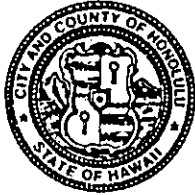


DEPARTMENT OF DESIGN AND CONSTRUCTION  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 523-4564 • FAX: (808) 523-4567

JEREMY HARRIS  
MAYOR



RECEIVED RANDALL K. FUJIKI, AIA  
DIRECTOR

'99 MAR 23 A 8:44  
ROLAND D. LIBBY, JR., AIA  
DEPUTY DIRECTOR

REC'D. QUALITY CONTROL  
DCP 99-173

March 17, 1999

Mr. Gary Gill, Director  
State of Hawaii  
Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Final Environmental Assessment for the  
Kainehe Street, Hamakua Drive, and Keolu Drive Reconstructed Sewer Project  
Kailua, Oahu, Hawaii (TMKs:4-2-01, 03, 16, 82, 89, 90, 95; 4-3-57)

The City and County of Honolulu, Department of Design and Construction (DDC) has reviewed and responded to comments related to the Draft Environmental Assessment (EA) received during the 30-day comment period which commenced on November 23, 1998 and ended on December 23, 1998. DDC has determined that the Kainehe Street, Hamakua Drive, and Keolu Drive Reconstructed Sewer Project will not have significant environmental effects and hereby issues a Finding of No Significant Impact (FONSI). Please publish this FONSI notice in the April 8, 1999 edition of *The Environmental Notice*.

We have enclosed the following items for your review:

1. One copy of the OEQC Bulletin Publication Form along with a computer diskette containing the project summary.
2. Four copies of the Final EA
3. One copy of the proposed distribution list; and
4. One copy of the "Letter to Participants."

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Mr. Gary Gill  
Page 2  
March 17, 1999

The following information is provided in accordance with the requirements for a Notice of Determination:

Identification of Proposing Agency:

City and County of Honolulu, Department of Design and Construction.

Identification of Approving Agency:

City and County of Honolulu, Department of Design and Construction

Brief Description of Proposed Action:

The proposed action involves the replacement of approximately 8,000 lineal feet of 18-inch to 27-inch reinforced concrete pipe of the Kailua wastewater collection system. The proposed improvements are needed to replace existing pipe sections with structural deficiencies caused by corrosion, deterioration and soil settlement over the years. In addition, the proposed improvements will increase the capacity of the sewer system which is currently inadequate to accommodate design peak flows. In the long term, the new pipe line section would be less prone to leaks, breaks or failures.

Determination:

Finding of No Significant Impact (FONSI)

Reasons Supporting Determination:

The FONSI determination of the proposed project was based on the following significance criteria in accordance with the Hawaii Administrative Rules 11-200-12:

- *The proposed action does not involve an irrevocable commitment or loss of or destruction of unique natural or cultural resources:*

The proposed pipeline will be installed beneath the existing roadway which has already been significantly disturbed from previous construction activities (other utility installations, road construction). Thus, no unique natural or cultural resource should be destroyed or loss as a result of the proposed project.

Mr. Gary Gill  
Page 3  
March 17, 1999

The State Historic Preservation Division (SHPD) has no known historic or cultural records within the project corridor since no archaeological work has been conducted in the area. However, since SHPD has indicated that historic sites including human burials have been found in Jaucus sand deposits in the vicinity of the project, there is a potential for disturbing such sites during construction activities. Thus, the proposed project will be coordinated with SHPD. Construction of the proposed project will be confined to road right-of-ways, which are areas that have previously been disturbed. Consequently, there is a low probability of encountering significant historical sites. Should evidence of historic sites be encountered during construction, all activities in the area of the find shall cease, and the State Historic Preservation Division shall be notified immediately.

- *The proposed action does not curtail the range of beneficial uses of the environment:*

The proposed project is consistent with the County's General Plan and the DDC's planning standards and will be compatible with the uses of the surrounding area. However, the proposed project is expected to temporarily curtail the use of the commercial areas along the project corridor since construction activities will take place within road right-of-ways, resulting in temporary traffic disruptions. Access to properties adjacent to the project site will also be temporarily affected by construction activities since traffic congestion may discourage potential customers from entering the general area. In addition, residents and visitors driving through Kailua town may be inconvenienced since the project route affects major collector roads. An approved traffic control plan will be used to ensure efficient movement through the construction area.

- *The proposed action is in concert with the State's long-term environmental policies, goals and guidelines as expressed in Chapter 343, HRS, and any revisions and amendments thereto, court decisions and executive orders:*

The proposed project is consistent with the State's Land Use Plan which is in concert with all applicable policies, goals and guidelines. The proposed project does not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 343 of the Hawaii Revised Statutes.

The State's environmental policy is to conserve the natural resources and enhance the quality of life. Since the existing pipelines are deteriorated and structurally deficient, the proposed improvements would help minimize the occurrence of wastewater pipe failures which can typically result in unpleasant wastewater back-ups, spills, roadway

Mr. Gary Gill  
Page 4  
March 17, 1999

damages and traffic problems. Spills of untreated wastewater could also contaminate the surrounding environment. In the long term, the new pipeline section would be less prone to leaks, breaks or failure than the existing system and would thereby help to preserve and enhance the surrounding environment.

- *The proposed action does not substantially affect the economic or social welfare of the community or State:*

During construction, access to properties adjacent to the project site may be disrupted and traffic congestion may discourage potential customers from entering Kailua town. As a result, the economic welfare of businesses near the project site could be temporarily affected. However, local material suppliers and dining establishments may benefit from the project due to their proximity and increased amount of construction workers in the area. Another positive economic impact is the short-term production of construction related jobs. Upon completion of the project, the economic situation should return to the existing condition. Thus, no substantial impacts to the economic or social welfare of the community or State are anticipated.

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

The proposed project will not directly result in an increase of population in the area. The proposed improvements are needed so that the wastewater system can accommodate current design peak flows, as well as demands of future land uses projected by the City's Development Plan.

