacts will be significant in the vicinity of the work.	Good – Project should minimize sewage spills and backups to minimize impacts to water quality and public health. Less frequent sewer cleaning will result in less traffic disruptions and noise to residents. City sewer maintenance crews will be able to focus on other problem areas. Lower infiltration and inflow will reduce downstream treatment and pumping costs and possibly reduce or defer downstream infrastructure upgrade needs. The reactivated Waimalu Tract pump station will result in some consumption of electrical power, manpower and other resources.
Alternative 5 - New Trunk Sewer Across Kamehameha Highway	Capital Cost: $14,930,000 Annual Operating Cost: $24,000 Total Present Worth: $15,290,000 Annualized Cost: $1,017,000	Very Good – Substantial reduction in spill potential and maintenance due to elimination of sags and reverse slopes. Alternative does not require a pump station.	Very Good – Requires only operation of network of gravity sewers. Normal periodic inspection and cleaning of sewers is required.	Poor– Deep excavation in soft soils and groundwater is required. There will be a need for sheet piling and dewatering. Traffic disruption and some excavation related impacts to surrounding utilities and homes can be expected. Traffic impacts during construction of trunk sewer across Kamehameha Highway are a significant concern.	Poor – Major construction involving deep trenching, sheet piling, jet grouting and heavy equipment is envisioned taking place within the streets. Noise, dust, and traffic impacts will be significant in the vicinity of the work. Construction will impact Kamehameha Highway.	Excellent – Project should minimize sewage spills and backups to minimize impacts to water quality and public health. Less frequent sewer cleaning will result in less traffic disruptions and noise to residents. City sewer maintenance crews will be able to focus on other problem areas. Lower infiltration and inflow will reduce downstream treatment and pumping costs and possibly reduce or defer downstream infrastructure upgrade needs. No power is required for pumping.

TABLE 4-1
COMPARISON OF ALTERNATIVES

Lower Basin Sewer Alternative	Costs	Reliability and Performance	Ease of Operation	Ease of Implementation	Short-Term Construction Impacts	Long-Term Environmental and Social Impacts
Alternative 6 - Low Pressure Sewers	Capital Cost: $12,870,000 Annual Operating Cost: $125,000 Total Present Worth: $14,750,000 Annualized Cost: $981,000	Moderate – Substantial reduction in spill potential and maintenance due to elimination of sags and reverse slopes. Alternative relies on a large number of small grinder pump stations.	Moderate to Poor – Requires operation and maintenance of a large number of grinder pump stations. Grinder wetwell has some flow storage capacity during malfunctions and power outages.	Poor – A large number of homeowners are likely to oppose the construction of low-pressure grinder pumps in their lots. Electrical upgrades at individual homes will likely be required for the grinder pumps. An extensive network of new low-pressure force main will be required. Due to the shallower depth and greater flexibility in locating these lines, construction impact should be substantially less than conventional gravity sewers. Land/easement negotiation with State DOT required for proposed new pump station under freeway.	Poor – Major impacts to homeowners due to construction of grinder pump station in their properties and the probably need for electrical upgrades at each home. Extensive network of new low-pressure sewers will be required. Construction impacts in the streets should be less than conventional sewers, however, due to shallower depth and smaller size of lines. Noise, dust, and traffic impacts will occur in the vicinity of the work.	Fair – Project should minimize sewage spills and backups to minimize impacts to water quality and public health. Less frequent sewer cleaning will result in less traffic disruptions and noise to residents. City sewer maintenance crews will be able to focus on other problem areas. Lower infiltration and inflow will reduce downstream treatment and pumping costs and possibly reduce or defer downstream infrastructure upgrade needs. Homeowner will need to monitor grinder pumps for proper operation and have repairs performed as required.
Alternative 7 - Vacuum Sewers	Capital Cost: $16,420,000 Annual Operating Cost: $168,000 Total Present Worth: $18,940,000 Annualized Cost: $1,260,000	Moderate – Substantial reduction in spill potential and maintenance due to elimination of sags and reverse slopes. Alternative relies on a several pumping stations and proper operation of numerous valve pits. Pumping stations can be provided with emergency generators.	Moderate to Poor – Requires operation and maintenance of a vacuum pump station, two small wastewater pump stations and a substantial number of vacuum air valves. Overflow from the air valve pits require timely response to malfunctions.	Moderate – There may be some opposition due to the use of technology unproven in Hawaii and that has some potential for causing more sewage backups if the system is not properly design, operated and maintained. Land/easement negotiation with State DOT required for proposed new pump station under freeway. Additional land/easement required for shopping center/apartment pump station and force main.	Poor – Some impacts to homeowners due to connection of laterals to new air valve pit in front of lots and installation of air intake vent on homeowner's lateral. Extensive network of new low-pressure sewers will be required. Noise, dust, and traffic impacts will occur in the vicinity of the work.	Fair – Project should minimize sewage spills and backups to minimize impacts to water quality and public health. Less frequent sewer cleaning will result in less traffic disruptions and noise to residents. City sewer maintenance crews will be able to focus on other problem areas. Lower infiltration and inflow will reduce downstream treatment and pumping costs and possibly reduce or defer downstream infrastructure upgrade needs.

Note: Annual costs based on 40 years at 6% discount rate and no salvage value.

CHAPTER 5
DETERMINATION

A. DETERMINATION

This assessment for the proposed Waimalu Sewer Rehabilitation project shows that no significant impact on the environment will occur and an Environmental Impact Statement is not required. In accordance with the provisions of Chapter 343, Hawaii Revised Statutes, a Finding of No Significant Impact (FONSI) is therefore deemed to be in order.

B. SUPPORTING RATIONALE

Reasons supporting the above determination include:

1) **The proposed action does not involve an irrevocable commitment or loss of or destruction of any natural or cultural resources.**

   There are no known significant natural or cultural resources associated with the project site. Past development of the project area has already substantially altered the site from its natural condition.

2) **The proposed action does not curtail the range of beneficial uses of the environment.**

   The proposed project is consistent with land use plans, policies and controls and will not curtail beneficial uses of the environment in the area.

3) **The proposed action is in concert with the State's long-term environmental policies, goals and guidelines as expressed in Chapter 344, HRS, and any revisions and amendments thereto, court decisions and executive orders.**

   No long-term adverse environmental conflicts are foreseen. The project will have the beneficial impact of reducing the risk of wastewater spills and adverse water quality impacts that result from spills.

4) **The proposed action does not substantially affect the economic or social welfare of the community or State.**

   There will be some positive economic impacts related to short-term construction related activities. The project will have beneficial long-term impacts to the economic and social environment by providing properly functioning wastewater collection infrastructure and reducing sewer maintenance costs.

5) **The proposed action does not have significant adverse effects on public health.**

Short-term impacts associated with construction will have minimal potential for affecting public health. Construction activities will be regulated to minimize noise, dust and exhaust emissions.

The project will have the beneficial impact of reducing the potential for wastewater spills and the associated risks to public health.

6) **The proposed action does not involve substantial secondary impacts, such as population changes or effects on public facilities.**

The proposed project will not result in an increase of population in the area. The project will not have significant adverse impacts on other public facilities such as roads, electrical power and water system.

7) **The proposed action does not involve a substantial degradation of environmental quality.**

The proposed new sewers will be located below grade and the existing physical aspects of the project site and surrounding area will be preserved. The project will reduce the emission of wastewater odors due to reduction of sewer cleaning frequency and the risk of sewage spills.

Short-term construction impacts will be mitigated to meet regulatory requirements through implementation of Best Management Practices for such areas as erosion control, dewatering effluent treatment, and noise attenuation.

8) **The proposed action is individually limited and cumulatively, does not have a significant effect upon the environment or involve a commitment for larger actions.**

The project is limited in scope to the proposed rehabilitation work on an existing sewer system. The project will eliminate adverse impacts on the environment resulting from significant sewer line deficiencies.

9) **The proposed action does not substantially affect rare, threatened or endangered species or habitats.**

Based on a review of available information, no rare, threatened or endangered flora or fauna are anticipated to be found within the project site.

10) **The proposed action does not detrimentally affect air, water quality, or ambient noise levels.**

Short-term impacts on air, water quality and noise may occur during the construction period, but will be mitigated by construction practices and regulated by the project's plans and specifications. The project will reduce noise and odors by reducing the frequency of sewer maintenance activities. The project will have the beneficial impact of reducing the risk of wastewater spills and the associated adverse water quality impacts.

11) **The proposed action does not affect 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 or coastal waters.**

Measures to prevent damage from flooding and to prevent polluted runoff from entering the drainage system and Waimalu Stream during flood events will be required to be implemented by the construction contractor. Other than flooding, the project site is not environmentally sensitive.

12) **The proposed project does not substantially affect scenic vistas and viewplanes identified in County or State plans or studies.**

The project site is not a part of a unique or valuable scenic resource. The new sewer lines will be located underground.

13) **The proposed action does not require substantial energy consumption.**

The project should decrease energy consumption due to the reduction of groundwater infiltration and rainwater inflow that results in expenditure of energy for pumping and treatment in downstream facilities. There should also be a reduction in fuel consumption due to reduced sewer maintenance requirements.

CHAPTER 6
PERSONS AND AGENCIES CONTACTED

A. PRE-ASSESSMENT CONSULTATION

Pre-assessment consultation correspondence and other relevant consultation information associated with the preparation of this environmental assessment are presented in Appendix A. Pre-assessment consultations included: 1) written correspondence to various agencies and community members soliciting input, 2) presentation at the Aiea Neighborhood Board No. 20 (June 14, 2004), and 3) meeting with Senator David Ige (June 4, 2004).

Parties contacted for pre-assessment consultation input are listed below. Parties that provided written or other input are indicated by an "*". Parties that were sent responses to significant comments are marked with a "+". Included in Appendix A are the following pre-assessment consultation documents: 1) sample copy of a typical letter requesting input on the project, 2) copies of correspondence and meeting summaries (arranged in order of the agencies/persons listed below).

1. Federal Government

Department of the Interior, Fish and Wildlife Service
U.S. Army Engineer District, Honolulu, Regulatory Branch*

2. State Government

Department of Health, Office of Environmental Quality Control*
Department of Health, Environmental Management Division, Clean Water Branch
Department of Health, Environmental Management Division, Wastewater Branch*
Department of Health, Environmental Planning Office*
Department of Land & Natural Resources, Land Division
Department of Land & Natural Resources, State Historic Preservation Division*
Department of Transportation*+
Office of Hawaiian Affairs

3. County Government

Department of Environmental Services
Department of Facility Maintenance
Department of Planning & Permitting*+
Department of Transportation Services*+
Honolulu Board of Water Supply*

4. Elected Officials

Senator David Ige, District 16*
Representative Blake Oshiro, District 33
Representative Mark Takai, District 34*+
Council Member Gary H. Okino, District VIII, City Council

5. Others

William B. Clark, Chair, Aiea Neighborhood Board No. 20*+
(copies of initial letter to all other board members)
Ms. Claire Tamamoto, Aiea Community Association
Mr. Albert K. Fukushima, Chair, Pearl City Neighborhood Board No. 21
Mr. Charles K. Kapua, President, Pearl Harbor Hawaiian Civic Club
Ms. Beverly Martin, Manager, Zippy's Waimalu
Mr. Wallace Kazama, Waimalu Shopping Center/Kazama Enterprises, Inc.
Mr. Patrick Aiu, Cutter Ford Aiea
Honolulu Ltd., Owner, 98-33 Kamehameha Highway
MAGBA, Inc., Owner, 98-33 Kamehameha Highway
Mr. Nathan Boner, Resident, 98-160 Pahemo Street

Landowners/Residents of parcels with affected sewer easements at the following addresses:

Hekaha Street: 98-140, 98-144, 98-267, 98-275
Kanuku Street: 98-253, 98-257, 98-261, 98-265
Moanalua Road: 98-871, 98-875, 98-879, 98-833, 98-887, 98-891
Pahemo Street: 98-153, 98-157

Landowners/Residents of all other parcels within the project area (letters addressed to either the resident/property manager or owner for multi-family apartment complexes)

B. CONSULTATION DURING PREPARATION OF THE FINAL ENVIRONMENTAL ASSESSMENT

Copies of the draft environmental assessment were mailed or delivered to the following agencies, organizations and other interested parties listed below. Parties consulted during the pre-assessment phase that were not included on the distribution list were notified of the availability of the Draft Environmental Assessment at the Aiea Public Library and sent a copy if one was requested. Availability of the environmental assessment was published in the November 23, 2004 edition of The Environmental Notice by the State Office of Environmental Quality Control (OEQC).

The OEQC public review period ended December 23, 2004. The deadline for comments for the Aiea Neighborhood Board and Waimalu residents was extended to January 24, 2005 since no meeting of the Aiea Neighborhood Board was held in December of 2004. A total of

thirteen comment letters were received. Copies of the comment letters and the responses prepared by the applicant are presented in Appendix B. A presentation on the project was made at the January 10, 2005 meeting of the Aiea Neighborhood Board meeting.

In the list of parties presented below, parties that provided written comments are indicated by an "*". Copies of the comment and response letters are presented in Appendix B in the order of the list presented below. Also included in Appendix B are excerpts of the Neighborhood Board meeting minutes.

1. Federal Government

Department of the Interior, Fish and Wildlife Service
U.S. Army Engineer District, Honolulu, Regulatory Branch

2. State Government

Department of Business, Economic Development and Tourism, Office of Planning
Department of Health, Office of Environmental Quality Control (4 copies)*
Department of Health, Environmental Health Services Division, Noise, Radiation and Air Quality Branch*
Department of Health, Environmental Management Division, Clean Water Branch
Department of Health, Environmental Management Division, Wastewater Branch*
Department of Health, Office of Hazard Evaluation and Emergency Response
Department of Land & Natural Resources, Land Division (5 copies)*
Department of Land & Natural Resources, State Historic Preservation Division
Department of Transportation
Office of Hawaiian Affairs
University of Hawaii at Manoa Environmental Center*
Aiea Public Library

3. County Government

Department of Environmental Services
Department of Facility Maintenance*
Department of Planning & Permitting (5 copies)*
Department of Transportation Services*
Honolulu Board of Water Supply*
Fire Department*
Honolulu Police Department*

4. Elected Officials

Senator David Ige, District 16
Representative Blake Oshiro, District 33
Representative Mark Takai, District 34*

Council Member Gary H. Okino, District VIII, City Council

5. Utilities

AT&T
Hawaiian Electric Company
Oceanic Time Warner Cable
The Gas Company
Verizon Hawaii*

6. Community Associations and Others

William B. Clark, Chair, Aiea Neighborhood Board No. 20, and all other board members
Ms. Claire Tamamoto, Aiea Community Association
Mr. Albert K. Fukushima, Chair, Pearl City Neighborhood Board No. 21
Mr. Charles K. Kapua, President, Pearl Harbor Hawaiian Civic Club
Ms. Beverly Martin, Manager, Zippy's Waimalu
Mr. Wallace Kazama, Waimalu Shopping Center/Kazama Enterprises, Inc.
Mr. Patrick Aiu, Cutter Ford Aiea

CHAPTER 7
REFERENCES

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State of Hawaii, Department of Land and Natural Resources, Commission on Water Resource Management, "Oahu Water Management Plan," March 1990.

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Appendix A

Pre-Assessment Consultation Correspondence and Documentation

SAMPLE LETTER REQUESTING INPUT

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

June 1, 2004

Mr. Eric Crispin, Director
City and County of Honolulu
Department of Planning & Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

SUBJECT: Waimalu Sewer Rehabilitation
Pre-assessment Consultation for Environmental Assessment
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65

Hawaii Pacific Engineers, Inc. (HPE), on behalf of the City and County of Honolulu Department of Design and Construction, is preparing an environmental assessment for rehabilitation of the sewer system in the Waimalu area. HPE is currently soliciting pre-assessment consultation comments on this project.

Background Information

The Waimalu Sewerage Basin, which encompasses approximately 117 acres, has been identified as one of the high priority basins requiring rehabilitation of existing sewer lines. As shown on Figure 1, the project area is bounded to the south by Kamehameha Highway and extends approximately one-half mile mauka of the H-1 freeway and Moanalua Road. The basin is bounded to the west by Waimalu Stream.

The Waimalu Sewerage Basin consists of gravity sewers serving primarily single-family residential parcels. The Waimalu Shopping Center and a medium-density apartment zone are located at the lower end of the basin. The wastewater generated in the project area is conveyed across Waimalu Stream to the Waimalu Wastewater Pump Station. The majority of the sewers in the basin were constructed in the mid to late 1950's.

The sewers in the lower portion of the basin (south of Moanalua Road) are in poor condition due to ground settlement from consolidation of soft alluvial soils in the area. Differential ground settlement has resulted in cracks, broken/separated joints and other defects in the sewer pipes that allow groundwater and rainwater to enter the lines. During the heavy storms in December 2003 and January 2004, sewage spills and backups occurred in the lower Waimalu basin because high flows caused by infiltration/inflow of rainwater into the sewer lines exceeded the capacity of the system. Flooding of homes with sewage and contamination of stormwater runoff and the Waimalu Stream by sewage overflows result in significant adverse public health and environmental impacts.

Severe ground settlement in Waimalu has also caused undesirable "sags" in the existing sewer lines. This results in the need for constant maintenance to remove grease, fecal material, grit and other debris that accumulate at or near the low points in the line. Frequent sewer cleaning is required to avoid sewage spills and backups due to clogged lines.

Three existing depressed sewer pipes, referred to as an inverted siphon, are used to convey sewage under the Waimalu Stream channel. Similar to the sags in the sewer lines, the inverted siphon is subject to clogging problems and requires frequent maintenance to remove accumulated grease and solids that would otherwise clog the lines and reduce flow capacity.

Proposed Project

Installation of new replacement sewer lines and other sewer repair work are proposed to resolve clogging/sewage spill problems, capacity limitations, and structural deficiencies. The anticipated extent of the rehabilitation work for the lower and upper basins is shown on Figures 2 and 3, respectively. The major sewer reconstruction work in the lower basin, which is proposed to include approximately 9,000 linear feet of new 8-inch to 16-inch diameter sewers, is anticipated to be constructed using conventional open-cut trenching. The project will include a new trunk sewer crossing Kamehameha Highway at Hekaha Street to replace the Waimalu Stream inverted siphon. Up to approximately 180 sewer laterals servicing single-family homes and other sewer customers are proposed to be either be replaced or rehabilitated up to the property line. The construction of new lines will be supplemented as required with spot repairs utilizing cured-in-place pipe (CIPP) "trenchless" sewer lining technology and conventional pipe replacement methods requiring excavation.