- *The proposed action does not substantially affect public health:*

Construction activities will generate short-term impacts with the potential for affecting public health. Such short-term impacts include noise and dust which will be minimized through the implementation of the mitigative measures previously identified in Section 5. These impacts are addressed and regulated through the permit processes established by the appropriate regulatory agencies. In addition, the contractor will be directed to communicate with the community to mitigate public concerns during construction.

- *The proposed action does not involve a substantial degradation of environmental quality:*

The proposed project does not involve a substantial degradation of environmental quality since the existing physical aspects of the surrounding area will be preserved. The proposed project will help to protect the environment by preventing pipe failures and consequent wastewater spills to the surrounding environment.

- *The proposed action is individually limited and cumulatively, does not have a considerable adverse effect upon the environment or involve a commitment for larger actions:*

The proposed action, either individually or cumulatively, will not have a considerable adverse effect on the environment. The proposed project addresses a direct need to replace a section of the Kailua wastewater collection system that is badly deteriorated and does not involve a commitment for any larger action.

- *The proposed action does not substantially affect rare, threatened or endangered species or habitats:*

There are no known rare, threatened or endangered species or habitat associated with the project site. Construction of the proposed project will be confined to road right-of-ways and easement areas which have previously been disturbed.

- *The proposed action does not detrimentally affect air or water quality or ambient noise levels:*

Short-term impacts on air and water quality, as well as noise, may occur during the construction period, but will be mitigated by normal construction practices and will be regulated by the project plans and specifications. Upon completion of the proposed project, the surrounding neighborhoods would return to the existing condition.

- *The proposed action does not affect an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary or coastal waters:*

The majority of the proposed project is not located in an environmentally sensitive area such as a flood plain or a tsunami zone. However, a small portion of the proposed project is located within a flood hazard district, where the pipeline crosses beneath Kaelepulu Stream. No long term impacts are expected since the newly

Mr. Gary Gill  
Page 6  
March 17, 1999

constructed pipeline is not expected to raise any existing flood elevations. A "Flood Hazard District Certification" along with a "No Rise Certification" shall be completed to comply with state and federal flood regulations and to ensure that the proposed project will not adversely affect the established flood elevations.

The project is also not located on unique geologically hazardous lands. No significant adverse impacts on fresh or coastal waters are expected.

- *The proposed action does not substantially affect scenic vistas and viewplanes identified in county or state plans or studies:*

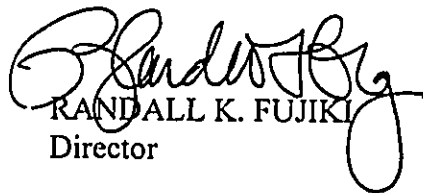
No scenic vistas or viewplanes should be affected since the proposed project consists of replacing a section of the wastewater line which will be laid beneath the existing ground.

- *The proposed action does not require substantial energy consumption:*

During the construction period, a substantial amount of energy would not be required for the construction activities. Following construction, the improved Kailua wastewater collection system will have a negligible effect upon energy consumption.

Should you have any questions, please contact Sung Ho Lai of the Department Design and Construction at 527-5398.

Very truly yours,

  
RANDALL K. FUJIKI  
Director

Enclosures

cc: Henry S. Morita, Akinaka & Associates, Ltd.

APR 8 1999

1999-04-08-0A-~~FEA~~-Kailua Sewer  
Rehabilitation Project  
FINAL ENVIRONMENTAL ASSESSMENT

FILE COPY

For the  
**KAINEHE STREET, HAMAKUA DRIVE AND  
KEOLU DRIVE RECONSTRUCTED SEWER PROJECT**  
Kailua, Oahu, Hawaii  
TMKs: 4-2-01, 03, 16, 82, 89, 90, 95; 4-3-57

**PROPOSING AGENCY:**

City & County of Honolulu  
Department of Design and Construction  
650 South King Street  
Honolulu, Hawaii 96813

**RESPONSIBLE OFFICIAL:**

  
\_\_\_\_\_  
RANDALL K. FUJIKI  
DIRECTOR

MAR 19 1999

Date

**PREPARED BY:**

Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96813

**MARCH 1999**

This Environmental Document Was Prepared Pursuant to Chapter 343, Hawaii Revised Statutes

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## 1. INTRODUCTION

### 1.1 PURPOSE AND NEED

The purpose of the proposed project is to replace approximately 8,000 lineal feet of the City and County of Honolulu, Department of Environmental Services' Kailua wastewater collection system. Over the years, corrosion, deterioration and soil settlement have resulted in structural deficiencies in sections of the existing system, which traverses Kainehe Street, Hamakua Drive and Keolu Drive. Such conditions resulted in frequent odor complaints, grease back-ups and requests for cleaning of the wastewater lines.

Replacement of pipe sections are required when settlements exceed acceptable maintenance standards. Hydraulic improvements are also needed so that the system can accommodate current design peak flows, as well as demands of future land uses projected by the City's Koolaupoko Development Plan. Provisions of Chapter 343, Hawaii Revised Statutes are applicable since the Department of Design and Construction (DDC) proposes to use County funds and lands.

### 1.2 PROJECT SUMMARY

Proposing Agency: Department of Design and Construction  
City and County of Honolulu  
650 South King Street, 2<sup>nd</sup> Floor  
Honolulu, Hawaii 96813  
Contact: Sung Ho Lai @ 527-5398

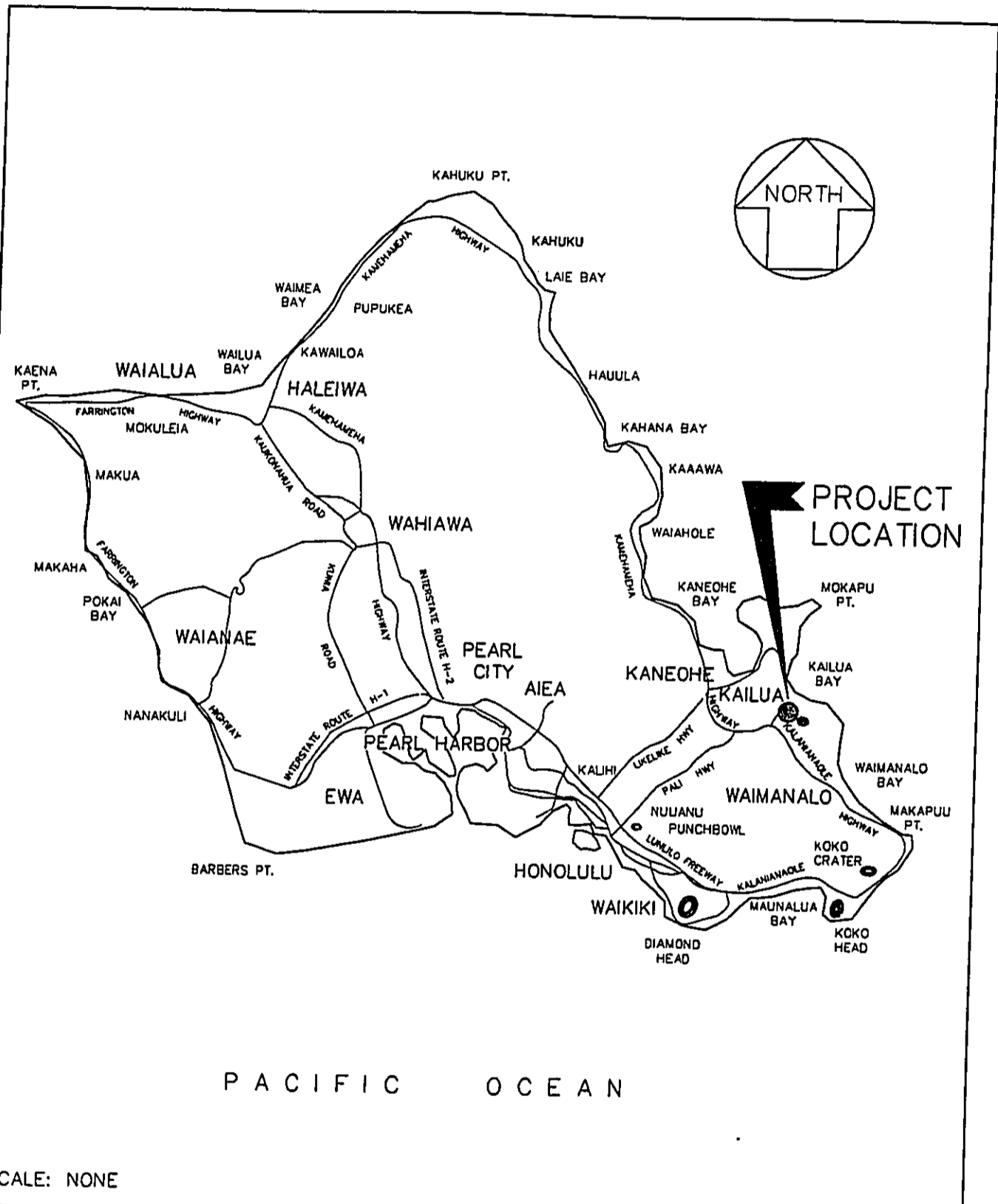
Approving Agency: Department of Design and Construction  
City and County of Honolulu  
650 South King Street, 2<sup>nd</sup> Floor  
Honolulu, Hawaii 96813

Preparer of EA: Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817  
Contact: Henry S. Morita @ 536-7721

Proposed Action: Replace approximately 8,000 lineal ft. of 18-inch to 27-inch wastewater mains and associated appurtenances

Project Name: Kainehe Street, Hamakua Drive and Keolu Drive  
Reconstructed Sewer Project

Project Location: Kailua, Oahu, Hawaii (See Exhibits 1-1 & 1-2)  
Tax Map Key: 4-2-01, 03, 16, 82, 89, 90, 95; 4-3-57  
Existing Land Uses: County and State Roads  
State Land Use District: Urban  
City and County of Honolulu Zoning: R-5, PD-H, A-2, B-2, I-2, P-2  
Land Ownership: City and County of Honolulu



PACIFIC OCEAN

SCALE: NONE

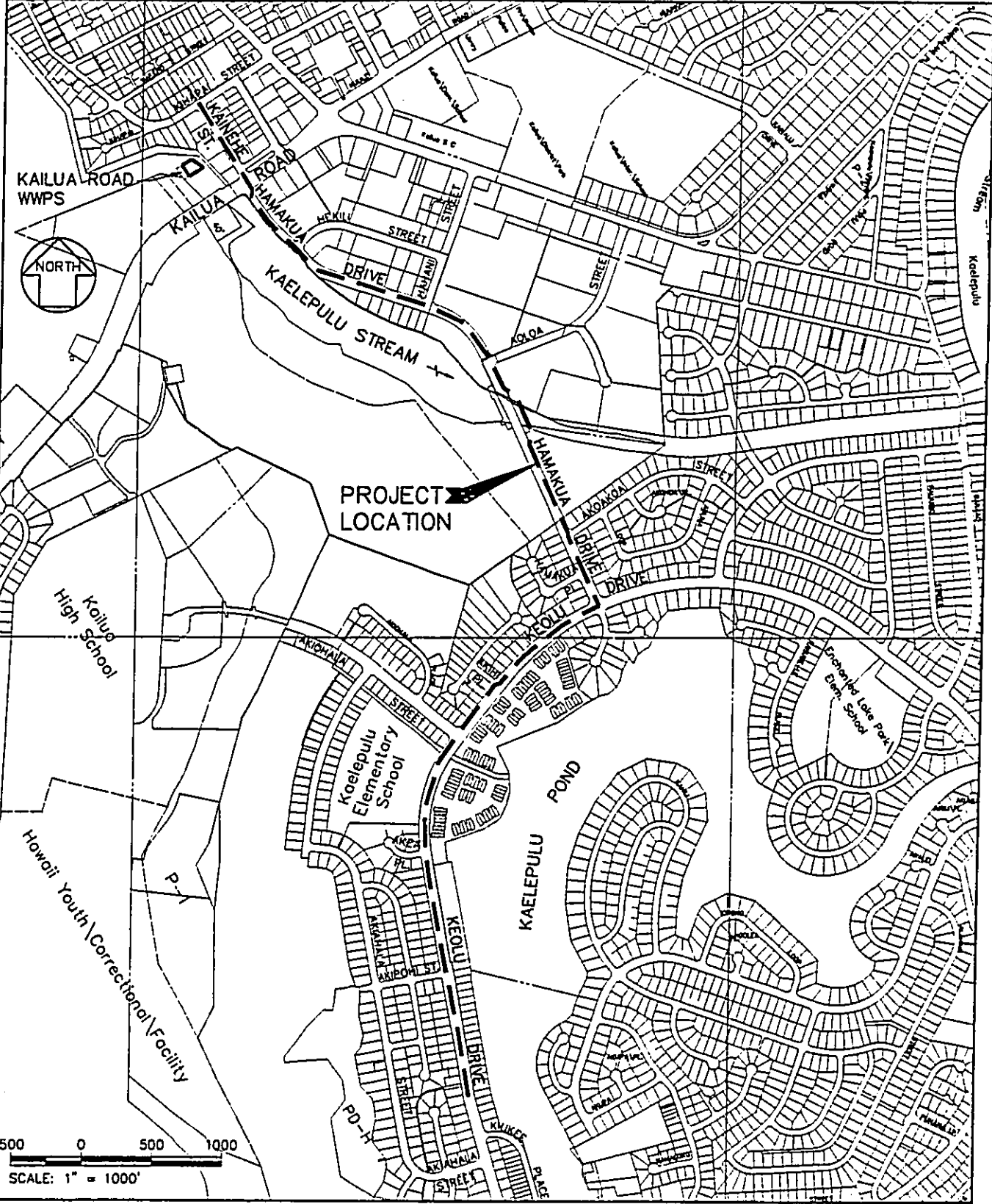
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 OPER: CKY, LMUW  
 REVISED: 1/27/99