Preliminary Project Assessment

The project will have significant benefits with respect to sewage spill reduction, public health and environmental protection, and reduction of maintenance effort and cost. The environmental impacts and mitigation measures will be evaluated in the environmental assessment currently being prepared. The following is a brief preliminary assessment of the environmental impacts and issues.

The construction work will be generally confined to the right-of-way of existing roads and easements in private property. There will be short-term construction impacts such as traffic congestion and restricted access near active construction areas, and noise and dust generated from construction equipment and vehicles. Operation of sewage bypass and trench dewatering pumps at night will likely be required. Discharge of trench dewatering effluent to the storm drainage system will likely be required due to construction of sewer lines as much as eight feet below the water table. There will be temporary localized disruptions to sewer, water and possibly other utility services during the project.

The contractor will be required to meet applicable noise standards established by the State Department of Health (DOH), control the generation of dust by implementing appropriate dust control practices, and conform to approved traffic control plans. Work at night, which would likely require a noise variance from the DOH, will be considered for the Kamehameha Highway crossing to minimize traffic congestion. Required National Pollutant Discharge Elimination System (NPDES) general permits for construction activities and disposal of dewatering effluent and hydrotesting water will be obtained.

The construction cost for this project is estimated to be approximately $15.5 million. Construction of the project is expected to begin in the second half of 2005 at the earliest. The construction work is expected to require a total of approximately 18 to 24 months.

Request for Input and Comments

We would appreciate receiving any pre-assessment input and comments that you may have by June 30, 2004. We will make every effort to address your concerns in the draft environmental assessment. Please submit your comments to:

Roy Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813

Facsimile: (808) 538-0445
Email: rabe@hawaiipacificengineers.com

To address potential cultural impacts in the environmental assessment, we would appreciate any input and information that you may have related to possible impacts on the traditional practices of any ethnic group. The names and phone numbers of individuals that could we could contact regarding the practices that may be affected would be very helpful to us.

We will be giving a short presentation on the project at the Aiea Neighborhood Board meeting on June 14, 2004 (7:30 p.m.) at the Aiea Library and will be available to answer your questions.

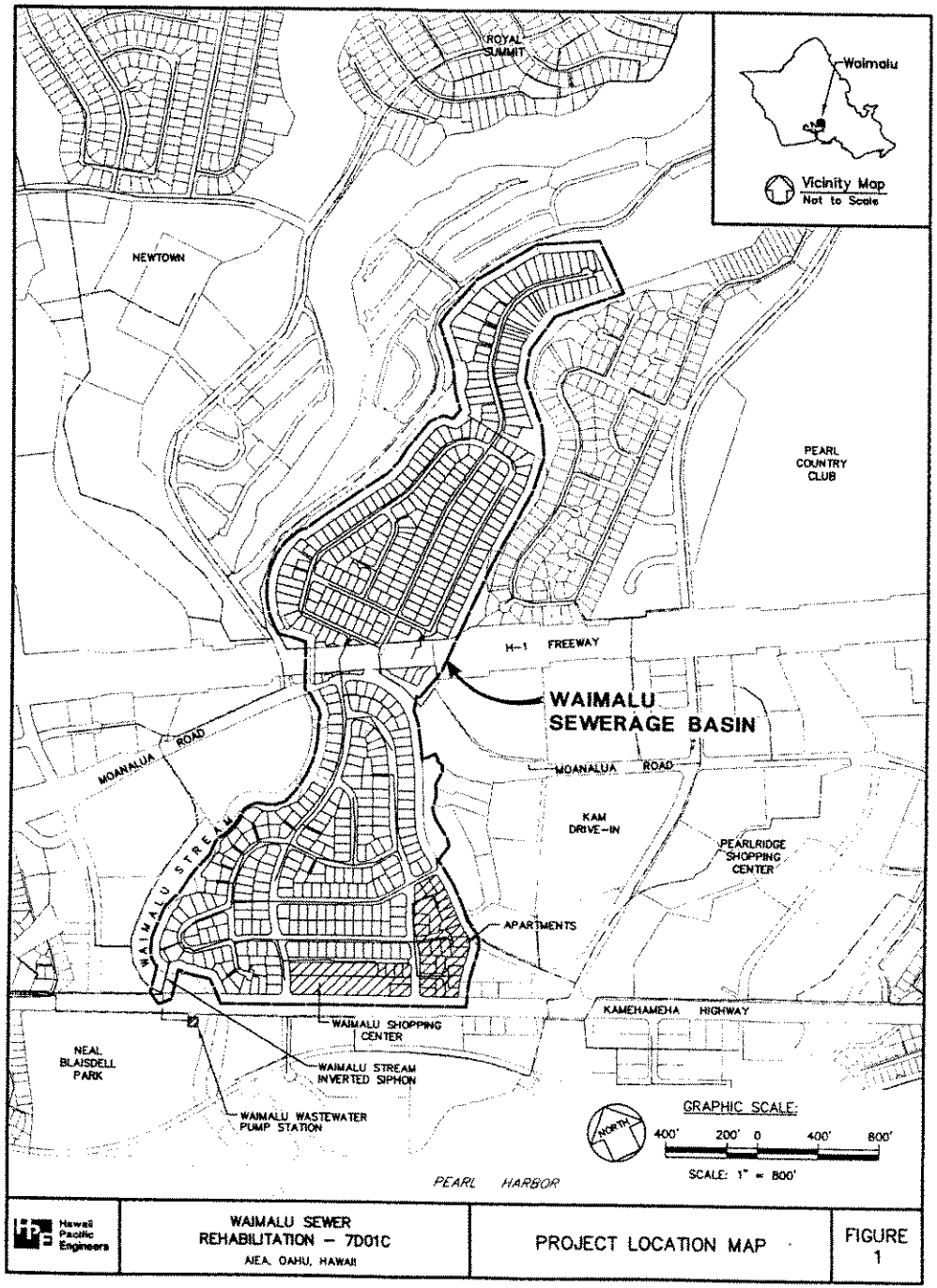
Please feel free to call me at 522-7425 to discuss any aspect of the proposed project. Thank you for your participation in the environmental review process for this project.

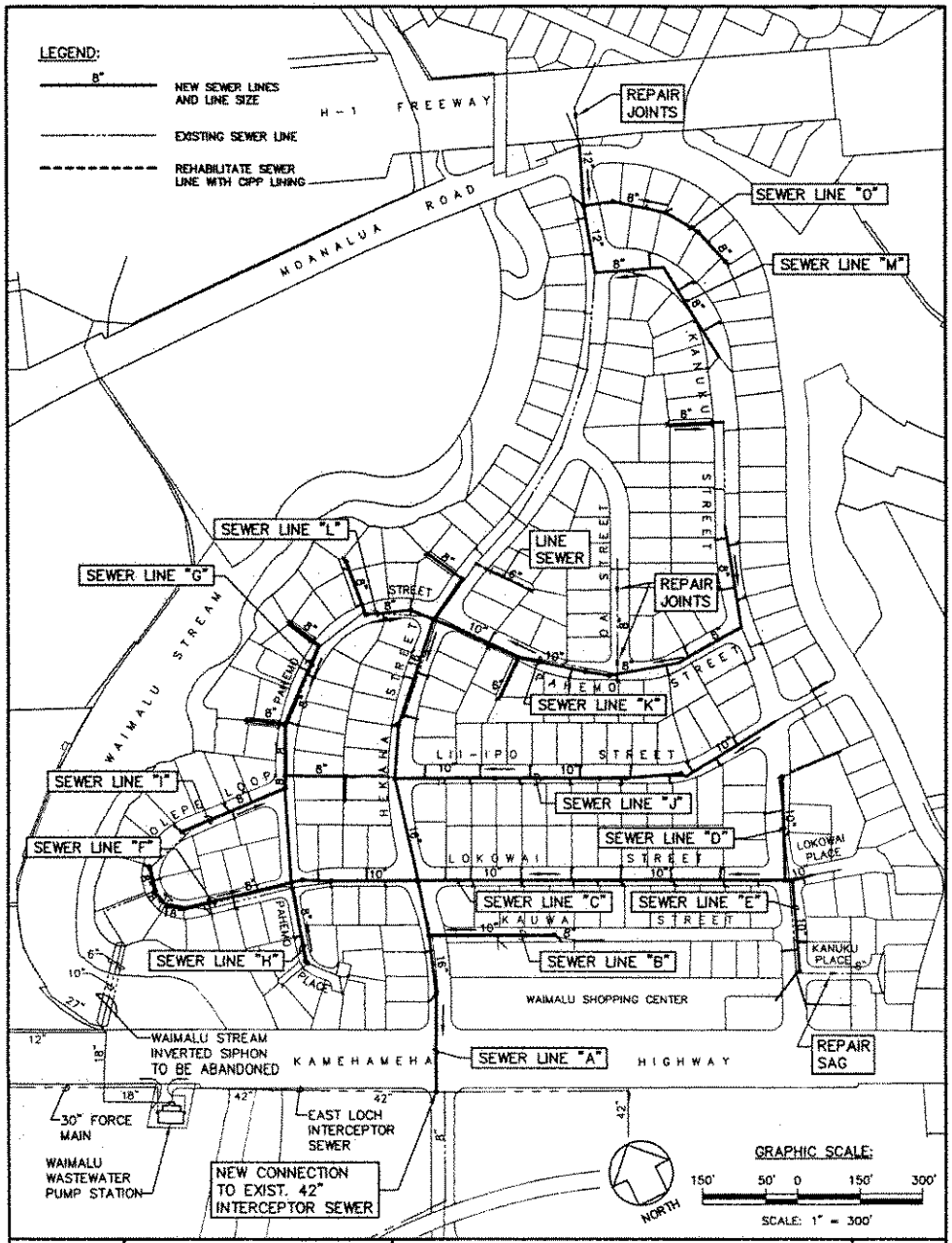
Sincerely,

Roy K. Abe
Vice President

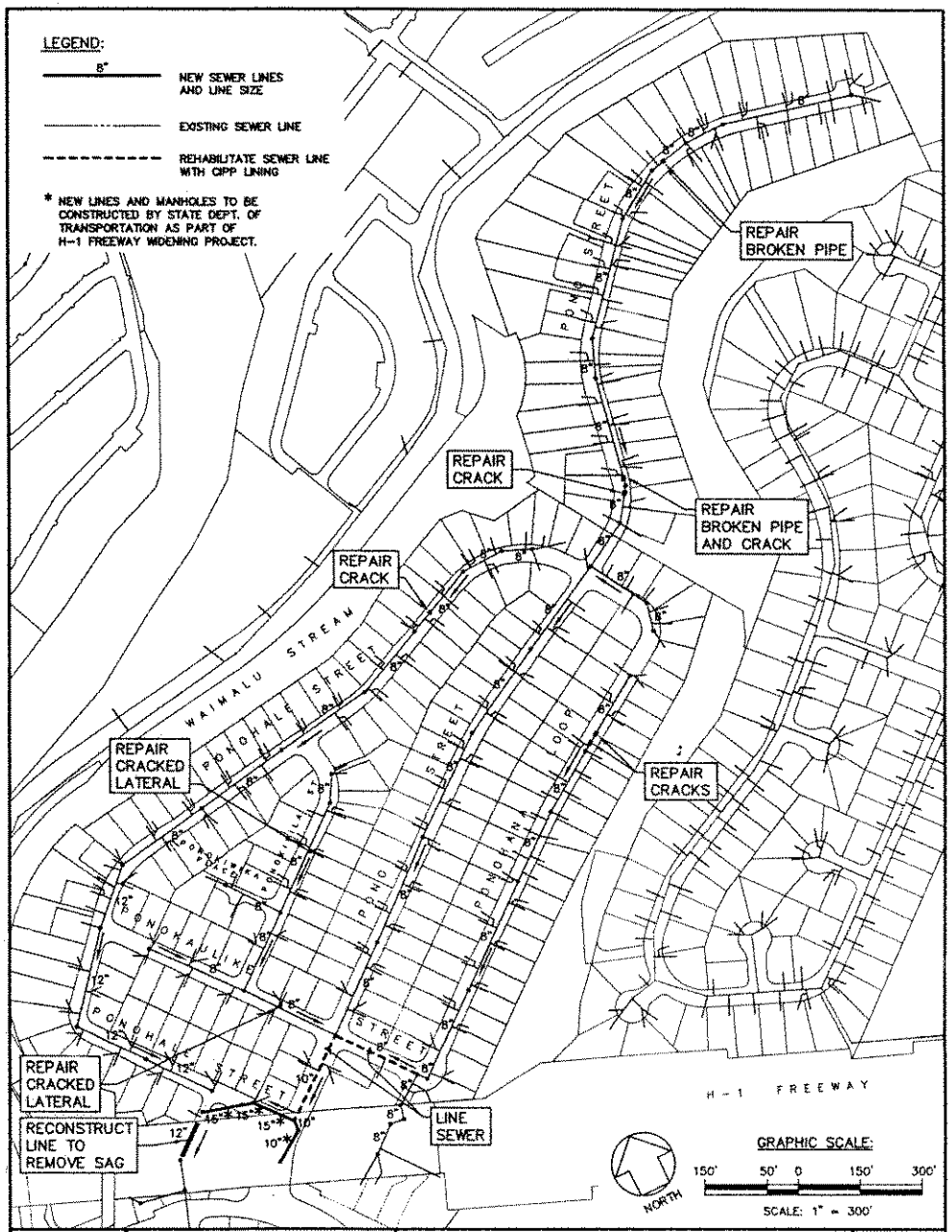
cc: Mr. Sung Ho Lai, Dept. of Design and Construction, C&C of Honolulu

Attachment (3 figures)





Hawaii Pacific Engineers	WAIMALU SEWER REHABILITATION AIEA, OAHU, HAWAII	GENERAL PLAN FOR PROPOSED RECONSTRUCTION AND REHABILITATION OF SEWERS IN LOWER BASIN	FIGURE 2



Hawaii Pacific Engineers	WAIMALU SEWER REHABILITATION AIEA, OAHU, HAWAII	GENERAL PLAN FOR PROPOSED RECONSTRUCTION AND REHABILITATION OF SEWERS IN UPPER BASIN	FIGURE 3

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

REPLY TO
ATTENTION OF

June 9, 2004

RECEIVED
JUN 10 2004
HAWAII PACIFIC
ENGINEERS INC.

Regulatory Branch

Roy K. Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

This responds to your written request (letter dated June 1, 2004) on behalf of the City and County of Honolulu Department of Design and Construction for determination of Department of the Army (DA) permit requirements for proposed Waimalu Sewer Rehabilitation project, Oahu (TMK 9-8-10: 22-24, 26-28, and 65). We have reviewed your environmental assessment preparation notice with respect to the Corps' authority to issue DA permits under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344).

Although the project area abuts Waimalu Stream, the information you provided indicates that the rehabilitation work will occur in upland areas. Via a telephone conversation with Mr. Peter Galloway of my staff on June 4, 2004 you clarified that the proposed abandonment of the inverted siphon located in the lower, tidal portion of Waimalu Stream will not include removal of the structure or any other work within the stream. Based on this understanding, I have determined that the project will not involve any activity in waters of the United States, including adjacent wetlands; therefore, a DA permit will not be required.

Should you have questions concerning this determination, please contact Mr. Galloway by telephone at (808) 438-8416 or by fax at (808) 438-4060. Written inquiries should cite File No. 200400347 and should be sent to: Regulatory Branch (CEPOH-EC-R/P. Galloway); U.S. Army Engineer District, Honolulu; Building 230; Fort Shafter, Hawaii 96858-5440.

Sincerely,

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

DA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

RECEIVED
JUN 16 2004
HAWAII PACIFIC
ENGINEERS INC.

June 15, 2004

Mr. Roy Abe
Hawaii Pacific Engineers, Inc
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813

Subject: Waimalu Sewer Rehabilitation Pre-assessment Consultation

Dear Mr. Abe,

We are in receipt of your letter dated June1, 2004. We have the following comment:

1. Use of crushed glass as pipe cushion or backfill. If you need the specs on usage of this material, please call our office.
2. Contact the Hawaiian Civic club or review our cultural consultant list for names of individuals that may be assistance to you.

We have no other comments to offer at this time, but will reserve further comments when the documents are submitted.

Should you have any questions, please feel free to call our office at 586-4185.

Sincerely,

Genevieve Salmonson
Director

LINDA LINGLE
GOVERNOR OF HAWAII

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

RECEIVED
JUN 14 2004
HAWAII PACIFIC ENGINEERS INC.

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD / WB

June 8, 2004

O9 8 010 etc.wpd
W11 wb040475

Mr. Roy Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Subject: Waimalu Sewer Rehabilitation
Pre-Assessment Consultation for Environmental Assessment
TMK: (1) 9-8-010, 22, 23, 24, 26, 27, 28 and 65 117 acres

Thank you for allowing us the opportunity to comment on the pre-assessment consultation for environmental assessment for Waimalu Sewer Rehabilitation project. We have the following comments and information on the above subject property:

We are pleased that the Waimalu Sewerage Basin is being upgraded and that new replacement sewer lines and other sewer repair work are proposed to resolve the clogging/sewage spill problems, capacity limitations, and structural deficiencies. Our main concern is that while the construction is ongoing, all wastewater currently generated from the area is properly handled such that there is no "spill" or discharge. We have no objections to the project.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any questions, please contact the Planning & Design Section of our Branch at 586-4294.

Sincerely,

HAROLD K. YEE, P.E., CHIEF
Wastewater Branch

LINDA LINGLE
GOVERNOR OF HAWAII

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

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EPO-04-132

RECEIVED
JUN 7 - 2004
HAWAII PACIFIC ENGINEERS INC.

June 4, 2004

Mr. Roy Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813

Dear Mr. Abe:

SUBJECT: Waimalu Sewer Rehabilitation
Pre-assessment Consultation for Environmental Assessment
TMK: 9-8-10,22,23,24,26,27,28 & 65

Thank you for allowing us to review and comment on the subject document. We have the enclosed standard comments to offer. If there are any questions about these standard comments please contact Ryan Davenport with the Environmental Planning Office at 586-4346.