KAINEHE STREET, HAMAKUA DRIVE, KEOLU DRIVE  
 RECONSTRUCTED SEWER PROJECT  
 KAILUA, OAHU, HAWAII

**EXHIBIT**

**LOCATION MAP**

**1-1**



FILE: Ex1-2  
 SCALE: 1" = 1000  
 BEC: 1/24/97  
 PM: OPER: CKY, LMIW  
 REVISED: 03/11/99

KAINEHE STREET, HAMAKUA DRIVE AND KEOLU DRIVE  
 RECONSTRUCTED SEWER PROJECT  
 KAILUA, OAHU, HAWAII

# VICINITY MAP

**EXHIBIT**  
**1-2**

## 2. DESCRIPTION OF THE PROPOSED PROJECT

### 2.1 BACKGROUND

The "Islandwide Sewer Adequacy Project," by Akinaka/Fukunaga Engineering Joint Venture, dated July 1989, indicated that sections of the Kailua wastewater collection system were hydraulically inadequate based on the projected land use of the City & County of Honolulu's Koolauoko Development Plan (Development Plan). Although the Development Plan does not predict a substantial increase of development in the district, the existing collection system is inadequate to handle current and future peak flows.

Additional studies involving the Ahuimanu/Kaneohe/Kailua area focused on the infiltration/inflow conditions of the wastewater system. Smoke testing "Kailua and Kaneohe-Ahuimanu Smoke Testing Report" by Barrett Consulting Group, dated April 1993 and an infiltration/inflow study "Ahuimanu-Kaneohe-Kailua Infiltration/Inflow Report," by Barrett Consulting Group, dated March 1992 contributed to the awareness of the system's physical status.

The "Interim Condition Assessment of the Sewage Collection System" by Fukunaga & Associates, Inc. dated August 1994, indicated the following:

- Pipelines in Hamakua Drive and Keolu Drive are in various stages of deterioration. Corrosion rating ranges from 2 (initial stages of deterioration) to 5 (rebar completely corroded, pipe wall completely eroded, ground/backfill exposed).
- Settlement and premature failure of the wastewater lines can be expected in the vicinity of Kukilakila Cluster Development (Keolu Drive).

On August 24, 1998, a section of the existing 27-inch wastewater line on Hamakua Drive at Hahani Street collapsed, resulting in an 8 foot sinkhole. City crews bypassed the collapsed section before any wastewater spill occurred. This incident reinforces the need to replace the deteriorated pipe sections along the project route.

### 2.2 EXISTING SYSTEM

The existing system transports wastewater by gravity from the tributary areas to the Kailua Road Wastewater Pump Station as shown in Exhibit 2-1. The wastewater collection systems were constructed incrementally by the City between 1958 and 1969. Reconstructed wastewater lines were installed in Hamakua Dr. (1983) and Keolu Dr. (1984). Unlined reinforced concrete pipe (RCP) was





EXHIBIT

2-1

KANEHE STREET, HAMAKUA DRIVE AND KEOLU DRIVE  
 RECONSTRUCTED SEWER PROJECT  
 KAILUA, OAHU, HAWAII

EXISTING WASTEWATER SYSTEM MAP

LEGEND

- (703) MANHOLE IDENTIFICATION (ISAP)
- (8) SEWER PIPE I.D.

SCALE: NONE



selected for 18" and larger pipelines in consideration of cost and availability. Unlined concrete pipes are vulnerable to structural and corrosion failures. Specific sections that were studied include the following:

- "Kaelepulu District Trunk Sewers, Section 2", 18 inch and 24 inch RCP, constructed in 1969.
- "Keolu Drive Reconstructed Sewer", 24 inch RCP, constructed in 1984.
- Extension, Widening and Permanent Improvements of Kailua Business District", 12 inch and 36 inch RCP, constructed in 1958.
- Keolu Drive Extension" (30+91 to 50+60), 27 inch RCP, constructed in 1985.

Laterals that connect individual homes to the system are infrequent since most existing laterals connect to parallel collectors along sections of Hamakua Drive and Keolu Drive. Inspection of the "as-built" plans showed 14 single laterals and 10 double laterals connected to the pipeline, generally by chimneys due to the depth of the mains. Six single laterals connect to manholes producing a total of 30 connections to the proposed replacement line.