Sincerely,

JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

Enclosure

c. SDWB
EPO
SHWB
NRAIQ
CWB
WWB
CAB
HEER

Standard Comments

Environmental Planning Office Dated 3/2/04

The Environmental Planning Office (EPO) is responsible for several surface water quality management programs mandated by the federal Clean Water Act or dictated by State policy . (http://www.state.hi.us/doh/eh/epo/wqm/wqm.htm). Among these responsibilities, EPO:

- maintains the *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)* (http://www.state.hi.us/doh/eh/epo/wqm/303dpcfinal.pdf);
- develops and establishes Total Maximum Daily Loads (TMDLs) for listed waters (suggesting how much existing pollutant loads should be reduced in order to attain water quality standards, please see http://www.epa.gov/owow/tmdl/intro.html);
- writes TMDL Implementation Plans describing how suggested pollutant load reductions can be achieved; and
- conducts assessments of stream habitat quality and biological integrity.

To facilitate TMDL development and planning, and to assist our assessment of the potential impact of proposed actions upon water quality, pollutant loading, and biological resources in receiving waters, we suggest that environmental review documents, permit applications, and related submittals include the following standard information and analyses:

Waterbody type and class

1. Identify the waterbody type and class, as defined in Hawaii Administrative Rules Chapter 11-54 (http://www.state.hi.us/doh/rules/11-54.pdf), of all potentially affected water bodies[1].

Existing water quality management actions

2. Identify any existing National Pollutant Discharge Elimination System (NPDES) permits and related connection permits (issued by permittees) that will govern the management of water that runs off or is discharged from the proposed project site or facility. Please include NPDES and other permit numbers; names of permittees, permitted facilities, and receiving waters (including waterbody type and class as in 1. above); diagrams showing drainage/discharge pathways and outfall locations; and note any permit conditions that may specifically apply to the proposed project.

3. Identify any planning documents, groups, and projects that include specific prescriptions for water quality management at the proposed project site and in the potentially affected waterbodies. Please note those prescriptions that may specifically apply to the proposed project.

Pending water quality management actions

4. Identify all potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)* including the listed waterbody, geographic scope of listing, and pollutant(s) (See Table 7 at http://www.state.hi.us/doh/eh/epo/wqm/303dpcfinal.pdf).

5. If the proposed project involves potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)*, identify and quantify expected changes in the following site and watershed conditions and characteristics:
   - surface permeability
   - hydrologic response of surface (timing, magnitude, and pathways)
   - receiving water hydrology
   - runoff and discharge constituents
   - pollutant concentrations and loads in receiving waters
   - aquatic habitat quality and the integrity of aquatic biota

Where TMDLs are already established they include pollutant load allocations for the surrounding lands and point source discharges. In these cases, we suggest that the submittal specify how the proposed project would contribute to achieving the applicable load reductions.

Where TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives is to prevent any project-related increases in pollutant loads. This is generally accomplished through the proper application of suitable best management practices in all phases of the project and adherence to any applicable ordinances, standards, and permit conditions. In these cases we suggest that the submittal specify how the proposed project would contribute to
reducing the polluted discharge and runoff entering the receiving waters, including plans for
additional pollutant load reduction practices in future management of the surrounding lands and drainage/discharge systems.

Proposed Action and Alternatives Considered

We suggest that each submittal identify and analyze potential project impacts at a watershed scale by considering consider the potential contribution of the proposed project to cumulative, multi-project watershed effects on hydrology, water quality, and aquatic and riparian ecosystems.

We also suggest that each submittal broadly evaluate project alternatives by identifying more than one engineering solution for proposed projects. In particular, we suggest the

consideration of "alternative," "soft," and "green" engineering solutions for channel modifications that would provide a more environmentally friendly and aesthetically pleasing channel environment and minimize the destruction of natural landscapes.

If you have any questions about these comments or EPO programs, please contact Ryan Davenport at 586-4346.

[1]"Potentially affected waterbodies" means those in which proposed project activity would take place and any that could receive water discharged by the proposed project activity or water flowing down from the proposed project site. These waterbodies can be presented as a chain of receiving waters whose top link is at the project site upslope and whose bottom link is in the Pacific Ocean, and can be named according to conventions established by Chapter 11-54 and the *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)*. For example, a recent project proposed for Nuhelewai Stream, Oahu might potentially affect Nuhelewai Stream, Kapalama Canal, and Honolulu Harbor and Shore Areas.
[OTHER EXAMPLES OR DIAGRAM??]

Solid and Hazardous Waste Branch Dated 3/2/04

1)
The OSWM recommends the development of a solid waste management plan that encompasses all project phases including demolition, construction, and occupation/operation of the completed project.

Specific examples of elements that the plan should address include:

- The recycling of green-waste during clear and grub activities;
- Recycling construction and demolition wastes, if appropriate;
- The use of locally produced compost in landscaping;
- The use of recycled content building materials;
- The provision of recycling facilities in the design of the project.

---

2)
The developer shall ensure that all solid waste generated during project construction is directed to a Department of Health permitted solid waste disposal or recycling facility.

---

3)
The developer should consider providing space in the development for recycling activities. The provision of space for recycling bins for paper, glass, and food/wet waste would help to encourage the recycling of solid waste(s) generated by building occupants.

---

4)
The discussion of solid waste issues contained in the document is restricted to activities within the completed project. The OSWM recommends the development of a solid waste management plan that encompasses all project phases, from construction (and or demolition) to occupation of the project.

Specific examples of plan elements include: the recycling of green-waste during clear and grub activities; maximizing the recycling of construction and demolition wastes; the use of locally produced compost in the landscaping of the project; and the provision of recycling facilities in the design of the project.

---

5)
Hawaii Revised Statutes Chapter 103D-407 stipulates that all highway and road construction and improvement projects funded by the State or a county or roadways that are to be accepted by the State or a county as public roads shall utilize a minimum of ten per cent crushed glass aggregate as specified by the department of transportation in all base-course (treated or untreated) and sub-base when the glass is available to the quarry or contractor at a price no greater than that of the equivalent aggregate.

If you have any questions, please contact the Solid and Hazardous Waste Branch at (808) 586-4240.

Noise, Radiation & Indoor Air Quality Branch Dated 3/2/04

"Project activities shall comply with the Administrative Rules of the Department of Health:

- Chapter 11-39 Air Conditioning and Ventilating.
- Chapter 11-45 Radiation Control.
- Chapter 11-46 Community Noise Control.
- Chapter 11-501 Asbestos Requirements.
- Chapter 11-502 Asbestos-Containing Materials in Schools.
- Chapter 11-503 Fees for Asbestos Removal and Certification
- Chapter 11-504 Asbestos Abatement Certification Program

Should there be any questions, please contact Russell S. Takata, Environmental Health Program Manager, Noise, Radiation and Indoor Air Quality Branch, at 586-4701."

Clean Water Branch Dated 3/2/04

1. The Army Corps of Engineers should be contacted at (808) 438-9258 to identify whether a Federal license or permit (including a Department of Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...."

2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following activities:

a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).

b. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.**

c. Discharges of treated effluent from leaking underground storage tank remedial activities.

d. Discharges of once through cooling water less than one (1) million gallons per day.

e. Discharges of hydrotesting water.

f. Discharges of construction dewatering effluent.

g. Discharges of treated effluent from petroleum bulk stations and terminals.

h. Discharges of treated effluent from well drilling activities.

i. Discharges of treated effluent from recycled water distribution systems.

j. Discharges of storm water from a small municipal separate storm sewer system.

k. Discharges of circulation water from decorative ponds or tanks.

The CWB requires that a Notice of Intent (NOI) to be covered by a NPDES general permit for any of the above activities be submitted at least 30 days before the commencement of the respective activities. The NOI forms may be picked up at our office or downloaded from our website at http://www.state.hi.us/health/eh/cwb/forms/genl-index.html.

3. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters and/or coverage of the discharge(s) under the NPDES general permit(s) is not permissible (i.e. NPDES general permits do not cover discharges into Class 1 or Class AA receiving waters). An application for the NPDES permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at http://www.state.hi.us/health/eh/cwb/forms/indiv-index.html.

4. Hawaii Administrative Rules, Section 11-55-38, also requires the owner to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD.

Please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

If you have any questions, please contact the CWB at 586-4309.

Waste Water Branch Dated 3/2/04

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems". We do reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at 586-4294.

Clean Air Branch Dated 3/2/04

Construction/Demolition Involving Asbestos:

Since the proposed project would entail renovation/demolition activities which may involve asbestos, the applicant should contact the Asbestos Abatement Office in the Noise, Radiation and Indoor Air Quality Branch at 586-5800.

Control of Fugitive Dust:

A significant potential for fugitive dust emissions exists during all phases of construction. Proposed construction activities will occur in proximity to **existing residences, businesses, public areas and thoroughfares**, thereby exacerbating potential dust problems. It is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust. Implementation of adequate dust control measures during all phases of development and construction activities is warranted.

Construction activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust.

The contractor should provide adequate measures to control dust from the road areas and during the various phases of construction. These measures include, but are not limited to, the following:

a) Plan the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;
b) Provide an adequate water source at the site prior to start-up of construction activities;
c) Landscape and provide rapid covering of bare areas, including slopes, starting from the initial grading phase;
d) Minimize dust from shoulders and access roads;

e) Provide adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
f) Control dust from debris being hauled away from the project site.

Hazard Evaluation and Emergency Response Office(HEER) Dated 3/2/04

1. A phase I Environmental Site Assessment (ESA) should be conducted for developments or redevelopments. If the investigation shows that a release of petroleum, hazardous substance, pollutants or contaminants occurred at the site, the site should be properly characterized through an approved Hawaii State Department of Health (DOH)/Hazard Evaluation and Emergency Response Office (HEER) soil and or groundwater sampling plan. If the site is found to be contaminated, then all removal and remedial actions to clean up hazardous substance or oil releases by past and present owners/tenants must comply with chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan.

2. All lands formerly in the production of sugarcane should be characterized for arsenic contamination, If arsenic is detected above the US EPA Region (preliminary remediation goal (PRG) for non-cancer effects, then a removal and or remedial plan must be submitted to the Hazard Evaluation and Emergency Response (HEER) Office of the State Department of Health for approval. The plan must comply with Chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan.

3. If the land has a history of previous releases of petroleum, hazardous substances, pollutants, or contaminants, we recommend that the applicant request a "no further action" (NFA) letter from the Hawaii State Department of Health (DOH)/ Hazard Evaluation and Emergency Response (HEER) Office prior to the approval of the land use change or permit approval.

Safe Drinking Water Branch Dated 3/11/04

The Safe Drinking Water Branch administers programs in the areas of: 1) public water systems; 2) underground injection control; and 3) groundwater protection. Our general comments on projects are as follows.

Public Water Systems

- Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules, Title 11, Chapter 20, titled Rules Relating to Potable Water Systems.

- All new public water systems are required to demonstrate and meet minimum capacity requirements prior to their establishment. This requirement involves demonstration that the system will have satisfactory technical, managerial and financial capacity to enable the system to comply with safe drinking water standards and requirements.

- Projects that propose development of new sources of potable water serving or proposed to serve a public water system must comply with the terms of Section 11-20-29 of Chapter 20. This section requires that all new public water system sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.

- The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the state of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.

- All sources of public water system sources must undergo a source water assessment which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the source of drinking water.

- Projects proposing to develop new public water systems or proposing substantial modifications to existing public water systems must receive approval by the Director of Health prior to construction of the proposed system or modification. These projects include treatment, storage and distribution systems of public water systems. The approval authority for projects owned and operated by a County Board or Department of Water or Water Supply has been delegated to them.

- All public water systems must be operated by certified distribution system and water treatment plant operators as defined by Hawaii Administrative Rules, Title 11, Chapter 11-25 titled; Rules Pertaining to Certification of Public Water System Operators.

- All projects which propose the use of dual water systems or the use of a non-potable water system in proximity to an existing potable water system to meet irrigation or other needs must be carefully design and operate these systems to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the potable system. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the potable water supply. In addition backflow devices must be tested periodically to assure their proper operation. Further, all non-potable spigots and irrigated areas

should be clearly labeled with warning signs to prevent the inadvertent consumption on non-potable water. Compliance with Hawaii Administrative Rules, Title 11, Chapter 11-21 titled; Cross-Connection and Backflow Control is also required.

- All projects which propose the establishment of a potentially contaminating activity (as identified in the Hawai`i Source Water Assessment Plan) within the source water protection area of an existing source of water for a public water supply should address this potential and activities that will be implemented to prevent or reduce the potential for contamination of the drinking water source.

- For further information concerning the application of capacity, new source approval, operator certification, source water assessment, backflow/cross-connection prevention or other public water system programs, please contact the Safe Drinking Water Branch at 586-4258.

Underground Injection Control (UIC)

- Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawai`i Administrative Rules, Title 11, Chapter 11-23, titled Underground Injection Control (UIC). The Department of Health's approval must be first obtained before any injection well construction commences. A UIC permit must be issued before any injection well operation occurs.

- Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operation limitations, monitoring and reporting requirements, and other facility management and operational conditions. A complete UIC permit application form is needed to apply for a UIC permit.
- A UIC permit can have a valid duration of up to five years. Permit renewal is needed to keep an expiring permit valid for another term.

For further information about the UIC permit and the Underground Injection Control Program, please contact the UIC staff of the Safe Drinking Water Branch at 586-4258.

Groundwater Protection Program

Projects that propose to develop a golf course are asked to use the Guidelines Applicable to Golf Courses in Hawai`i (Version 6) in order to address certain groundwater protection concerns, as well as other environmental concerns

LINDA LINGLE
GOVERNOR OF HAWAII

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

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EPO

July 1, 2004

To: Persons Requesting Department of Health Comments on Land Use Documents

From: June F. Harrigan-Lum, Manager
Environmental Planning Office

Our land use review coordinator position will be vacant beginning July 1, 2004. We will be filling this position as soon as possible. In the meantime, starting July 1, 2004, the Environmental Planning Office (EPO) will not be accepting any land use documents for coordinated replies.

If you would like to request to have staff in a specific branch or office to comment on your proposal, you are welcome to contact the staff directly. If a document has already been received by EPO and you wish to have us send it to a specific branch, you may call 586-4337 and ask for the clerical staff to send it to the appropriate branch. Please describe the document and the date of your cover letter.

You may call the above number and check with the clerical staff to see when coordinated responses from this office will resume.

Thank you for your cooperation and patience in this matter.

Enclosure

C: DDEH

Branches and Offices in the Environmental Health Administration

Hazard Evaluation and Emergency Response Office	586-4249
Environmental Planning Office	586-4337
Clean Air Branch	586-4200
Clean Water Branch	586-4309
Safe Drinking Water Branch	586-4258
Solid & Hazardous Waste Branch	586-4226
Wastewater Branch	586-4294
Noise, Radiation, Indoor & Air Quality Branch	586-4700
Sanitation Branch	586-8000
Food and Drug Branch	586-4725
Vector Control Branch	831-6767

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

June 25, 2004

Roy Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813

Log NO: 2004.1963
DOC NO: 0406EJ35

Dear Mr. Abe:

SUBJECT: **Chapter 6E-8 Historic Preservation Review-Pre-Assessment Consultation for Environmental Assessment - City and County of Honolulu Department of Design and Construction: Waimalu Sewer Rehabilitation**
Waimalu, 'Ewa, O'ahu
TMK: (1) 9-8-010, 022-024, 026-028 and 065

Thank you for the opportunity to comment on the proposed Waimalu Sewer rehabilitation project. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of the project areas. We received notification of this undertaking from your office on June 4, 2004 and provide the following comment.

The City and County of Honolulu Department of Design and Construction proposes installation of new replacement sewer lines and other sewer repair work within the Waimalu sewer basin. Within the lower basin, approximately 9,000 linear feet of new 8-inch to 16-inch diameters sewers is planned using conventional open-trench excavation. The project will include a new trunk sewer crossing Kamehameha Highway and up to approximately 180 sewer laterals servicing single-family homes and other customers. Spot repairs utilizing CIPP "trenchless" sewer lining technology and convention pipe replacement will also take place. The project will generally be confined to the existing roads and easements in private property.

A review of our records shows that there are no known historic sites within the project area. The project will be conducted within existing sewer corridors, street right-of-ways, and sewage easements where historic sites are highly unlikely to be found. Thus, we believe that "no historic properties will be affected" by this project.

In the unlikely event that historic sites, including human burials, are uncovered during routine construction activities, all work in the vicinity must stop and the State Historic Preservation division must be contacted at 692-8015.

Should you have any questions, please feel free to call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Administrator
State Historic Preservation Division

EJ: sky

LINDA LINGLE
GOVERNOR

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

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

IN REPLY REFER TO
HWY-DD 2.4554

JUN 2 8 2004

RECEIVED
JUN 30 2004
HAWAII PACIFIC ENGINEERS INC.

Mr. Roy Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813

Dear Mr. Abe:

Subject: Waimalu Sewer Rehabilitation
Pre-Assessment Consultation for Environmental Assessment
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65

In pursuant to your letter dated June 1, 2004, we provide the following comments:

1. Coordinate construction schedule with the State Department of Transportation (DOT) Project: Interstate Route H-3, H-3 Finish (Unit VIII), Federal-Aid Interstate Project No. I-H3-1(75) Unit VIII and Interstate Route H-1 Seismic Retrofit, Austin-Bishop Separation and Waiau Interchange, Federal-Aid Interstate Project No. BR-H1-1(241). Construction started on June 7, 2004 and is expected to be completed in January 2006.

2. Refer to the project mentioned in comment No. 1 for realignment of roadway, relocation of existing utilities, and location of new footings under the viaduct at Waimalu Gardens Subdivision.

3. With respect to the project mentioned in comment No. 1, the State has an executed Utility Agreement No. 1756 (U.A. No. 1756) dated January 22, 2003, with the City and County of Honolulu, Department of Environmental Services. The scope of work under U.A. No. 1756 covers utility adjustments as a result of the realignment of Ponohale Street in connection with the H-3 Finish (Unit VIII) project.

4. Figure 3 of your letter indicates proposed work on existing sewer lines within the State's right-of-way under the Waimalu Viaduct. Proper approvals will need to be obtained for work within the State's right-of-way.

5. Coordinate design and construction schedule with the proposed DOT project: Kamehameha Highway Pavement Preventive Maintenance, Waiawa Interchange to Honomanu Street, Project No. 99DE-03-04M. This project is scheduled to be advertised for bid proposal in FY2006. To avoid a one-year moratorium, it is recommended that construction on the subject project begin prior to this State project.

6. As shown on Figure 2 of your letter, the project proposes to install a new sewer line identified as Sewer Line "A" crossing Kamehameha Highway. The City and County of Honolulu will need to obtain a Use and Occupancy Agreement from the Property Management Section of the Right-of-Way Branch for the installation of their sewer line within Kamehameha Highway. Lead time for completion of a Use and Occupancy Agreement is approximately 6-12 months.

7. Consider directional boring type construction for Sewer Line "A" crossing Kamehameha Highway.

8. A permit is required to work within the State's right-of-way. Construction and traffic control plans must be submitted to the Highways Division for review and approval.

9. Refer to the State Department of Transportation's (DOT) Pipeline Removal Policy which no longer allows the abandonment of any pipelines or utility facilities on DOT properties, including the highway rights-of-way. Also, there will be no assignment or sub-letting of any existing abandoned pipelines and facilities within DOT properties, including the highway rights-of-way.

10. Dewatering effluent shall not be discharged into the State Highways existing drainage system.

11. A Discharge Permit from the Highways Division may be required prior to construction.

12. Contact State Historic Preservation Division (SHPD) for consultation for possible cultural and/or environmental impacts.

13. The subject project will be presented at the June 23, 2004, Highway Utilities Committee Meeting.

Should you have any questions, please call Thomas Fujiwara at 692-7578 or Ursula Calbero at 692-7580, Highway Design Section, Design Branch, Highways Division. In response to this letter, please reply to the attention of Thomas Fujiwara, Project Manager and reference HWY-DD 2.4554 as noted above.

Very truly yours,

for RODNEY K. HARAGA
Director of Transportation

c: Mr. Sung Ho Lai, Dept. of Design and Construction, C&C of Honolulu

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
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Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

August 10, 2004

Mr. Rodney K. Haraga, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

ATTENTION: Mr. Thomas Fujiwara, Highways Division

SUBJECT: Waimalu Sewer Rehabilitation
Pre-assessment Consultation for Environmental Assessment
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65
(Reply to HWY-DD 2.4554)

Dear Mr. Haraga:

On behalf of the City and County of Honolulu Department of Design and Construction, thank you very much for your review of preliminary information on the Waimalu sewer project and your correspondence of June 28, 2004. We would like to take this opportunity to briefly respond to your comments and concerns. The item numbers below correspond to the DOT's comments.

1. Schedule Coordination with H-1 Widening Project: The sewer line work near the freeway is not expected to begin before the completion on the freeway widening project. Our sewer work in the area could be performed in the later stages of the project if necessary to avoid traffic problems. We will monitor the progress of the freeway project and make appropriate changes to the sewer project phasing and schedule if necessary.

2. Information on H-1 Widening Project: We obtained plans for DOT's work under the viaduct at the Waimalu Gardens Subdivision during the recently completed planning phase of our project and plan to obtain any updated plans during the upcoming design phase.

3. Utility Agreement No. 1756: We acknowledge the execution of a utility agreement for the realignment of Ponohale Street and will be obtaining a copy of the agreement.

4. Work under the Waimalu Viaduct: Proper approvals will be obtained from DOT for work on sewer lines in the State's right-of-way under the Waimalu Viaduct. Plans will be submitted to DOT for review and comments.

5. Coordination with Proposed Kamehameha Highway Pavement Preventive Maintenance Project: The Waimalu sewer rehabilitation project will be expedited to the extent possible to avoid the one-year road work moratorium following DOT's paving project. On behalf of the City, we request that DOT consider delaying the repaving work near the proposed sewer to the extent possible to minimize the potential for construction schedule conflicts. A one-year delay in our project could cause additional sewage backups into homes and spills in streets that may result in adverse health and environmental impacts, and civil litigation. With a high level of cooperation between the City and DOT, we hope that project scheduling conflicts can be avoided to everyone's benefit. We would appreciate receiving additional information on the repaving project's timetable as it becomes available to allow us better define the required schedule for the sewer project.

6. Use and Occupancy Agreement for Kamehameha Highway Crossing: We acknowledge the need for a Use and Occupancy Agreement. Our surveying consultant will be preparing a survey map to define the proposed easement for the agreement.

7. Directional Boring Across Kamehameha Highway: Preliminary assessments indicate that trenchless construction methods such as horizontal directional drilling and microtunneling will not likely to be feasible due to the deep and excessively soft soils and the need to maintain precise sewer line grade control. The contractor may be allowed to use microtunneling as an option if combined with ground improvement techniques. Trenchless pipeline alternatives will be discussed in the environmental assessment.

8. Permit to Work within State Right-of-Way. Construction and traffic control plans for the project will be submitted to DOT for review and approval, and the permit to work within the State right-of-way will be obtained.

9. DOT Pipeline Removal Policy. The project is not expected to require abandonment of any sewer lines within the State right-of-way.

10. Dewatering Effluent Disposal. Dewatering effluent will be discharged to the City's drainage system. An NPDES permit will be obtained. Dewatering effluent contaminated with sewage will be disposed in the sewer system.

11. Discharge Permit. A Discharge Permit will be obtained from the Highways Division as required.

12. Contact with State Historic Preservation Division (SHPD). SHPD has indicated that they believe "no historic properties will be affected" based on a review of the project scope.

Thank you very much for providing us with helpful input and comments. We look forward to working with you to minimize impacts to residents, commuters and DOT's work in the area. Please feel free to call me at 522-7425 if there are any questions.

Sincerely,

Roy K. Abe
Vice President

cc: Mr. Sung Ho Lai, Department of Design and Construction

LINDA LINGLE
GOVERNOR

RECEIVED
SEP 17 2004
HAWAII PACIFIC
ENGINEERS INC.

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

SEP 15 2004

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

IN REPLY REFER TO

HWY-DD 2.5291

Mr. Roy Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Subject: Waimalu Sewer Rehabilitation.
Pre-Assessment Consultation for Environmental Assessment
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65

In response to your letter dated August 10, 2004, we offer you the following options per your request for Item No. 5, to delay the repaving work near the proposed sewer to minimize potential construction schedule conflicts.

1. Coordinate construction schedule with the State. The State can delay a portion of the paving work at the vicinity of Hekaha Street and Kamehameha Highway intersection to accommodate the installation of Sewer Line "A" by the City. Submit City's construction schedule during the State's design phase so it can be incorporated in our State contract package schedule.

2. If the City project is scheduled to be constructed after DOT's paving work and to avoid the one-year road work moratorium, a trenchless construction method is recommended.

The Proposed Highway Pavement Preventive Maintenance project is scheduled to be advertised for bid proposal in FY2006 (May 2006). Delaying this project may cause the pavement to deteriorate up to a point where pavement preservation is no longer an option and may significantly increase the scope and cost of project. The contact person for the coordination of this State's paving project is Kevin Abe at 692-7583.

Should you have any questions, please call Thomas Fujiwara at 692-7578 or Ursula Calbero at 692-7580, Highway Design Section, Design Branch, Highways Division. In response to this letter, please reply to the attention of Thomas Fujiwara, Project Manager and reference HWY-DD 2.5291 as noted above.

Very truly yours,

RODNEY K. HARAGA
Director of Transportation

c: Mr. Sung Ho Lai, Dept. of Design and Construction, C&C of Honolulu

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
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Phone: (808) 524-3771 Fax: (808) 538-0445
E-mail: hpeinc@hawaiipacificengineers.com

November 5, 2004

Mr. Rodney K. Haraga, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

ATTENTION: Mr. Thomas Fujiwara, Highways Division

SUBJECT: Waimalu Sewer Rehabilitation
Pre-assessment Consultation for Environmental Assessment
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65
(Reply to HWY-DD 2.5291)

Dear Mr. Haraga:

On behalf of the City and County of Honolulu Department of Design and Construction, thank you very much for your letter dated September 15, 2004 addressing the potential schedule conflicts between the State's Kamehameha Highway paving project and our sewer project.

We plan to pursue the option in which Sewer Line "A" will be installed across Kamehameha Highway near Hekaha Street prior to the State's paving work. Our intent is to have the sewer line work in Kamehameha Highway completed before the State's indicated May 2006 bid date or shortly thereafter. We will coordinate the City's construction schedule with DOT and will provide the requested construction schedule information in the later stages of our design phase once the required permits and approvals are obtained. We look forward to working closely with DOT to facilitate timely approval of our plans and securing of required permits.

Thank you very much for your cooperation on this project. Please feel free to call me at 522-7425 if there are any questions.

Sincerely,

Roy K. Abe
Vice President

cc: Mr. Sung Ho Lai, Department of Design and Construction

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR
HONOLULU, HAWAII 96813
Phone (808) 523-4414 • Fax (808) 527-6743
Web site: www.co.honolulu.hi.us

JEREMY HARRIS
Mayor

ERIC G. CRISPIN, AIA
Director

BARBARA KIM STANTON
Deputy Director

KATHY SOKUGAWA
Acting Deputy Director

04WWB082 (SG)
2004/ELOG-1256

June 29, 2004

Mr. Roy K. Abe
Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

WAIMALU SEWER REHABILITATION
PRE-ASSESSMENT CONSULTATION FOR ENVIRONMENTAL ASSESSMENT
TMK: 9-8-010, 22, 23, 24, 26, 27, 28, & 65

This is in response to your letter dated June 1, 2004 requesting comments for the proposed rehabilitation of the municipal sewer system in the Waimalu area. We have reviewed the pre-assessment information for the planned draft Environmental Assessment (DEA) and have the following comments:

1. A glossary listing the abbreviations/acronyms and the definitions/items/entities represented would be helpful.

2. Conformity with Existing Land Use Controls.

   a. A discussion of the project's consistency with the *General Plans* of the City and County of Honolulu, as amended in 1992.

   b. In addition to specifying *General Plan* objectives and policies supported by the project, the DEA should indicate the project's conformity with the *Primary Urban Center Development Plan*'s (PUC DP) vision, including a discussion of the policies and guidelines in Section 4.2 (Wastewater System) and governmental agencies' comments about the adequacy of the sewer system.

      The PUC DP passed third reading at the City Council on June 4, 2004, as Bill 74 (2003), CD2. You may call the Council Assistance Office at 523-4480, after the June 21st signing deadline for Mayor Harris, for a copy of the ordinance.

   c. In accordance with Section 4-8.3 of the Revised Ordinances of Honolulu (ROH) (Ordinance 02-03), the proposed project will not require the addition of a symbol for the publicly funded facility to the PUC Public Infrastructure Map (PIM) after it is adopted, prior to the appropriation of City Capital Improvement Program funds for land acquisition or construction. Underground sewer lines are not a type of public infrastructure to be shown on the PIM.

3. A requirement that the applicant solicits comments from the surrounding neighborhood boards (NB) – Aiea NB No. 20 and Pearl City NB No. 21.

4. Historical and Cultural Resources Section:

   a. In the discussion of the archeological assessments, include the standard warranty that "Should archeologically significant features be uncovered, immediate archeological consultation will be sought with the Department of Land and Natural Resources State Historic Preservation Division in accordance with applicable regulations."

   b. Include a discussion of cultural impact assessments (assess the project's potential impact on traditional Hawaiian rights and determine how such rights should be protected), as required by Act 50.

5. A portion of the project is within the Special Management Area. The DEA should clarify whether the new replacement sewer lines in the SMA will be installed within established easements. If the sewer lines will be installed within established easements, a SMA Use Permit will not be required and the project may be deemed exempt under Chapter 25, Section 25-1.3(2)(M), ROH.

If you have any questions, please contact Mr. Scott Gushi of the Wastewater Branch at 523-4886.

Sincerely yours,

For Dennis N. Nakimura
ERIC G. CRISPIN, AIA
Director of Planning and Permitting

EGC:dl
[308726]

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone (808) 524-3771 Fax (808) 538-0445
E-mail hpeinc@hawaiipacificengineers.com

August 4, 2004

Mr. Eric Crispin, Director
City and County of Honolulu
Department of Planning & Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

SUBJECT: Waimalu Sewer Rehabilitation
Pre-assessment Consultation for Environmental Assessment
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65

Dear Mr. Crispin:

On behalf of the Department of Design and Construction, thank you very much for your review of preliminary information on the Waimalu sewer project and your correspondence of June 29, 2004. We would like to take this opportunity to briefly respond to your comments. The item numbers below correspond to the DPP comments.

1. List of Abbreviations/Acronyms: A list of abbreviations/acronyms will be provided as suggested.

2. Conformity with Existing Land Use Controls. The Draft Environmental Assessment (DEA) will discuss the project's conformance with the City's General Plan and Primary Urban Center Development plan as suggested. The DEA will note that the project is not required to be shown on the PUC Public Infrastructure Map.

3. Solicitation of Neighborhood Board Comments: Comments have been solicited from both the Aiea and Pearl City Neighborhood Boards as suggested. A presentation on the project was made at the June 14, 2004 meeting of the Aiea Neighborhood Board.

4. Historical and Cultural Resources Section: The standard statement on notification of the State Historic Preservation Division should significant archaeological feature be uncovered will be discussed in the DEA as suggested. A discussion on potential cultural impacts will also be included.

5. Special Management Area: The new trunk sewer is proposed to be connected to the existing 42-inch trunk sewer that is located within a 10-foot wide drain and sewer easement that is located in the SMA. The mauka boundary of the easement coincides with the SMA and property line. Because the centerline of existing trunk sewer line is located two to three feet from the makai easement line, the outer edge of the new manhole may potentially extend slightly beyond the easement line. An SMA Minor

Permit application will be submitted if required by DPP following review of the construction plans during the permitting process.

Thank you very much for providing us with helpful input and comments. We look forward to working with DPP to expedite implementation of this project. Please feel free to call me at 522-7425 if there are any questions.

Sincerely,

Roy K. Abe
Vice President

cc: Mr. Sung Ho Lai, Department of Design and Construction

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813
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JEREMY HARRIS
MAYOR

CHERYL D. SOON
DIRECTOR

GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

TP6/04-64278R

July 21, 2004

Mr. Roy K. Abe, Vice President
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813

Dear Mr. Abe:

Subject: Waimalu Sewer Rehabilitation

In response to your June 1, 2004 letter, we reviewed the information provided and submit the following comments for your consideration as you prepare the environmental assessment for the subject project:

1. A traffic impact study should be conducted. This study should include public transit impacts.

2. Construction should be phased only to the extent that can be completed during a day. Traffic control plans shall be prepared for each phase of work.

3. Pedestrian accessibility during construction should also be addressed.

4. Work should be done during off-peak hours to minimize the impact on the surrounding neighborhood.

5. The area neighborhood board, as well as area residents, businesses, emergency personnel, bus personnel, etc., should be kept apprised of the details of the proposed project and the impacts the project may have on the surrounding area.

6. The following should be included in the traffic notes:

   "The Contractor shall notify Oahu Transit Services, Inc., (OTS – TheBus contractor), Ed Sniffen (848-4571) or Lowell Tom (848-4578), two weeks prior to construction, informing them of location, scope of work, proposed closure of any street or traffic lanes, and the need to relocate any bus stops."

We look forward to reviewing the draft environmental assessment. Should you have any questions regarding these comments, please contact Faith Miyamoto of the Transportation Planning Division at 527-6976.

Sincerely,

CHERYL D. SOON
Director

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone (808) 524-3771 Fax (808) 538-0445
E-mail hpeinc@hawaiipacificengineers.com

August 4, 2004

Ms. Cheryl D. Soon, Director
City and County of Honolulu
Department of Transportation Services
650 South King Street
Honolulu, HI 96813

SUBJECT: Waimalu Sewer Rehabilitation
Pre-assessment Consultation for Environmental Assessment
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65
(Reference: TP6/04-64278R)

Dear Ms. Soon:

On behalf of the Department of Design and Construction, thank you very much for your review of preliminary information on the Waimalu sewer project and your correspondence of July 21, 2004. We would like to take this opportunity to briefly respond to your comments. The item numbers below correspond to the DTS comments.

1. Traffic Impact Study: Discussions on traffic impacts and mitigation measures, including impacts to public transit, will be included in the draft environmental statement (DEA). Ms. Faith Miyamoto of your department indicated that the scope and detail of the traffic impact discussions could be similar to those in the DEA prepared for the Waimalu Tract Reconstructed Sewer project, which this project supersedes.

2. Construction Phasing: Construction will be generally phased to limit the extent of work to areas that can be completed within a day. Traffic control plans will be prepared for the various phases of work and will be submitted to DTS for review and approval.

3. Pedestrian Accessibility: The DEA will address pedestrian accessibility during construction.

4. Work during Off-Peak Hours: Work will be limited to off-peak hour to minimize impacts. Night work will be considered for work in Kamehameha Highway.

5. Communication with Affected Parties: Preliminary information on the project was presented at the June 14, 2004 meeting of the Aiea Neighborhood Board No. 20. Future public information meetings on the project will be held during the design phase and prior to the start of the construction work. A project website and telephone hotline are proposed to be established during construction to provide up-to-date project information and receive complaints. Preliminary project information and subsequent project updates

will be mailed to over 500 residents and businesses located within and near the project area. The future mailings will include information pertaining to the public information meetings, website and telephone hotline. Emergency personnel and Oahu Transit Services will be contacted to discuss and resolve any traffic and access concerns.

6. Traffic Notes: Traffic notes on the construction drawings will include the requirement for the contractor to notify Oahu Transit Services, two weeks prior to construction, of the location, scope of work, proposed closure of streets and traffic lanes, and the need to relocate bus stops.

Thank you very much for providing us with helpful input and comments. We look forward to working with DTS to expedite implementation of this project. Please feel free to call me at 522-7425 if there are any questions.