### 2.3 PROJECT LOCATION

The proposed project is located along Kainehe Street, Hamakua Drive, and Keolu Drive as previously shown in Exhibit 1-1 and Exhibit 1-2. All construction will be within City roadways or easements. Hamakua Drive and Keolu Drive are major collector roads with four traveled lanes with medians on Keolu Drive and part of Hamakua Drive. Residences front Keolu Drive and the southerly section of Hamakua Drive. Commercial enterprises front Kainehe Street and the northerly section of Hamakua Drive. Wetlands and the Kaelepulu Stream occupy the central section of Hamakua Drive.

### 2.4 PROPOSED IMPROVEMENTS

The Preliminary Engineering Report for the project initially evaluated 9 different alternatives to repair, replace and/or relieve the inadequate sections of the Kailua wastewater collection system (further discussed in Section 6). The proposed action, or "Alternative 7" was ultimately selected as the preferred alternative

The proposed action involves the replacement of approximately 8,000 lineal feet of 18-inch to 27-inch reinforced concrete pipe in the Kailua wastewater collection system and is based on the peak discharge of a 2-Year, 6-Hour storm event. Replacing the deteriorated sections of pipe with an entirely new system will

improve hydraulics (higher flow velocities), reduce odor complaints and grease build ups that result in pipe cleanings. In addition, the probability of the deteriorated pipe sections collapsing during cleaning is also eliminated. As mentioned previously, a section of pipe has already collapsed in August of 1998 at Hamakua Drive and Hahani Street. Trenchless technology methods, which can reduce traffic, noise and dust impacts, will be evaluated during the design phase of the project.

The proposed improvements will not only replace a pipeline section with structural deficiencies, but will also increase the capacity of the wastewater system to meet the intent of the demands of the Development Plan projected land use while conforming to the City and County of Honolulu Department of Design and Construction's (DDC) Design Standards. The intent of the standards is procedural and presents design requirements to facilitate the approval process. Deviations from the standards may be acceptable due to existing conditions or to allow the designer to apply his engineering knowledge and experience.

The following table shows the major components of the proposed pipe replacement.

**Major Components of the Proposed Action**

	PIPE DIAMETER	LENGTH OF PIPE (lineal feet)
KEOLU DRIVE	21-inch	450 l.f.
	24-inch	1720 l.f.
	27-inch	1590 l.f.
HAMAKUA DRIVE	27-inch	4750 l.f.
KAINEHE STREET	12-inch	375 l.f.

## 2.5 DEVELOPMENT SCHEDULE AND COST

The capital cost for the proposed project is estimated at \$15.1 million at 1998 prices. A detailed breakdown of the costs are shown in Appendix A. Construction of the project is anticipated to commence in the year 2001, and would require approximately 2 years to complete. A specific project schedule will be determined following the final design of the project.

### 3. ENVIRONMENTAL SETTING

#### 3.1 TOPOGRAPHY

The project alignment is essentially between the shoreline of Enchanted Lake and the Kawainui Marsh both of which are remains of ocean embayments. Finish grades along the roadways vary between 6.3 feet and 17.4 feet above mean sea level. The greatest change in elevation is located in vicinity of the Hamakua/Keolu Drives intersection. Flat grades are typical in the project area.

#### 3.2 GEOLOGY

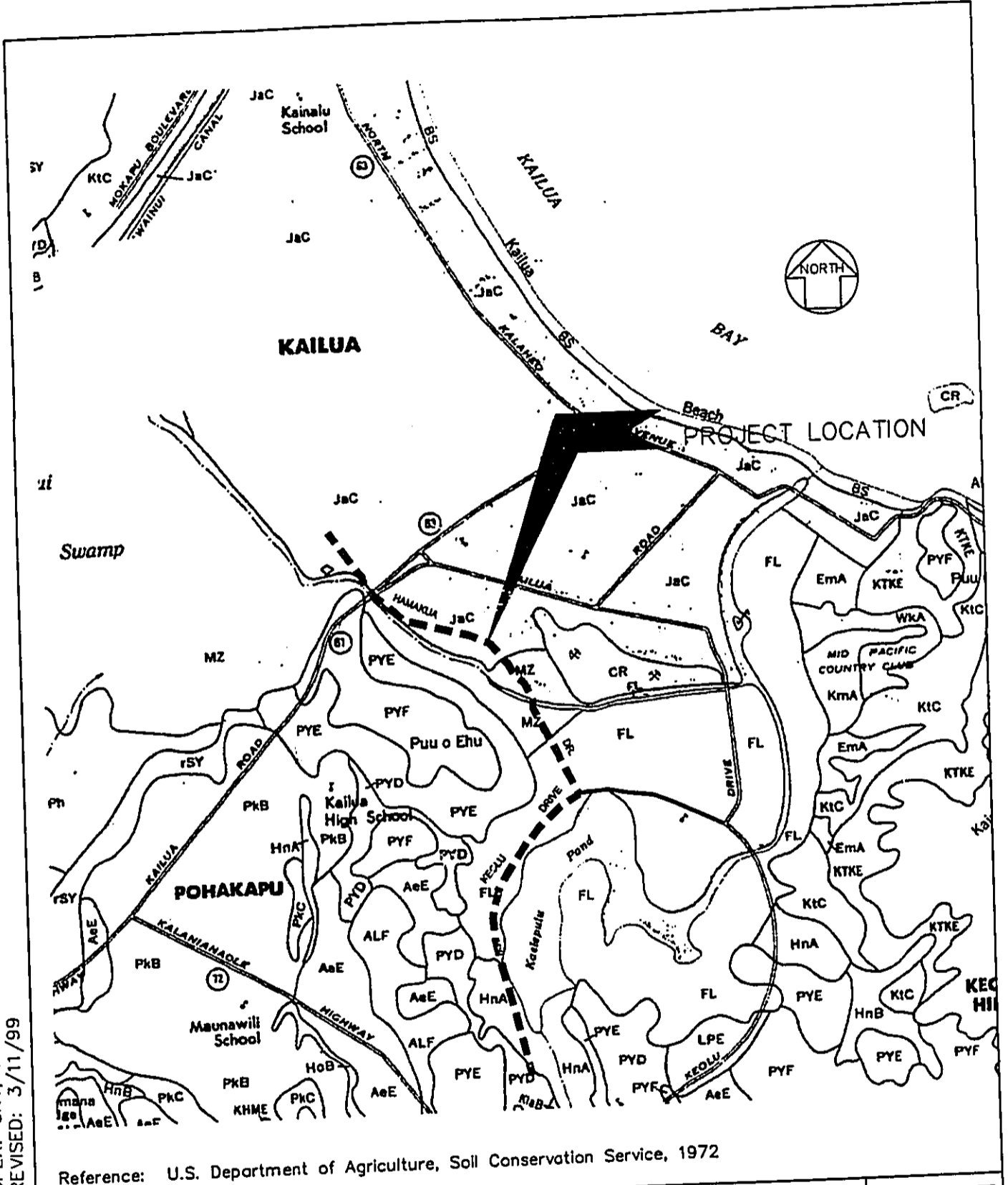
Kailua is located on the northeast section of the island of Oahu between Kaneohe and Waimanalo. This section of the island was formed by the Koolau Volcano and is underlain by the lava flows of the Kailua volcanic series. The process of erosion has now created a topography of relatively steep slopes at the mountain ridges and flat lands from the shoreline through Kailua town.