Sincerely,

Roy K. Abe
Vice President

cc: Mr. Sung Ho Lai, Department of Design and Construction

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

June 14, 2004

RECEIVED
JUN 15 2004
HAWAII PACIFIC ENGINEERS INC.

Mr. Roy Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813

Dear Mr. Abe:

Subject: Your Letter of June 1, 2004 on the Environment Assessment Pre-Assessment for the Waimalu Sewer Rehabilitation Project, TMK: 9-8-10: 22, 23, 24, 26, 27, 28 and 65

Thank you for the opportunity to comment on the proposed project.

The construction drawing should be submitted for our approval.

The construction schedule should be coordinated to minimize impacts to the community and the water system.

If you have any questions, please contact Joseph Kaakua at 748-5442.

Very truly yours,

for CLIFFORD S. JAMILE
Manager and Chief Engineer

Hawaii Pacific Engineers, Inc.
1132 BISHOP STREET, SUITE 1003
HONOLULU, HAWAII 96813-2830
Phone: (808) 524-3771 Fax: (808) 538-0445

MEMORANDUM

To: Files **Date:** June 10, 2004
From: Roy Abe **Project No.:** 2004013
Project: Waimalu Sewer Rehabilitation Project Environmental Assessment
Subject: Summary of June 4, 2004 Meeting on Waimalu Sewer Rehabilitation Project with Senator David Ige
(attended by Roy Abe, HPE and Richard Leong, City Dept. of Design and Construction)

1. The meeting was requested by Senator Ige. The purpose of the meeting was to brief Senator Ige on the project and to obtain his input on possible community concerns.

2. R. Abe and R. Leong presented Senator Ige with background information on the project, including the need for the project and the project's general scope.

3. Traffic in the area is a major concern. Senator Ige indicated that the H-1 Freeway widening project will have significant impacts on the Waimalu residents living in the area. The contractor has indicated that the temporary realignment of Pono Street will be in place much longer than originally envisioned.

4. The demolition work for the proposed Best Buy store across the Waimalu Shopping Center has already started. As part of the project, modifications to the intersection of Kamehameha Highway and Kanuku Street will be performed. The Best Buy store will increase traffic in the area.

5. Senator Ige will provide contact information for the Best Buy project and information on other upcoming projects that may be of interest.

(On June 8, 2004, Senator Ige's Office provided the following additional information: 1) Best Buy engineering consultant contact is Don Fujii, Austin Tsutsumi & Associates, Ph. 533-3646, 2) BWS projects include Waimalu Wells No. 1 Soil Erosion Mitigation, contact is Jason Takaki, Ph. 748-5740; and another project in the Puaalii Street area, 3) the H-1 Freeway project hotline number is 587-6316.)

HOUSE OF REPRESENTATIVES
STATE OF HAWAII
STATE CAPITOL
HONOLULU, HAWAII 96813

Mr. Roy Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, HI 96813

RE: Waimalu Sewer Rehabilitation
Pre-assessment Consultation for Environmental Assessment
TMK: 9-8-10, 22, 23, 24, 26, 27, 28 and 65

Dear Mr. Abe:

Thank you for sending me a letter dated June 1, 2004, which provided me with information regarding the upcoming sewer rehabilitation project for Waimalu. As the state representative for this area, I welcome the news of this badly needed project. I also welcome the opportunity to comment on the project.

My only significant concern regarding the 18 to 24 month-long sewer rehabilitation project is that the current timeline conflicts with the H-1 Freeway widening project that just began a few days ago. As I understand it, the freeway project will be completed no later than December 2005. With your project set to begin in late 2005, there may be times when the impacts of both projects will make living and driving unbearable in and around our community.

We have recently learned that the intersection of Pono Street and Ponohale Street will be closed to traffic in both directions while the State DOT extends the footing of the freeway. This closure may last up to 11 months (we just recently found out about this situation and the State DOT and the contractor are currently re-evaluating their plans for the closure of both Ponohale Street and Pono Street). In the end, Ponohale Street will be realigned and all overhead and underground utility lines in this area will be re-routed due to the realignment of this road and the intersection.

According to the plans that you provided, it looks like there will be significant trenching and placement of new sewer lines around the exact same area as the realignment of Ponohale Street. I have always hoped that we would try to coordinate our construction efforts when the City and State agencies are repairing or installing new utility lines along the same streets. These two projects offer this opportunity.

Representative K. Mark Takai
State Capitol, Room 403 • Honolulu, Hawaii 96813
Phone: (808) 586-8455 • Fax: (808) 586-8459 • Email: reptakai@capitol.hawaii.gov

The residents of Waimalu Gardens (those homes above Moanalua Road) have been through some very difficult times over the past few years because of all the uncertainty of the freeway project. I suspect that these concerns will begin to increase now that the project has begun. The State DOT and I have tried to alleviate some of the residents' concerns by holding community meetings exclusively for these residents. I would strongly suggest that the City and County and Hawaii Pacific Engineers, Inc. hold community meetings for the residents and businesses immediately impacted by this project. I would be willing to work with Councilmember Gary Okino to help coordinate these meetings.

Additionally, I would like to suggest that for the duration of the project that the City and County create a website and a hotline staffed 24/7 by competent personnel to address concerns by residents and passing motorists. This suggest was made by the community for the freeway project and thus far, this has been very helpful.

Finally, I would strongly suggest that the plans for this project follow the spirit and intent of the City rule that requires the paving of the entire widths of roads when roads are repaired or when construction is done.

Thank you again for this opportunity to provide comments on this project. Please contact me if you should have any questions regarding my suggestions.

Sincerely,

K. Mark Takai
State Representative

CC: Rep. Blake Oshiro
Rep. Lynn Finnegann
Rep. Roy Takumi
Sen. David Ige
DOT Director Rodney Haraga
DOT Spokesperson Scott Ishikawa
Councilmember Gary Okino
DTS Director Cheryl Soon
Mr. Sung Ho Lai, Dept. of Design and Construction
Aiea Neighborhood Board
Pearl City Neighborhood Board
Aiea Community Association
Pearl City Community Association

Hawaii Pacific Engineers, Inc.
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E-mail: hpeinc@hawaiipacificengineers.com

June 18, 2004

Representative Mark Takai, District 34
The House of Representatives
415 South Beretania Street, Room 403
Honolulu, Hawaii 96813

SUBJECT: Waimalu Sewer Rehabilitation
Pre-assessment Consultation for Environmental Assessment
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65

Dear Representative Takai:

On behalf of the City and County of Honolulu Department of Design and Construction, thank you very much for your review of preliminary information on the Waimalu sewer project and your correspondence of June 13, 2004. We would like to take this opportunity to briefly respond to your comments and concerns prior to addressing them in the draft environmental assessment that is currently under preparation.

1. Construction Schedule Conflicts with H-1 Freeway Widening Project: The actual construction work for the sewer project is not expected to begin before the completion on the freeway widening unless there are significant delays on the freeway project. The sewer work located near the freeway that is proposed in our project could be performed in the later stages of the sewer project if necessary to avoid traffic problems. The City will monitor the progress of the freeway project and delay the start of the sewer project if necessary.

2. Work at the Pono Street and Ponohale Street Intersection: The majority of the sewer work at or near the intersection will be done by the State as part of the freeway widening project. This work was indicated by asterisks on the sketch in the earlier letter. The other sewer work in the area should have only minor impacts on the residents as it will involve lining of the sewers (without trenching) on Pono Street and Ponokaulike Street, and reconstruction of a segment of sewer in the vacant area under the viaduct. The residents in the Waimalu Gardens subdivision, however, will likely be faced with some traffic congestion during sewer work in Moanalua Road and Hekaha Street mauka of the freeway.

3. Community Meetings and Dissemination of Information. We were planning to hold a public information meeting specifically for residents and businesses in the area during the design phase once the alignments of the new sewer lines and project phasing/traffic

control requirements are better defined. The public information meeting would be used to also solicit input on the noise variance that would be required for night work and night operation of bypass/dewatering pumps. Another informational meeting with the participation of the contractor is proposed to be held prior to the start of construction to discuss construction and traffic control issues in more detail. Additional public meetings can be scheduled as required depending on the level of concern and expected impacts on residents and businesses.

As suggested, a website and hotline will be provided during the construction contract period to keep everyone affected by the construction informed and to address any concerns and impacts immediately. An attempt will be made encourage motorists to avoid the construction area by also posting information in newspaper traffic advisories and on electronic roadside billboards.

As recommended by the Aiea Neighborhood Board at its recent June 14 meeting, we will be direct mailing preliminary project information to all the residents in the project area. To obtain input on the Draft Environmental Assessment (DEA), a letter will be mailed to the residents to notify them of the availability of the DEA at the Aiea Public Library.

4. Paving of Streets. The City is currently reevaluating its policy on repaving the entire lane or roadway as part of utility construction work affecting only a portion of the roadway. Resolution of this issue will need to consider such factors as the appropriateness of using sewer funds for supplemental road maintenance work, and the requirements of other higher priority projects that need to be funded by finite road maintenance funds.

It is important to note that paving the entire roadway will not necessarily prevent pavement failure over the utility trenches or potholes from reoccurring. Proper compaction of the backfill material in utility trenches is necessary to minimize the probability of future pavement problems. A comprehensive trench backfill inspection and testing program during construction would help achieve this. Any added costs for improved construction quality control could be covered by the sewer funds allocated to the Waimalu project.

For other portions of the roadway, reconstruction of the road subbase in areas of distressed pavement should be considered as a long-term solution to the pothole problems. Due to drainage problems in the lower Waimalu area that result in road ponding or saturated conditions below the pavement, improvements to the drainage system should also be considered as part of the solution to resolving pothole problems. The use of sewer funds for pavement reconstruction beyond the pipe trench or for drainage improvements, however, is not justified.

Simply removing and replacing existing pavement without resolving the underlying problems causing the distressed pavement may not be cost-effective over the long-term.

Consideration, however, should also be given to the fact that delaying the repaving of roadways in poor condition may lead to higher road reconstruction costs in the future due to increased damage to the roadway subbase with time. The City should ideally allocate its limited funds to the most critical roadwork on Oahu.

Thank you very much for taking time to provide us with your valuable input. We look forward to continuing to work closely with you and the Waimalu community on this project. Please feel free to call me at 522-7425 if there are any questions or if you would like to discuss any aspect of the project in further detail.

Sincerely,

Roy K. Abe
Vice President

cc: Mr. Sung Ho Lai, Department of Design and Construction
Mr. Eldon Franklin, Department of Design and Construction
Mr. Timothy Steinberger Department of Design and Construction
Mr. William Clark, Aiea Neighborhood Board No. 20

AIEA NEIGHBORHOOD BOARD NO. 20
c/o AIEA LIBRARY • 99-143 MOANALUA ROAD • AIEA, HAWAII 96701
c/o NEIGHBORHOOD COMMISSION • 530 SOUTH KING STREET, ROOM 400 • HONOLULU, HAWAII 96813
PHONE: (808) 527-5749 • FAX: (808) 527-5760 • INTERNET: www.honolulu.gov

RECEIVED
JUN 18 2004
HAWAII PACIFIC ENGINEERS INC.

Mr. Roy K. Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813

Dear Mr. Abe:

Thank you for your presentation to the Aiea Neighborhood Board and the community on Monday, June 14, 2004. It was very informative and you handled questions and concerns from the community in a very professional manner.

As you are aware, there were some concerns raised by the Board and the community. Those concerns are as follows:

- That serious consideration is given to the repaving of whole sections of streets, which are affected by the trenching of the roadway. This will help eliminate street surface irregularities.
- Arrange and host special community meetings at regularly times and, if necessary, at other critical times to keep the community well informed of the progress of the project and also to entertain community concerns.
- Develop a web site, which will communicate to the community about the progress, concerns addressed and future meetings about the project.
- Establish a contact number at the site to receive phone calls from residents about immediate concerns. This phone should be answered by a "live" person during hours of construction and, if possible, early evening hours.
- Issue direct mail-outs to the community regarding the project. These mail-outs could be similar to the mail-outs being provided by the Department of Transportation Public Affairs Office about the H-1/Waimalu freeway-widening project.
- Coordinate with City projects in the area so roadways that are scheduled for repaving are not trenched thereby causing damage to the recently paved roadway.

If you have any questions about these concerns please contact me at 488-9873.

Again, thank you for your presentation and your attentiveness to the concerns of our community.

Sincerely

by William B. Clark
for William B. Clark, Chair

Oahu's Neighborhood Board System - Established 1973

Hawaii Pacific Engineers, Inc.
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June 23, 2004

Mr. William B. Clark, Chair
Aiea Neighborhood Board No. 20
98-1020 Kaonohi Street
Aiea, Hawaii 96701

SUBJECT: Waimalu Sewer Rehabilitation
Pre-assessment Consultation for Environmental Assessment
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65

Dear Mr. Clark:

On behalf of the City and County of Honolulu Department of Design and Construction, thank you very much for allowing us to discuss the Waimalu sewer project at the recent Aiea Neighborhood Board meeting and your follow up letter summarizing the Board's concerns. We would like to take this opportunity to briefly respond to the Board's concerns prior to addressing them in the draft environmental assessment that is currently under preparation.

1. Repaving of Whole Sections of Streets to Eliminate Street Surface Irregularities: The City is currently reevaluating its policy on repaving the entire lane or roadway as part of utility construction work affecting only a portion of the roadway. Resolution of this issue will need to consider such factors as the appropriateness of using sewer funds for supplemental road maintenance work, and the requirements of other higher priority projects that need to be funded by finite road maintenance funds. We anticipate that repaving of the entire street can be performed if the City's current policy is not revised and the budgeted funds are sufficient for the work.

   It is important to note that paving the entire roadway will not necessarily prevent pavement failure over the utility trenches or potholes from reoccurring. Proper compaction of the backfill material in utility trenches is necessary to minimize future pavement problems. This can be achieved through a comprehensive trench backfill inspection and testing program during construction that we plan to incorporate into the Waimalu project.

   For other portions of the roadway, reconstruction of the road subbase in areas of distressed pavement should be considered as a long-term solution to the pothole problems. Due to drainage problems in the lower Waimalu area that can result in water logged and weakened pavement subbase, improvements to the drainage system should also be considered as part of the solution to resolving pothole problems. The use of sewer funds for pavement reconstruction beyond the pipe trench or for drainage

improvements, however, is not justified. We understand that the City is considering performing some drainage improvements in Waimalu under a separate project.

Simply removing and replacing existing pavement without resolving the underlying problems causing the distressed pavement may not be cost-effective over the long-term. Consideration, however, also needs be given to the fact that delaying the repaving of roadways in poor condition may lead to higher road reconstruction costs in the future due to increased damage to the roadway subbase with time. The City should ideally allocate its limited funds to the most critical roadwork on Oahu. If funds are limited or insufficient for the Waimalu project, an attempt will be made to repave as much of the heavily traveled streets and/or in areas with distressed pavement as possible.

2. Arrange and Host Special Community Meetings: We were planning to hold a public information meeting specifically for residents and businesses in the area during the design phase once the alignments of the new sewer lines and project phasing/traffic control requirements are better defined. The public information meeting would be used to also solicit input on the noise variance that would be required for night work and night operation of bypass/dewatering pumps. Another informational meeting with the participation of the contractor is proposed to be held prior to the start of construction to discuss construction and traffic control issues in more detail. Additional public meetings can be scheduled as required depending on the level of concern and expected impacts on residents and businesses.

3. Develop a Web Site: As suggested, a website will be provided during the construction contract period to keep everyone affected by the construction informed. The website is expected to include a project description, contact information, discussions of pertinent issues and concerns, and upcoming meeting information. To view a sample sewer project website, we suggest visiting the website for the Kainehe Street project in Kailua at www.kainehe-hamakua-keolu-sewer.com/coninfo.htm.

4. Establish a Contact Phone Number to Receive Phone Calls About Immediate Concerns: A telephone hotline will be provided during the construction contract period to provide the latest project information and to address any concerns and impacts immediately. The hotline will to manned by knowledgeable personnel and it anticipated to be operational 24 hour per day, seven days a week.

5. Issue Direct Mailouts to the Community Regarding the Project: We will be direct mailing preliminary project information to all the residents in the project area. To obtain input on the Draft Environmental Assessment (DEA), a letter will be mailed to the residents to notify them of the availability of the DEA at the Aiea Public Library for review. Additional mailings will be performed later to inform residents of the website and meetings.

6. Coordinate with City Projects in the Area to Avoid Damage to Recently Paved Roadways: The Waimalu sewer project will be coordinated with other City and State projects to the extent possible to avoid trenching in newly paved roads.

We hope that we have adequately addressed the Aiea Neighborhood Board's concerns. We appreciate the interest that the Board has expressed in our project and the valuable input that has been provided thus far. We look forward to continuing to work closely with the Board and the rest of the Waimalu community on this project. Please feel free to call me at 522-7425 if there are any questions or if you would like to discuss any aspect of the project in further detail.

Sincerely,

Roy K. Abe
Vice President

cc: Mr. Sung Ho Lai, Department of Design and Construction

AIEA NEIGHBORHOOD BOARD NO. 20

c/o AIEA LIBRARY • 99-143 MOANALUA ROAD • AIEA, HAWAII 96701

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PHONE: (808) 527-5749 • FAX: (808) 527-5760 • INTERNET: www.co.honolulu.hi.us

REGULAR MEETING MINUTES
MONDAY, JUNE 14, 2004
AIEA LIBRARY CONFERENCE ROOM

Call to Order: Chair William Clark called the meeting to order at 7:40 p.m.

Members Present: Nelanette Araki, Jane Sugimura, Sandra Thompson, David Arakawa, Marty Aldinger, Robyn Blanpied, Wilbert Ho, William Clark, Scott Bell.

Members Absent: Tracy Arakaki (excused), Raymond Ancheta, Richard Rowland, Ruby Hargrave, Ronald Mobley, Carl Jacobs.

Guests: Tracy Kubota (Councilmember Gary Okino's staff), Tracy Burgo (Board of Water Supply), Michael Lyman, Mary S. Booth, Lt. Ben Ballesteros (Honolulu Police Department), Hiroko Nakamura (Councilmember Romy Cachola's Office staff), Frances Nakamura (Senator Donna Mercado Kim's Office staff), Stan Shiraki (Governor's Representative), Robert Aldinger, Representative Lynn Finnegan, Jerry Coffee, Senator Norman Sakamoto, Mercedes Maria Rabage, Richard Leong (Department of Design & Construction - Wastewater Division), Roy Abe (Hawaii Pacific Engineers), Representative K. Mark Takai, Richard Senelly (Earthplan), Mr. & Mrs. Alfred Dela Cruz; FF3 Tay Enos and Capt. Vernon Enriques (Honolulu Fire Department), Daniel Ho, and Marie Richardson (Neighborhood Commission Office staff).

Roll Call of Board Members: Neighborhood Assistant Richardson administered the roll call of Board members; a quorum was present with eight (8) members.

Public Service Reports:

Honolulu Fire Department (HFD) - FF3 Enos reported the following: 1) There were 1 structure, 1 brush, 1 rubbish, 5 vehicle and 1 cooking fire; 54 emergencies, 4 search/rescue and 14 miscellaneous alarms. 2) Fire Safety Tip: Check all electrical cords. Remove cords from under carpets and/or furniture. Avoid overloading extension cords. Replace frayed or cracked cords.

Sugimura arrived during this portion of the meeting. (9 members present)

Honolulu Police Department (HPD) – Lt. Ballesteros reported the following for May: 1) Out of a total of 7,545 calls for service in District 3, 1,884 or 24.97% were from the Aiea area: 42 auto thefts, 22 burglaries, 41 criminal property damage, 73 thefts, and 46 unauthorized entry into motor vehicle (UEMV). 2) The Department of Transportation Services and the Department of Health would like to introduce the Aloha Pace Car Pledge Program. It is a program that pledges to make all city streets safer and more livable when driving. Get your friends and neighbors to sign up. Log onto www.kamaainastreets.com for more information. Aloha Pace Car stickers were available at the sign-in table; the smaller stickers can be placed above the ASI line of the front windshield.

Questions, comments and concerns followed:

1. The ASI is described as the four-inch area at the top of your windshield.

2. Daniel Ho felt the number of calls for service for this area was high. Lt. Ballesteros explained that the number calls each month for this area includes every call received by 911. The formula that

Representative Finnegan said there are many complaints relating to the Salt Lake Boulevard and Moanalua Highway area; and mentioned there are different groups/taggers, websites, history, etc. She talked about putting together a meeting of coordinated efforts of HPD, Neighborhood Security Watches and residents on steps toward making a more permanent change. She will make this information available on her website in addition to being the coordinator on this effort.

3. In response to Ho's question regarding the population of Aiea, Chair Clark indicated he received a study from the University of Hawaii. According to the Aiea Area Community Profile, the population for this area is 41,276. Log onto www.uhfamily.hawaii.edu or call 956-4132. Representative Finnegan said if the Board wishes to get a better understanding of the information in the profile, she could make arrangements to have briefing to explain it.

4. Dela Cruz asked if there are any plans for development on the conservation area, mauka side of Kaamilo Street. Representative Takai suggested calling the Newtown Estate Association to get a more definitive answer.

Community Reports: Blanpied said neither Aiea Community Association nor the Aiea/Pearl City Vision Group held meetings last month. The next regular monthly meetings are: a) Aiea Community Association - on Monday, June 28, 2004, 7:00 p.m., at Aiea Intergenerational Center (across from Albero and Sakura Restaurants on Kauhale Street, Suite B3) http://www.aiea-community-assoc.org/; and b) Aiea/Pearl City Vision Group - on Monday, July 5, 2004, 7:00 p.m., at Waiau District Park Multipurpose Room at 7:00 pm.

Unfinished Business: None

New Business

Waimalu Sewer Rehabilitation - Roy Abe, Hawaii Pacific Engineers, along with Richard Leong, City's Department of Design and Construction – Wastewater Division, briefed the Board of the rehabilitation of the sewer system in the Waimalu area. Majority of the sewer basins were constructed in the mid to late 1950's and the sewers in the lower portion of the basin (south of Moanalua Road) are in poor condition due to ground settlement causing cracks, broken/separated joints and other defects in the sewer pipes allowing groundwater and rainwater to enter the lines.

During recent heavy rainstorms, sewage spills and backups occurred because of the inflow of rainwater into the sewer lines and overloading the system and exceeding its capacity. The basin consisting of gravity sewers serve primarily single-family residential parcels; the Waimalu Shopping Center and a medium density apartment zoned at the lower end of the basin.

The installation of new replacement sewer lines and repair work are proposed to resolve clogging/ sewage spill problems, capacity limitation and structural deficiencies. The construction work will be confined to the right-of-way of existing roads and easements in private property. Short-term construction impacts such as traffic congestion and restricted access near active construction areas; noise and dust generated from construction equipment and vehicles; and operation of sewage bypass and trench dewatering pumps at night will likely be required.

The construction cost for this project is estimated to be approximately $15.5 million; and is expected to begin in the second half of 2005 at the earliest; and is expected to last approximately 18 – 24 months.

Questions, comments and concerns followed:

1. Currently, they are going through a design process and permitting phase, so the project is anticipated to begin late 2005.

2. In response to the concern regarding repaving, Abe indicated it is a big issue and that there would be some trenching work across Moanalua Road and unfortunately some trenching across the new paving. The City would also like for the entire street to be repaved so it would be a matter of the budget.

3. Abe's understanding of the previous rains was a failure of the pump station where the pumps never kicked in, causing heavy flooding. However, the drainage pump station at Waimalu is still active and needed during heavy rainfalls when the water in the stream is actually higher than the low line area. The other problem is the one-way check valves that leak and causes the stream water to actually be pumped back into the drainage system and cause flooding.

4. Representative Takai mentioned in a letter to Abe that he was glad to hear that the project had been pushed back because of the timeline conflicts of the H-1 Freeway widening and the sewer rehabilitation projects. But he noted the following concerns: a) because of the involved significant trench work, he would insist that all of these roads be repaved (for example the significant problems with the repaving of the trench work of the water project at Moanalua Road); b) consideration for community meetings lower Waimalu and the Gardens areas, as done for the freeway widening project; c) a hotline number to handle complaints or concerns; and d) use of trenchless technology.

   Abe talked about the following types of technology being looked at: a) trenchless technology - using fiberglass liners in limited areas to repair only cracks; and b) a tunneling technique used possibly in the Kamehameha Highway crossing area.

   Representative Takai asked for follow-up comments regarding funding. Leong indicated that the Managing Director put out the word to do the trenching, but Leong understands, that the utility companies are objecting to it. He further noted that sewer funds are being used to do the sewer construction rehabilitation, but in the past, it included repaving of the trenched area; and though they wish there were more funding to repave from curb to curb and the entire length, they are still trying to resolve it.

5. Kubota said they've been receiving many calls from residents regarding the backup and though they've been explaining that the work will be getting done, the residents would like to know if they would be receiving any direct mailing about the project. Abe indicated that they've thought of sending out something about that.

6. Blanpied asked whether the Neighborhood Board Capital Improvement Project funding was used to resurface Moanalua Road. Kubota indicated yes and if it does happen, the funding won't be from the same budget.

7. Chair Clark said it appears that the Board should send a letter informing Hawaii Pacific Engineers of the concerns raised such: repaving of the whole road affected by the trenching; special meetings for the residents; developing a complaint hotline; establishing a website; direct mailing to the people being affected and explaining the project; and coordinating with City projects in the area so roadways scheduled for repaving are not trenched up again.

8. Another comment was whether the City would have to rebuild some of the treatment plants to accommodate the growth increase since some of the smaller treatment plants had been shut

down. Leong explained that two-sewer treatment plants in Kailua and Waimanalo service the system on the Windward side. Abe noted the reason for closing the small plants was to get the wastewater out of Kaneohe Bay and Pearl Harbor and to improve the water quality, which has been improved. Leong emphasized that the concern is being addressed.

Thompson moved, Arakawa seconded the motion to send a letter regarding the concerns/requests of the Board and community: a) repaving of the whole road affected by the trenching; b) set up special meetings for the residents to keep them informed of the progress; c) developing a complaint hotline on site; d) establishing a website to communicate the progress,; e) direct mailing of information regarding the project; f) and coordinate with other City projects in the area so roadways scheduled for repaving are not trenched up again. No more discussion followed. **The motion carried unanimously.**

Cluster Housing Permit Application at 99-144 Waiakea Place, Aiea Heights – Architect Richard Senelly of Earhplans, presented the proposed residential project located off of Aiea Heights Drive at the terminus of Waiakea Place (a private street). The parcel sits on four acres and is rectangular in shape. There will be 12 detached, single-family dwelling units, a new roadway proposed within the property boundaries, landscaping and a private park to be maintained by a community association.

The units will include six 3-bedroom and six 4-bedroom in four different configurations; and the ownerships of the units will be fee simple. As part of the 21-day Conceptual Review, an investigation report was prepared by Shinsato Engineering, Inc. and submitted to the Department of Planning and Permitting (DPP). The report did not identify any hazardous areas. A storm drainage system is proposed within the proposed roadways and collects runoff from the roadway, discharging the runoff beyond the roadway where it will continue to sheet flow toward Aiea Stream. The project will be constructed in one phase as soon as all approvals are obtained.

Questions, comments and concerns followed:

1. Senelly verified the location site as being the large parcel at the very end of Waikea Place; and he noted that the road is wide enough to take the flow of traffic; the sewers have been deemed adequate for the twelve houses and the water is available for the project.

2. Aldinger did site visit today and spoke with some of the residents. She expressed that the view was beautiful, however, there are no streetlights and she was concerned about the grading of the area. According to Senelly there will be very little grading required on this property. He also noted that Paul Thurston, owner, met with the four other lot owners to find out if there were things he could do to improve their situation. Aside of their mailboxes falling down, they mentioned landscaping will certainly improve the area. He will look into it.

3. Blanpied said since this is the second application for a cluster type development in this area, she asked whether there is way for the Board to get information about the differences between such developments types like condominium, multi family, cluster housing, single family dwellings, etc. Senelly suggested someone from the Department of Planning and Permitting to come and talk to the Board about the differences between development types. He briefly explained the cluster type housing development, which as an association would be responsible for maintaining the road and utilities on the site; it would not be dedicated or a burden to the taxpayers. Thompson noted it is a cheaper and safer way of developing with the allowable parcel amount. Senelly indicated the allowable density on this property would be for 18 houses, however, the development is less than the allowable.

Appendix B

Draft Environmental Assessment Comments and Responses

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

December 16, 2004

Mr. Sung Ho Lai
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawai'i 96813

Mr. Roy Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawai'i 96813

RECEIVED
DEC 17 2004
HAWAII PACIFIC ENGINEERS INC.

Dear Messrs. Lai and Abe:

The Office of Environmental Quality Control has the following comments on the November 12, 2004, draft environmental assessment for the Waimalu Sewer Rehabilitation Project, Tax Map Keys 9-8-10, 9-8-22, 9-8-23, 9-8-24, 9-8-26, 9-8-27, 9-8-28, and 9-8-65, in the judicial district of 'Ewa.

1. Traffic impact mitigation: Prior to implementation of the project, please contact the neighborhood boards and to inform them in advance of what areas of the Waimalu Sewerage District will be affected by road work and construction so that residents may find alternate motor routes.
2. Customer Education: As the disposal of grease in the sewer system remains problematic, the Office would like to suggest that the Department work in conjunction with the agency responsible for billing customers to send out a flyer asking customers not to dispose of grease in their sewer.

Thank you for the opportunity to comment. Please call Leslie Segundo at 586-4185 if you have any questions.

Sincerely,

GENEVIEVE SALMONSON
Director

Hawaii Pacific Engineers, Inc.

January 5, 2005

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of December 16, 2004. We offer the following responses to your comments:

1) Traffic Impact Mitigation. The City and its consultants intend to work closely with the Aiea and Pearl City neighborhood boards and area residents to provide the latest information on construction work and road closures. As noted in the DEA, information on affected roads will be provided through the major daily newspapers, a project website, electronic roadside message boards, and a telephone hotline to help motorists to avoid the area and minimize traffic impacts.

2) Customer Education. During the period of November 2003 to January 2004, the Department of Environmental Services (ENV) had the Board of Water Supply mail the enclosed public education brochure with the water/sewer billings of approximately 140,000 residential customers. The brochure contains information on prevention of spills by properly disposing of grease and other waste materials and also addresses prevention of wet weather spills. ENV has a comprehensive ongoing program to educate the public on proper grease disposal. For further information, please feel free to contact David Nagamine, ENV, at 692-5150.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
DEC 10 2004
HAWAII PACIFIC
ENGINEERS INC.

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

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to
File

December 1, 2004

Mr. Timothy E. Steinberger
Director
Department of Design and Construction
City and County of Honolulu
Attention: Mr. Sung Ho Lai
650 South King Street, 14th Floor
Honolulu, Hawaii 96813

Dear Mr. Steinberger:

SUBJECT: **Comments to the Draft Environmental Assessment for Waimalu Sewer Rehabilitation Tax Map Key: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii**

Our comments should be printed as follows:

"Project activities shall comply with the Administrative Rules of the Department of Health:

- Chapter 11-46 Community Noise Control.

"Hawaii Administrative Rule, Chapter 11-42, Vehicular Noise Control for Oahu, has been repealed."

Should there be any questions, please contact me at 586-4701.

Sincerely,

Russell S. Takata
Program Manager
Noise, Radiation & IAQ Branch

Hawaii Pacific Engineers, Inc.
[illegible]
HONOLULU, HAWAII 96813-2630
Phone: [illegible] Fax: [illegible]
E-mail: [illegible]

January 5, 2005

Mr. Russell Takata
State of Hawaii
Department of Health
Noise, Radiation and Air Quality Branch
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Dear Mr. Takata:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of December 1, 2004. We acknowledge your comments that the project activities will be required to comply with Chapter 11-46, Community Noise Control, and that Chapter 11-42, Vehicular Noise Control for Oahu, has been repealed. Appropriate revision will be made to the discussions pertaining to noise.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Leslie Segundo, Office of Environmental Quality Control

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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ENGINEERS INC.

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

In reply, please refer to:
EMD / WB

December 3, 2004

O9 8 010 etc B.wpd
W12 wb041035

Mr. Roy K. Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Subject: **Draft Environmental Assessment for Waimalu Sewer Rehabilitation**
Aiea, Oahu, Hawaii
TMK: (1) 9-8-010, 022, 023, 024, 026, 027, 028 and 065

Thank you for allowing the opportunity to review the above subject document which proposes the construction of new replacement sewer lines in the Waimalu area. We have the following comments to offer:

> We are in favor of sewer line reconstruction and improvements which will better service our communities. Therefore we have no objections to the plan and concur with its recommendations.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any questions, please contact the Planning & Design Section of our Branch at 586-4294.

Sincerely,

HAROLD K. YEE, P.E., CHIEF
Wastewater Branch

LNKM:erm

c: Mr. Sung Ho Hai, City & County of Honolulu, Wastewater Division

Hawaii Pacific Engineers, Inc.
[illegible]

January 5, 2005

Mr. Harold Yee, Chief
State of Hawaii
Department of Health
Wastewater Branch
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Dear Mr. Yee:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii
(Reply to EMB/WB 09 8 010 etc B.wpd, W12wb041035)

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of December 3, 2004. We acknowledge your comments indicating that DOH supports the sewer reconstruction project, requires conformance to the Chapter 11-62 regulations, and reserves the right to review the detailed plans for conformance to applicable rules.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Leslie Segundo, Office of Environmental Quality Control

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 9, 2004

LD-NAV

WAIMALUSEWERDEA.RCM

Honorable Timothy E. Steinberger, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 14th Floor
Honolulu, Hawaii 96813

RECEIVED
DEC 10 2004
HAWAII PACIFIC ENGINEERS INC.

Attention: Sung Ho Lai

Dear Mr. Steinberger

SUBJECT: Draft Environmental Assessment
Waimalu Sewer Rehabilitation

Thank you for the opportunity to review and comment on the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of the document pertaining to the subject matter to the following DLNR Divisions for their review and comment:

- Division of Aquatic Resources
- Division of Forestry and Wildlife
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Maui District Land Office

Enclosed please find a copy of the Commission on Water Resource Management and Engineering Division comments.

Based on the attached responses, the Department of Land and Natural Resources has no other comment to offer.

If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: MDLO
OEQC
HPEI

LINDA LINGLE
GOVERNOR OF HAWAII

'04 NOV 26 AM 11:30 ENG

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2004 NOV 29 P 3:51

PETER T. YOUNG
CHAIRPERSON
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DEPUTY DIRECTOR - WATER

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 23 2004
WAIMALUSEWERDEA.CMT

LD/NAV
Suspense Date: 12/09/04

MEMORANDUM:

TO: *XXX Division of Aquatic Resources
*XXX Division of Forestry & Wildlife
*XXX Division of State Parks
*XXX Engineering Division
*XXX Commission on Water Resource Management
*XXX Office of Conservation and Coastal Lands
*XXX Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment (DEA)
Waimalu Sewer Rehabilitation
Hawaii Pacific Engineers, Inc. for C&CoH DDC

Please review the DEA pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

***Note: One copy of the DEA is available for your review in the Land Division Office, Room 220.**

Should you have any questions, please contact Nicholas A. Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments.

(X) Comments attached.

Date: 11/29/04

Signed: Andrew M. Monden

Name: Andrew M. Monden

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LA/NAV

Ref.: WAIMALUSEWERDEA.COM

COMMENTS

(X) **We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone D. The National Flood Insurance Program does not have any regulations for development within this area.**

( ) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

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

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: ______________________

( ) Other: ______________________

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed: Andrew M. Monden
for ERIC T. HIRANO, CHIEF ENGINEER

Date: 11/29/04

LINDA LINGLE
GOVERNOR OF HAWAII

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

DIVISION OF AQUATIC RESOURCES	
DIRECTOR	Suspense Date:
COMMISSIONER	Draft Reply
AQ. REC/ENV	Reply Direct
AQ. RES/PLN	Comments
STAFF SVCS	Information
FISH DEV	Comp Act & File
STATISTICS	
AFRC	
EDUCATION	
OFFICE SVCS	04-882
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PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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DEPUTY DIRECTOR - LAND

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DEPUTY DIRECTOR - WATER

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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

November 23 2004 — LD/NAV
WAIMALUSEWERDEA.CMT — Suspense Date: 12/09/04

MEMORANDUM:

TO:
*XXX Division of Aquatic Resources
*XXX Division of Forestry & Wildlife
*XXX Division of State Parks
*XXX Engineering Division
*XXX Commission on Water Resource Management
*XXX Office of Conservation and Coastal Lands
*XXX Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment (DEA)
Waimalu Sewer Rehabilitation
Hawaii Pacific Engineers, Inc. for C&CoH DDC

Please review the DEA pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

***Note: One copy of the DEA is available for your review in the Land Division Office, Room 220.**

Should you have any questions, please contact Nicholas A. Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no comments. FONSI — ( ) Comments attached.