The "Soil Survey of Kauai, Oahu, Maui, Molokai and Lanai," published by the Soil Conservation Service, August 1972, identifies the surface soil types in the proposed project area as Fill land, Marsh, and Jaucas Sand as shown in Exhibit 3-1. These different soil types are described as follows:

- FL (Fill land, mixed): This land type consists of areas filled with material dredged from the ocean or hauled from nearby areas. This land type is identified in the Keolu Drive section.
- MZ (Marsh): This land type consists of wet, periodically flooded areas covered with grasses and bull rushes. This land type is identified in the Hamakua Drive section in the vicinity of Kaelepulu Stream.
- JAC (Jaucas Sand, 0-15% slope): This land type includes a surface layer which is dominantly sand. Permeability is rapid and runoff is slow. This land type occurs along Kaneohe Street and the eastern side of Hamakua Drive through the commercial section.

A subsurface investigation was performed for the proposed project site by Fewell Geotechnical Engineering, Ltd. Findings from the study, "Preliminary Geotechnical Engineering Report, March 20, 1997" are summarized as follows:

- Except for some short sections of pipe alignment, the subsurface is soft or loose compressible lagoonal deposits of varying composition and thickness.



PM: CKY, LMUW  
 OPER: 3/11/99  
 REVISED: 1/24/97

FILE: Ex3-1  
 SCALE: 1=1  
 BEG: 1/24/97

Reference: U.S. Department of Agriculture, Soil Conservation Service, 1972

**LEGEND**

- FL = FILL LAND
- MZ = MARSH
- JaC = JAUCAS SAND

OTHERS = See U.S.D.A. "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai," 1972.

KAINEHE STREET, HAMAKUA DRIVE AND KEOLU DRIVE  
 RECONSTRUCTED SEWER PROJECT  
 KAILUA, OAHU, HAWAII

**SOIL SURVEY**

**EXHIBIT**

**3-1**

- The section of Hamakua Drive in the vicinity of Kailua Road has a subsurface of medium dense sands and coral gravel.
- The section of Keolu Drive southerly of Hamakua Drive has a basalt subsurface.

### 3.3 LAND USE

#### 3.3.1 State Land Use

The State Land Use Commission designates properties in four categories: Agriculture, Rural, Urban and Conservation. The proposed project lies within land designated as Urban as shown in Exhibit 3-2. Use of urban designated areas by public utility lines such as the proposed project are consistent with State land use policies and practices.

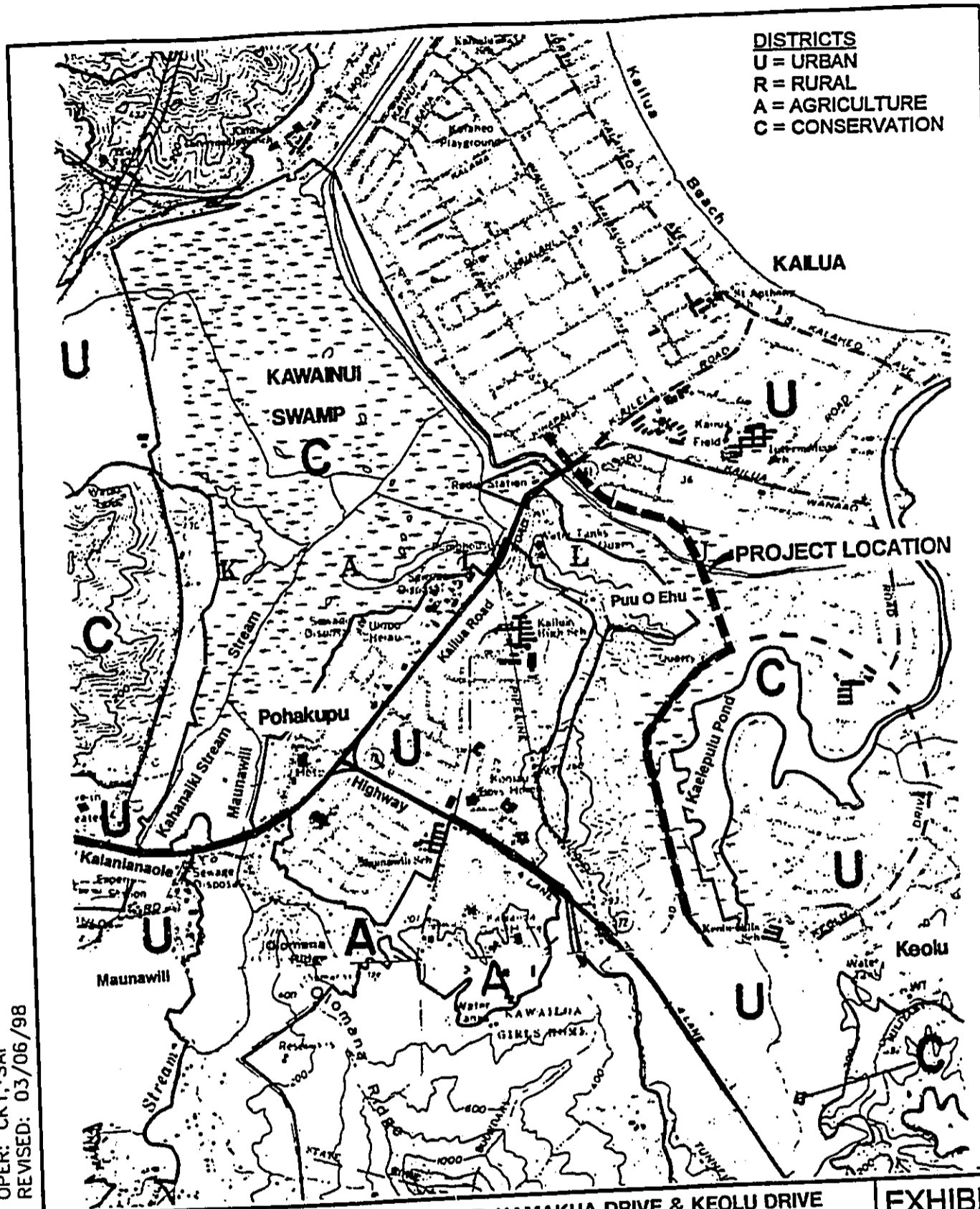
#### 3.3.2 City and County of Honolulu Zoning