Signed: [signature]

Date: 12/6/04

Name: 12-6-04

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AQUATIC RESOURCES

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
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DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 23 2004
WAIMALUSEWERDEA.CMT

LD/NAV
Suspense Date: 12/09/04

MEMORANDUM:

TO: *XXX Division of Aquatic Resources
*XXX Division of Forestry & Wildlife
*XXX Division of State Parks
*XXX Engineering Division
*XXX Commission on Water Resource Management
*XXX Office of Conservation and Coastal Lands
*XXX Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment (DEA)
Waimalu Sewer Rehabilitation
Hawaii Pacific Engineers, Inc. for C&CoH DDC

RECEIVED
2004 DEC -2 P 3:31
LAND DIVISION

Please review the DEA pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

***Note: One copy of the DEA is available for your review in the Land Division Office, Room 220.**

Should you have any questions, please contact Nicholas A. Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no comments.

( ) Comments attached.

Date: NOV 30 2004

Signed: Paul J. Conry

Name: PAUL J. CONRY, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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LAND
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 23 2004
WAIMALUSEWERDEA.CMT

LD/NAV
Suspense Date: 12/09/04

MEMORANDUM:

TO: *XXX Division of Aquatic Resources
*XXX Division of Forestry & Wildlife
*XXX Division of State Parks
*XXX Engineering Division
*XXX Commission on Water Resource Management
*XXX Office of Conservation and Coastal Lands
*XXX Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment (DEA)
Waimalu Sewer Rehabilitation
Hawaii Pacific Engineers, Inc. for C&CoH DDC

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2004 DEC -3 P 1:45
LAND DIVISION

Please review the DEA pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

***Note: One copy of the DEA is available for your review in the Land Division Office, Room 220.**

Should you have any questions, please contact Nicholas A. Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

(✓) We have no comments.

( ) Comments attached.

Date: 12/3/04

Signed: Cecil Santos

Name: CECIL SANTOS
CS

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
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NOV 29 A 9:42

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 23 2004 LD/NAV
WAIMALUSEWERDEA.CMT Suspense Date: 12/09/04

MEMORANDUM:

TO: *XXX Division of Aquatic Resources
*XXX Division of Forestry & Wildlife
*XXX Division of State Parks
*XXX Engineering Division
*XXX Commission on Water Resource Management
*XXX Office of Conservation and Coastal Lands
*XXX Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment (DEA)
Waimalu Sewer Rehabilitation
Hawaii Pacific Engineers, Inc. for C&CoH DDC

Please review the DEA pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

***Note: One copy of the DEA is available for your review in the Land Division Office, Room 220.**

Should you have any questions, please contact Nicholas A. Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments. (x) Comments attached.

Signed: Edwin T. Sakoda

Date: 12/2/04 Name: Edwin T. Sakoda

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON

MEREDITH J. CHING
CLAYTON W. DELA CRUZ
JAMES A. FRAZIER
CHIYOME L. FUKINO M.D.
LAWRENCE H. MIKE M.D. J.D.
STEPHANIE A. WHALEN

YVONNE Y. IZU
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

DEC - 2 2004

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: for: Yvonne Y. Izu, Deputy Director (Edwin T. Sakoda)
Commission on Water Resource Management (CWRM)

SUBJECT: Draft Environmental Assessment, Waimalu Sewer Rehabilitation, City and County of Honolulu, Dept of Design and Construction.

FILE NO.: WAIMALUSEWERDEA.CMT

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

[ ] We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

[ ] We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[ ] A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.

[ ] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.

[ ] Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

[ ] We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.

[ ] If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).

[X] If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.

[ ] OTHER:

If there are any questions, please contact David Higa 587-0249.

Hawaii Pacific Engineers, Inc.

January 5, 2005

Ms. Dierdre S. Mamiya, Administrator
Dept. of Land & Natural Resources
Land Division
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Mamiya:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of December 9, 2004.

We acknowledge the comment from the Engineering Division that the project site is in Zone D based on the Flood Insurance Rate Map. We further acknowledge the comment from the Commission on Water Resource Management that a stream alteration permit may be required if the project alters the bed or banks of a stream channel. We do not anticipated that the bed or banks of Waimalu Stream will be altered by the project.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Leslie Segundo, Office of Environmental Quality Control

UNIVERSITY OF HAWAI'I AT MANOA
Environmental Center

December 16, 2004
EA 0310

Mr Sing Ho Lai
Deptartment of Design and Construction
650 South King St., 11th floor,
Honolulu, Hawai'I. 96813

Dear Mr. Lai:

Draft Environmental Assessment (DEA)
Waimalu Sewer Rehabilitation
Aiea, Oahu

The City and County of Honolulu purpose to rehabilitate the sewers in a 117 acre area of the Waimalu Sewerage Basin. Specific project activities include trenching and installation of a new trunk sewer. The trunk sewer would replace the Waimalu Stream inverted siphon that crosses Kamehameha Highway at Hekaha street. The estimated cost of the project is $15.5 million. Construction is due to begin at the earliest in late 2005 and require approximately 18 to 24 months.

The Environmental Center conducted an in house review of this draft EA with the assistance of Kerry Halford.

This draft EA is written clearly and covers the potential impacts and mitigation measures adequately. Of concern is the potential impact to neighboring structures, due to the soft soils located in the vicinity. Will jet grouting be employed to improve the strength of the existing soils?

Thank you for the opportunity to review this Draft EA.

Sincerely,

John T. Harrison, Ph.D.
Environmental Coordinator

cc: OEQC
Hawaii Pacific Engineers
James Moncur, WRRC
Kerry Halford

2500 Dole Street, Krauss Annex 19, Honolulu, Hawai'I 96822-2313
Telephone: (808) 956-7361 • Facsimile: (808) 956-3980

Hawaii Pacific Engineers, Inc.

January 5, 2005

Dr. John T. Harrison
Environmental Center
University of Hawaii at Manoa
2500 Dole Street
Krauss Annex 19
Honolulu, Hawaii 96822-2313

Dear Dr. Harrison:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of December 16, 2004.

We acknowledge your comments indicating that potential impacts and mitigation measures are adequately addressed and your concern for potential impacts to neighboring structures due to soft soils in the area. As noted in the discussion on impacts and mitigation measures for utilities, roads and other infrastructure in Chapter 4, pumping of groundwater from the trenches will be controlled to reduce the amount of potential ground settlement and damage to homes and other structures. The contractor will be required to monitor the area for possible ground settlement. A geotechnical consultant has been retained for the design and construction phases to provide input on shoring and dewatering requirements and settlement issues. Jet grouting is expected to be used at the trench excavation to reduce the amount of groundwater infiltration into the trenches and to improve pipeline subgrade support conditions. Although jet grouting locally strengthens the soil, it would not necessarily reduce settlement unless the grouting is performed to a firm substrate. Jet grouting down to firm substrate is not expected to be cost-effective due to the depth of jet grouting that would required to accomplish this in the Waimalu area.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Leslie Segundo, Office of Environmental Quality Control

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 ULUOHIA STREET, SUITE 215, KAPOLEI, HAWAII 96707
TELEPHONE : (808) 692-5054 FAX: (808) 692-5857

RECEIVED
04 DEC 17 P3:24
DESIGN & CONSTRUCTION
WASTEWATER DIVISION

JEREMY HARRIS
MAYOR

LARRY J. LEOPARDI, P.E.
DIRECTOR AND CHIEF ENGINEER
JOSEPH MAGALDI
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 04-1049

December 10, 2004

MEMORANDUM

TO: TIMOTHY E. STEINBERGER, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTENTION: SUNG HO LAI

FROM: LARRY LEOPARDI, P.E., DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF FACILITY MAINTENANCE

04 DEC 17 PM 12:39
RECEIVED
DEPT OF DESIGN & CONSTR
C & C OF HONOLULU

SUBJECT: **DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR WAIMALU SEWER REHABILITATION, NOVEMBER 12, 2004**

Thank you for the opportunity to review the subject DEA.

We agree with the inclusion in Chapter 3 Section P of this report regarding the City's updated policy on pavement restoration for trenching within City roadways and expressing the importance of proper trench backfill and compaction. We request that flowable fill or Controlled Low Strength Material be evaluated and/or considered for use as backfill material.

However, it is not necessary to make assumptions regarding the City's roadway rehabilitation and resurfacing program in the DEA. References to prioritizing resurfacing of the roadways and the extent of roadway reconstruction, unless this work will be done as part of the sewer rehabilitation project, should be removed from the DEA.

We are encouraged that alternate construction methods, including microtunneling and directional drilling, were investigated and it is unfortunate that that they have not been determined as cost effective for this project. To lessen the impact on the project roadway pavements we request that open trench construction be kept to a minimum and utilized only where less destructive methods, such as "cured-in-place" and "pipe bursting", may not be feasible.

Should you have any questions, please call Charles Pignataro of our Division of Road Maintenance, at 484-7697.

cc: Office of Environmental Quality Control
Hawaii Pacific Engineers, Inc.

Hawaii Pacific Engineers, Inc.

January 5, 2005

Mr. Larry J. Leopardi, P.E.
Director and Chief Engineer
City and County of Honolulu
Department of Facility Maintenance
1000 Uluohia Street, Suite 215
Kapolei, Hawaii 96707

Dear Mr. Leopardi:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of December 10, 2004. We offer the following responses to your comments:

1) Trench Backfill. We anticipate specifying extensive use of flowable fill/Controlled Low Strength Material for backfilling trenches to help ensure a sound base for the trench repaving and to expedite construction.

2) Deletion of References to the City's Roadway Rehabilitation and Resurfacing Program. As suggested, references to prioritizing resurfacing of the roadways and the extent of roadway reconstruction will be deleted.

3) Construction Methods. Following the completion of exploratory soils boring work, the use of trenchless methods such as microtunneling and directional drilling will be reevaluated. Open trench construction will be minimized to the extent practicable. The use of "cured-in-place pipe" and "pipe bursting" methods, however, will not be applicable to most lines in the project since the existing lines do not have adequate pipe slopes due to severe settlement problems in the area. In many cases, the existing lines exhibit reverse slopes due to "sags" in the lines and therefore must be entirely reconstructed.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Leslie Segundo, Office of Environmental Quality Control

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4414 • FAX: (808) 527-6743
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

JEREMY HARRIS
MAYOR

ERIC G. CRISPIN, AIA
DIRECTOR

BARBARA KIM STANTON
DEPUTY DIRECTOR

RECEIVED
DEC 16 2004
HAWAII PACIFIC ENGINEERS INC.

December 15, 2004

04WWB181 (SG)
2004/ELOG-2599

MEMORANDUM

TO: TIMOTHY E. STEINBERGER, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: SUNG HO LAI
WASTEWATER DIVISION

FROM: for Dennis M. Nishimura
ERIC G. CRISPIN, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: **DRAFT ENVIRONMENTAL ASSESSMENT FOR WAIMALU SEWER REHABILITATION**
TMK: 9-8-010, 22, 23, 24, 26, 27, 28, & 65

This is in response to Mr. Roy K. Abe's letter dated November 18, 2004 requesting comments for the proposed rehabilitation of the municipal sewer system in the Waimalu area. We have reviewed the Draft Environmental Assessment (DEA) and have the following comments:

1. The new replacement sewer lines are not within the Special Management Area (SMA). Therefore, a SMA Use Permit is not required. The SMA line is makai of Kamehameha Highway.

2. Page 1-7: The Department of Planning and Permitting does not issue permits to discharge effluent (non-stormwater). Is this wastewater discharge?

3. Page 3-3 (Surface Water Quality):
   a. Define "severe storm".
   b. If the impending storm is not "severe", will the contractor still be allowed to continue working?

4. City and County of Honolulu General Plan (page 3-13): Add the clarification that the 1992 *General Plan of the City and County of Honolulu* was last amended on October 3, 2002 to reflect the changes in Population Distribution percentages in Resolution 02-205, CD1. A copy may be downloaded from our website at www.honoluludpp.org/planning/ or obtained from the City's "Municipal Reference" Library at 523-4577.

5. Primary Urban Center Development Plan (PUC DP) (page 3-14): Add the clarification that the PUC DP was approved on June 21, 2004 as Ordinance 04-14. The "2002" date for the PUC DP cited on pages 2-19 and 3-12 should also be revised. The DEA discussion regarding the PUC DP, if based on a 2002 draft, should be verified and revised based on provisions of the adopted PUC DP.

If you have any questions, please contact Mr. Scott Gushi of the Wastewater Branch at 523-4886.

EGC:dl
[341976]

cc: Ms. Genevieve Salmonson (State Dept. of Health)
Mr. Roy Abe (Hawaii Pacific Engineers, Inc.)

Hawaii Pacific Engineers, Inc.

January 5, 2005

Mr. Eric G. Crispin, AIA, Director
City and County of Honolulu
Department of Planning & Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

Dear Mr. Crispin:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of December 15, 2004. We offer the following responses to your comments:

1) Special Management Area (SMA). We acknowledge DPP's determination that a SMA Use Permit is not required since the SMA line is makai of Kamehameha Highway.

2) Permit to Discharge Effluent. The permit to discharge effluent, which is administered by the Department of Environmental Services, will be deleted from the list of permits since the discharge of dewatering effluent will be covered by the NPDES construction dewatering permit.

3) Surface Water Quality. The sentence mentioning "severe storm" will be revised to read, "The contractor will be required to curtail work and take action as necessary to protect the work site and stored materials from storm damage and erosion." We recognize that predicting the severity of storms in advance may be difficult, and that the severity of storms requiring mitigative action by the contractor may vary depending on the characteristics of the work site and pollution controls that are in place.

4) City and County of Honolulu General Plan. Revisions will be included as suggested to indicate the year of the Revised General Plan and the date and scope of the latest amendment.

5) Primary Urban Development Center Plan. Revisions will be included as suggested to indicate the June 21, 2004 approval date of the PUC DP. No other revisions to the discussions related to the PUC DP were determined to be required.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final

environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Leslie Segundo, Office of Environmental Quality Control

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4529 • FAX: (808) 523-4730 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

GEORGE "KEOKI" MIYAMOTO
DIRECTOR

ROBERT J. FISHMAN
DEPUTY DIRECTOR

RECEIVED
DEC 30 2004
HAWAII PACIFIC
ENGINEERS INC.

December 28, 2004

TPD04-00636
TP11/04-84603

MEMORANDUM

TO: TIMOTHY E. STEINBERGER, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: SUNG HO LAI

FROM: GEORGE "KEOKI" MIYAMOTO, DIRECTOR

SUBJECT: WAIMALU SEWER REHABILITATION

In response to the November 18, 2004 letter from Hawaii Pacific Engineers, Inc., we have reviewed the draft environmental assessment (EA) for the subject project. The following comments are the result of this review:

1. Chapter 1 Project Description, A. Introduction and General Background (Pages 1-1 to 1-3) should include the purpose for the draft EA being prepared.

2. Chapter 3 Potential Impacts and Proposed Mitigation Measures, L. Traffic Impacts should be revised to:

   a. State that all existing traffic control devices within the roadway right-of-way shall be replaced after construction is completed.
   b. State whether night construction work on Kauwa Street would be proposed to the merchants of Waimalu Shopping Center to minimize construction impacts.
   c. Add Route 53 (Honolulu-Pacific Palisades) to the list of bus routes that use Kamehameha Highway.

Should you have any questions regarding these comments, please contact Faith Miyamoto of the Transportation Planning Division at Local 6976.

for GEORGE "KEOKI" MIYAMOTO

cc: Mr. Roy Abe
Hawaii Pacific Engineers, Inc.

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control

Hawaii Pacific Engineers, Inc.

January 5, 2005

Mr. George Keoki Miyamoto
City and County of Honolulu
Department of Transportation Services
650 South King Street
Honolulu, HI 96813

Dear Mr. Miyamoto:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of December 28, 2004. We offer the following responses to your comments:

1) Chapter 1 Project Description – Discussion on DEA Purpose. A brief discussion on the purpose of the environmental assessment will be included as suggested.

2) Chapter 3 Potential Impacts and Proposed Mitigation Measures – Discussions on Traffic Impacts. As suggested, the following items will be included:

   a. All traffic control devices within the road right-of-way will be replaced after the construction is completed.
   b. Night construction work on Kauwa Street will be proposed to the merchants and owners of the Waimalu Shopping Center to minimize construction impacts.
   c. Route 53 (Honolulu-Pacific Palisades) will be added to the list of Kamehameha Highway bus routes.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Leslie Segundo, Office of Environmental Quality Control

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

December 6, 2004

Mr. Timothy E. Steinberger, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 14th Floor
Honolulu, Hawaii 96813

RECEIVED
DEC 8 - 2004
HAWAII PACIFIC ENGINEERS INC.

Attention: Mr. Sung Ho Lai

Dear Mr. Steinberger:

Subject: The Draft Environmental Assessment for Waimalu Sewer Rehabilitation, TMK: 9-8-10, 22, 23, 24, 26 27, 28 and 65

Thank you for the opportunity to comment on the subject document.

The construction drawings should be submitted for our review and approval. The construction schedule should be coordinated to minimize impact to the water system.

If you have any questions, please contact Joseph Kaakua at 748-5442.

Very truly yours,

K. Smith

for CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Mr. Roy Abe, Hawaii Pacific Engineers, Inc.
Ms. Genevieve Salmonson, OEQC

Hawaii Pacific Engineers, Inc.

January 5, 2005

Mr. Clifford S. Jamile
Manager and Chief Engineer
Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Jamile:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of December 6, 2004. We acknowledge your comments indicating that the construction drawings should be submitted for review and approval by BWS and that the construction schedule should be coordinated to minimize impacts to the water system.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Leslie Segundo, Office of Environmental Quality Control

FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

3375 KOAPAKA STREET, SUITE H425 • HONOLULU, HAWAII 96819-1869
TELEPHONE: (808) 831-7761 • FAX (808) 831-7750 • INTERNET: www.honolululfd.org

JEREMY HARRIS
MAYOR

ATTILIO K. LEONARDI
FIRE CHIEF

JOHN CLARK
DEPUTY FIRE CHIEF

RECEIVED
DEC 13 2004
HAWAII PACIFIC ENGINEERS INC.

December 8, 2004

TO: TIMOTHY E. STEINBERGER, P. E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTENTION: SUNG HO LAI, CIVIL ENGINEER V
WASTEWATER DIVISION

FROM: ATTILIO K. LEONARDI, FIRE CHIEF

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
WAIMALU SEWER REHABILITATION
TAX MAP KEYS: 9-8-010: 022, 023, 024, 026, 027, 028, AND 065
AIEA, OAHU, HAWAII

We received a letter dated November 18, 2004, from Mr. Roy K. Abe of Hawaii Pacific Engineers, Inc., requesting that our comments on the above-mentioned project be submitted to you.

The Honolulu Fire Department requires that the following be complied with:

1. Maintain fire apparatus access throughout the construction site.
2. Notify the Fire Communication Center at 523-4411 regarding any interruption of the existing fire hydrant system.

Should you have any questions, please call Battalion Chief Lloyd Rogers of our Fire Prevention Bureau at 831-7778.

Attilio K. Leonardi

ATTILIO K. LEONARDI
Fire Chief

AKL/SK:jl

cc: Mr. Roy K. Abe, Vice President, Hawaii Pacific Engineers, Inc.
Ms. Genevieve Salmonson, Director, Office of Environmental Quality Control

Hawaii Pacific Engineers, Inc.

January 5, 2005

Mr. Atilio Leonardi
Fire Chief
Honolulu Fire Department
3375 Koapaka Street, Suite 425
Honolulu, Hawaii 96819

Dear Chief Leonardi:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of December 8, 2004. We acknowledge your comments indicating that maintenance of fire apparatus access will be required throughout the site and that the Fire Communication Center (Ph. 523-4411) will be required to be notified regarding any interruption of the existing fire hydrant system.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Leslie Segundo, Office of Environmental Quality Control

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111
http://www.honolulupd.org
www.honolulu.gov

JEREMY HARRIS
MAYOR

BOISSE P. CORREA
CHIEF

GLEN R. KAJIYAMA
PAUL D. PUTZULU
DEPUTY CHIEFS

OUR REFERENCE CS-KP

November 30, 2004

RECEIVED
DEC 3 – 2004
HAWAII PACIFIC ENGINEERS INC.

TO: TIMOTHY E. STEINBERGER, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: BOISSE P. CORREA, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR WAIMALU SEWER REHABILITATION, TMK: 9-8-10, 22, 23, 24, 26, 27, 28, AND 65, AIEA, OAHU, HAWAII

Thank you for the opportunity to review and comment on the subject project.

We are concerned about the noise and the traffic congestion generated by this project. In spite of mitigation measures, noise and traffic during construction will inevitably cause an increase in complaints and calls for police service to the area.

If there are any questions, please call Captain Randal Macadangdang of District 3 at 455-9055 or Ms. Carol Sodetani of the Support Services Bureau at 529-3658.

BOISSE P. CORREA
Chief of Police

By Karl Godsey
KARL GODSEY
Assistant Chief of Police
Support Services Bureau

cc: Ms. Genevieve Salmonson (OEQC)
✓ Mr. Roy Abe (Hawaii Pacific Engineers, Inc.)

Serving and Protecting with Aloha

Hawaii Pacific Engineers, Inc.

January 5, 2005

Mr. Boisse Correa
Chief of Police
Honolulu Police Department
801 South Beretania Street
Honolulu, Hawaii 96813

Dear Chief Correa:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of November 30, 2004. We acknowledge your comments indicating your concern about the noise and traffic congestion generated by the project and the probable resulting increase in complaints and calls for police service to the area despite mitigation measures.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Leslie Segundo, Office of Environmental Quality Control

HOUSE OF REPRESENTATIVES

STATE OF HAWAII
STATE CAPITOL
HONOLULU, HAWAII 96813

January 12, 2005

Mr. Roy K. Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Thank you for providing the opportunity again to comment on the draft environmental assessment (DEA) for rehabilitation of the sewer system in the Waimalu area.

In a letter dated June 13, 2004, I had indicated my concerns and provided suggestions to keep residents up to date on the project. Among the concerns I had listed were the conflict or overlapping of your project with the H-1 Widening Project. I was pleased that your letter of June 18, 2004 indicated that the actual construction of the project was not expected to begin until after the completion of the H-1 widening project and that work located near the freeway could be delayed if necessary.

Another concern I had indicated was the work that was to be done at the intersection of Pono Street and Ponohale Street. It was reassuring to know, from your response letter, that the City and State have coordinated their efforts and the work on that part of the project will be done during the current widening project.

Finally, as I had suggested, I was pleased to know that a website and hotline will be provided for the duration of the construction to keep residents informed and address concerns or complaints.

However, I would urge you to reconsider repaving the entire width of the roads that will be affected by this project. I realize that a policy issued on September 30, 2004 no longer required contractors to do so any longer. While the actual construction of the project has not begun, plans for this project were started before the issuance of the September 30, 2004 policy. Therefore, I feel that this project should be grandfathered into the previous policy, which required contractors to repave the entire width of the street. Not doing so will only create problems down the road costing more to the taxpayers of the State.

Representative K. Mark Takai
State Capitol, Room 403 • Honolulu, Hawaii 96813
Phone: (808) 586-8455 • Fax: (808) 586-8459 • E-mail: reptakai@capitol.hawaii.gov

Thank you for the opportunity to provide comments on this project. If you have any questions regarding these comments, please contact me.

With warmest aloha,

K. Mark Takai
State Representative
34th House District

KMT:km

cc: Representative Blake Oshiro
Representative Lynn Finnegan
Representative Roy Takumi
Senator David Ige
Councilmember Gary Okino
Rodney Haraga, State Department of Transportation Director
Scott Ishikawa, State Department of Transportation Spokesperson
Edward Y. Hirata, Department of Transportation Services Acting Director
Sung Ho Lai, Department of Design and Construction
Aiea Neighborhood Board
Pearl City Neighborhood Board
Aiea Community Association
Pearl City Community Association

Hawaii Pacific Engineers, Inc.

February 1, 2005

Representative Mark Takai, District 34
The House of Representatives
415 South Beretania Street, Room 403
Honolulu, Hawaii 96813

Dear Representative Takai:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of January 12, 2005. We appreciate your past input on various project concerns, including the need to minimize traffic impacts and the importance of keeping residents informed and addressing their concerns. The remainder of this letter addresses your suggestion that the entire width of the streets be paved as part of the sewer rehabilitation project.

The Department of Design and Construction has unfortunately indicated that funding will not be available for full paving of the streets as part of the project. The use of sewer funds for the paving of the entire roadway cannot be justified since the current City policy, which was issued on September 30, 2004, is to not require curb-to-curb repaving on utility projects. Although the planning work for the project was performed prior to the new policy, it would be difficult to justify "grandfathering" of the additional paving work since the currently ongoing design work for the project was started in November of 2004. It is anticipated that there will be no extra funds in the $15.5 million budget for supplemental paving work due to rapidly escalating local construction costs. Higher bid prices are resulting from the increased level of construction activity fueled by Hawaii's improving economy and the large recent increases in worldwide steel prices.

The City currently does not anticipate providing supplemental funds to cover repaving of the entire roadway under our project. It has been determined that the repaving of the Waimalu streets would be more effectively addressed by a separate repaving project in the future. The City has found through experience that the quality of the repaving work under a separate dedicated road paving project is generally higher than the quality of repaving work performed under a utility project. Due to many higher priority projects, the City is not able to provide the desired degree of coordination and quality control inspection for the full repaving of roads under utility projects at the present time.

Based on our assessment of the pavement conditions in the Waimalu area relative to other City streets, we do not anticipate that the net cost to taxpayers will be increased by deferring the full

repavement of the Waimalu streets. Streets in the poorest condition should be given highest priority for repaving and it would not be prudent to transfer limited funds or delay work for other streets in worse condition in order to fully repave the streets in our sewer project.

The trench repair work on our project should generally be of higher quality than that of other past projects due to improved pavement repair design requirements and enhanced quality control during construction. The City's latest pavement repair policy memorandum includes the following:

- Certification that the repair work has been performed in accordance with City standards and/or specifications.
- Improved training of inspectors to effectuate good quality trench restoration and pavement repair.
- Two year warranty period.
- Thicker asphalt concrete pavement section (4-inches thick) over and within one foot of each side of the trench.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment.

We look forward to working closely with you and your staff in coordinating future informational meetings for affected residents and timely dissemination of relevant project information. In the meantime, should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Lynn Kurashima, Dept. of Design and Construction
Stanley Katsura, Dept. of Design and Construction
Laverne Higa Nance, Dept. of Facility Maintenance
Leslie Segundo, Office of Environmental Quality Control

verizon

Verizon Hawaii Inc.
P.O. Box 2200
Honolulu, HI 96841

December 1, 2004

RECEIVED
DEC 3 - 2004
HAWAII PACIFIC ENGINEERS INC.

Mr. Roy K. Abe
Hawaii Pacific Engineers, Inc.
1132 Bishop Street, Suite 1003
Honolulu, Hawaii 96813-2830

Dear Mr. Abe:

Subject: **Draft Environmental Assessment for Waimalu Sewer Rehabilitation**

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the Waimalu Sewer Rehabilitation project in the Aiea area.

Verizon Hawaii has aerial and underground facilities within the proposed project area. Further review is required by Verizon Hawaii during the design stages of the project to determine if there will be any impact to these facilities.

If you have any questions or require assistance in the future on this project, please call Les Loo at 840-5861.

Sincerely,

Jill Z. Lee
Section Manager
Outside Plant Engineering

Hawaii Pacific Engineers, Inc.

January 5, 2005

Ms. Jill Z. Lee, Section Manager
Outside Plant Engineering
Verizon Hawaii, Inc.
P.O. Box 2200
Honolulu, Hawaii 96841

Dear Ms. Lee:

SUBJECT: Draft Environmental Assessment (DEA) for Waimalu Sewer Rehabilitation
TMK: 9-8-10, 22, 23, 24, 26, 27, 28, and 65, Aiea, Oahu, Hawaii

On behalf of the Department of Design and Construction, City and County of Honolulu, thank you very much for reviewing the subject document and for your correspondence of December 1, 2004. We acknowledge your comments indicating that Verizon Hawaii has aerial and underground facilities with the project area, and that further review by Verizon Hawaii is required during the design stage to assess the impact to your facilities.

Thank you for your interest and participation in the DEA review phase of the environmental review process. A copy of your letter and this response will be included in the final environmental assessment. Should you have any questions, please call me at 522-7425 or Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

Roy K. Abe
Vice President

cc: Sung Ho Lai, Dept. of Design and Construction
Leslie Segundo, Office of Environmental Quality Control

AIEA NEIGHBORHOOD BOARD NO. 20

c/o AIEA LIBRARY • 99-143 MOANALUA ROAD • AIEA, HAWAII 96701

c/o NEIGHBORHOOD COMMISSION • 530 SOUTH KING STREET, ROOM 400 • HONOLULU, HAWAII 96813
PHONE: (808) 527-5749 • FAX: (808) 527-5760 • INTERNET: www.co.honolulu.hi.us

REGULAR MEETING MINUTES
MONDAY, JANUARY 10, 2005
AIEA LIBRARY CONFERENCE ROOM

CALL TO ORDER: First Vice Chair Sugimura called the meeting to order at 7:30 p.m.

MEMBERS PRESENT: Raymond Ancheta, Scott Bell, Jane Sugimura, Sandra Thompson, Robyn Blanpied, Ronald Mobley, Marty Aldinger, Tracy Arakaki, Wilbert Ho.

MEMBERS ABSENT: William Clark (excused), Ruby Hargrave, David Arakawa, Carl Jacobs (excused), Nelanette Araki (excused), Richard Rowland.

GUESTS: Joyce Oliveira (Councilmember Romy Cachola's Office staff), Amy Tsuneyoshi (Board of Water Supply), Claire Tamamoto (Aiea Community Association), Rod Ohira (Honolulu Advertiser), Capt. Randy Macadangdang, Lt. Guy DeMello, Sgt. Russell Perkins, Sgt. Steven Ariola (Honolulu Police Department), Sheryl Soriano (Senator Kim's Office staff), Reena Rabago (Representative Oshiro's Office staff), Stan Shiraki (Governor's Representative), Tracy Kubota (Councilmember Okino's Office staff), Warren Munro, David Pagan, Mark Arinaga (Aiea High School Campus Council), Roy Abe (Hawaii Pacific Engineers), Sung Ho Lai (Department of Design and Construction – Wastewater Division), Sam Kong (Aiea/Pearl City Business Association – Aiea Florist), Keith Kurahashi (Kusao and Kurahashi, Inc.), Norman Akita, Michael Lyman, Scott Ishikawa (State Department of Transportation), Kivalu Ramalan (PCI), Representative K. Mark Takai, Daz Spencer (Waimomi Outdoor Circle), Andrew Konopka, Peter Radulovic (Mayor's Representative), Kivalu Ramanlan (Preferred Constructors, Inc.) Emily Viglielmo (Leeward Current), Marie Richardson (Neighborhood Commission Office staff).

ROLL CALL OF BOARD MEMBERS: The roll call of Board members was administered. A quorum was not present with seven (7) members.

INTRODUCTION OF GUESTS: Tonight's guests introduced themselves.

Board member Arakaki arrived at 7:35 p.m.; a quorum is now present with eight (8) members. Vice Chair Sugimura encouraged all to sign in on the guest attendance sheet.

PUBLIC SERVICE REPORTS:

Honolulu Fire Department (HFD) – No representative present; no report.

Honolulu Police Department (HPD) – Sgt. Russell Perkins reported the statistics from October through December. 1) For October - 22 auto thefts, 17 auto theft recoveries, 35 burglaries, 23 criminal property damage, 1 sex assault, 66 thefts, and 50 unauthorized entries into motor vehicles (UEMV). Of 7,580 calls in District 3, 1,988 calls were from Aiea. 2) For November - 24 auto thefts, 20 auto theft recoveries, 25 burglaries, 20 criminal property damage, 1 sex assault, 58 thefts and 51 UEMV's. Of 7,241 total calls in District 3, 1,906 calls were from Aiea. 3) For December - 29 auto thefts, 30 auto theft recoveries, 20 burglaries, 32 criminal property damage, 1 sex assault, 70 thefts and 78 UEMV's. Of 7,542 total calls in District 3, 2,097 were from Aiea.

Comments followed: 1) With regards to property and auto thefts, this area encompasses Pearlridge Shopping Center, which is a high crime volume area. 2) Capt. Randy Macadangdang, new to this area,

Air Force Fuel Pipeline Project update - Deferred until February 2005.

Waimalu Sewer Rehabilitation update - Roy Abe of Hawaii Pacific Engineers (HPE) and Sung Ho Lai of the Department of Design and Construction (DDC), Wastewater Division and Project Manager, presented an update of the project. As part of the project, a draft environmental assessment was prepared. A copy is available at the Aiea Public Library for review.

Presented back in June 2004, major sewer reconstruction work in the lower basin is proposed to reconstruct about 9,000 linear feet of sewer line in the Waimalu area. Key concerns include traffic congestion and the quality of repaving. While addressing the traffic impacts, a traffic control plan is being prepared to address issues such as crossing Kamehameha Highway, working during off peak hours, night work consideration and application of a noise variance. With regards to road paving, the City's policy in the past was when doing trenching projects to do repaving of the whole road. The administration has since issued a memorandum no longer requiring paving the whole road and a project that would need to be done separately. The deadline for comments was December 23, 2004, but it has been extended until January 24, 2005.

Questions, comments and concerns followed:

1. HPE will respond to all comments and publish it in the final environmental assessment. With respect to paving, the City is unable to speculate at this time, however, the indication was when funding would be available to do repaving. With reference to ADA, improvements would occur only if the work moves into the sidewalks, however, in this case the project is only in the roadway.

2. Mobley noted that the memorandum change also includes change to the types of patching. Abe agreed that the quality of repair is being improved (equal or better).

3. Representative Takai asked whether earlier letters should be rewritten to restate the community's conflicts and concerns. Concerns still not addressed were failing trench work and challenges facing the sewer system. Abe noted HPE did try to address the paving issue. HPE will address other comments and include responses into the final EA.

4. Other comments were: the City takes way too much time getting anything done; coordinating both City and State projects to minimize the inconvenience; whether the new policy would have an impact on Aiea Heights Road; clarification whether the project will be paved edge to edge; guidelines to decide whether trenching is lousy; the City and State needs to better write their contracts; ways of testing soil compaction to alleviate sagging following paving the trench, etc.

H-1/Waimalu freeway widening update – Scott Ishikawa, State Department of Transportation, updated on: 1) Moanlua/H-1 Freeway resurfacing between Kalihi Street and Aloha Stadium is substantially complete with lighting improvements being done near the H-1 Middle Street cutoff. 2) Residents leaving or entering the Waimalu Gardens area are being asked to use a detour onto Ponohale Street while work continues on Pono Street. Phone hotline for both projects is 587-6316 and the website is h1widening.com. 3) The state is required by federal consent decree to modify about 1,720 ADA ramps statewide. Contractor, Site Engineering Inc. is doing the modification of the existing ADA sidewalks ramps and new curb ramps along Kamehameha Highway (Pearlridge Shopping Center to Sears Distribution Center; Lumiauau to Kipapa Street; and reconstruction on Ala Ike Street fronting Leeward Community College). 4) Work is being done along Kamehameha Highway near the intersections of Arizona Street/Halawa Drive and Arizona Memorial Place/Kalaloa Street as part of the replacement of Halawa Stream Bridge project. The ongoing work is building a temporary crossing for drivers while the contractor replaces the existing bridge. 5) Director Haraga and Ishikawa would be in attendance at the