The City's Land Use Development Plan designates the surrounding area along the project corridor as: Residential, Commercial, Industrial, Medium Density Apartment, Public Facility, Park, Preservation, and Commercial Emphasis Mixed Use. Land use within the tributary areas is primarily designated as residential. The commercial activities are concentrated along Hamakua Drive in the vicinity of Kailua Road and Hahani Street. Kaelepulu Elementary School is the only public facility along the project route.

In accordance with the development plan, the City's Zoning maps show the pipeline to be located within roadways that front residential lots (R-5, PD-H, & A-2), commercial lots (B-2 & I-2) and preservation lots (P-2) as shown in Exhibit 3-3. In general, Keolu Drive fronts residential lots, Kainehe Street fronts commercial lots and Hamakua Drive fronts residential, commercial and preservation lots.

#### 3.3.3 Special Management Area

A large section of the project route along Hamakua Drive, and the section of the project along Kainehe Street is located within the City and County of Honolulu's Special Management Area (SMA) as shown in Exhibit 3-4. The portion of the project route along Keolu Drive does not fall within the SMA boundaries. According to the Revised Ordinances of Honolulu (R.O.H.), Section 25-1.3(2), the repair/replacement of utility lines within the existing utility alignment does not require an SMA permit.



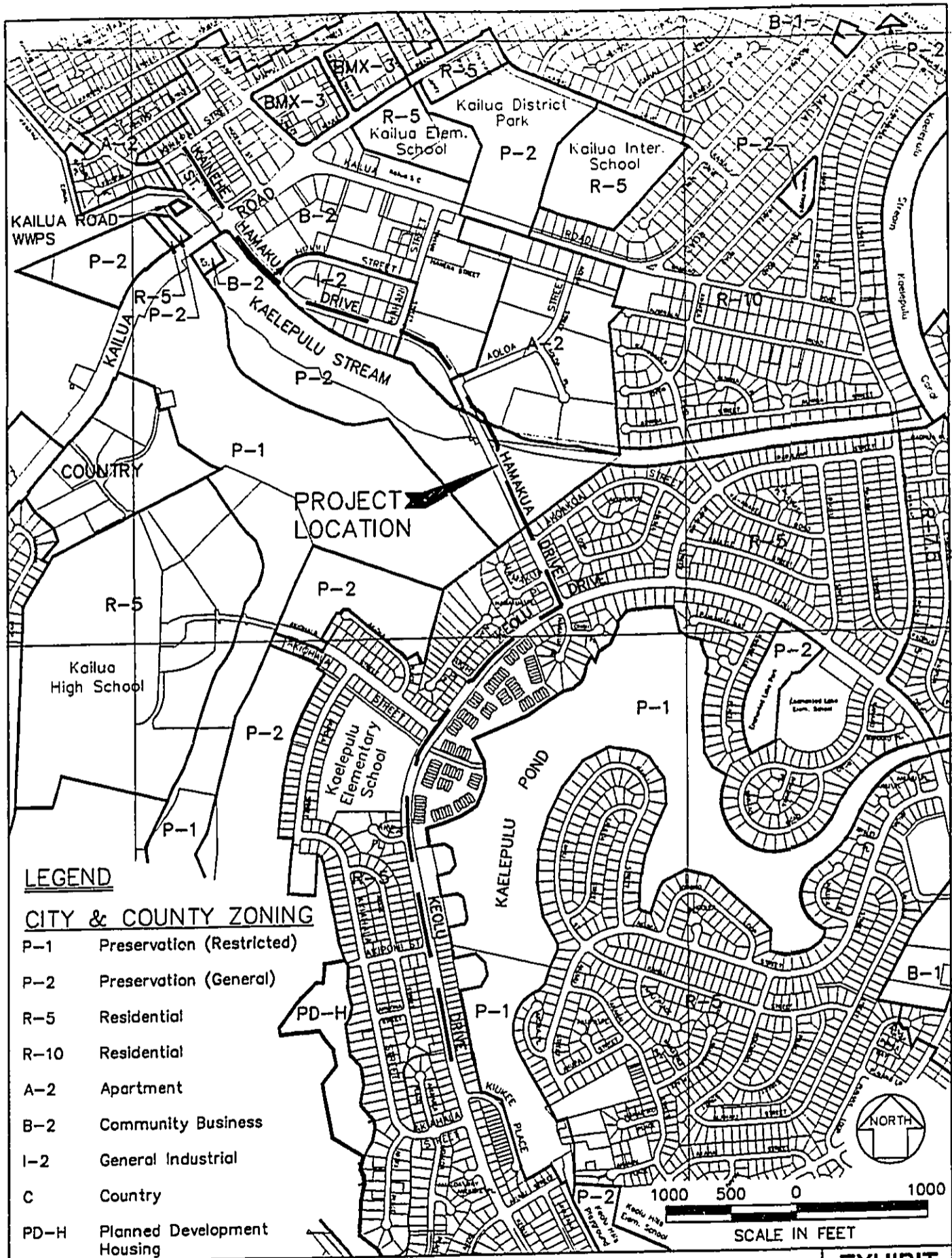
**DISTRICTS**  
 U = URBAN  
 R = RURAL  
 A = AGRICULTURE  
 C = CONSERVATION

PM: OPER: CKY, SAI  
 REVISED: 03/06/98

FILE: EA04  
 SCALE: 1"=1  
 BEG: 1/24/97

<p>LAND USE DISTRICT BOUNDARIES</p> <p>STATE OF HAWAII LAND USE COMMISSION</p> <p>DISTRICT MAP 0-15          REVISED 6/28/94</p>	<p>KAINEHE STREET, HAMAKUA DRIVE &amp; KEOLU DRIVE          RECONSTRUCTED SEWER PROJECT</p> <p>KAILUA, OAHU, HAWAII</p> <p><b>STATE LAND USE BOUNDARIES</b></p>	<p><b>EXHIBIT</b></p> <p><b>3-2</b></p>
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KAINEHE ST., HAMAKUA DR., & KEOLU DR.  
RECONSTRUCTED SEWER PROJECT  
Kailua, Oahu  
TMK: POR. 4-2 & 4-3

**CITY & COUNTY ZONING**

**EXHIBIT**

**3-3**

PLAN 11-4  
 SCALE: 1" = 100'  
 REVISED: 01/28/99

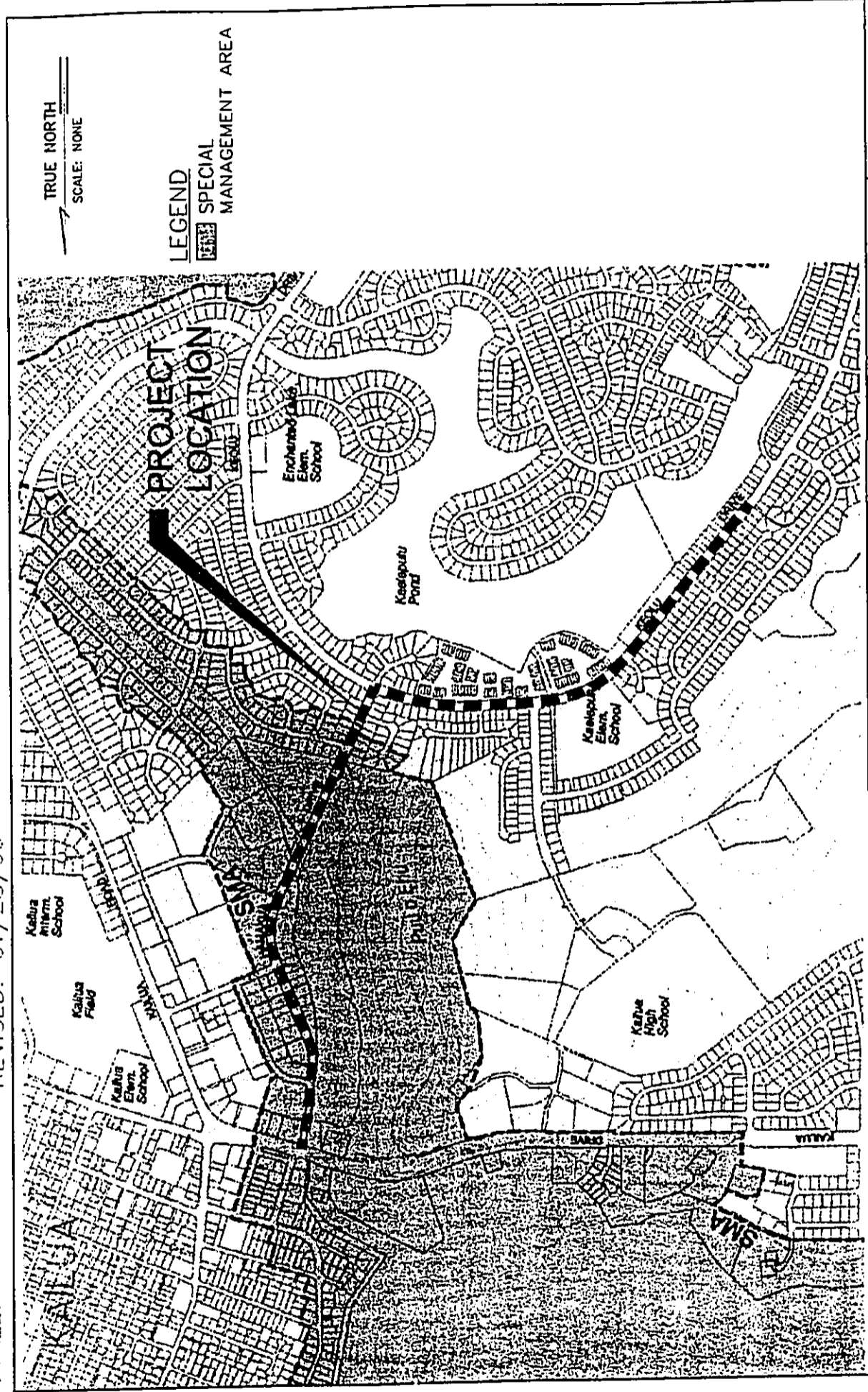


EXHIBIT	KAINEHE STREET, HAMAKUA DRIVE, & KEOLU DRIVE RECONSTRUCTED SEWER PROJECT Kailua, Oahu, Hawaii	SPECIAL MANAGEMENT AREA MAP CITY & COUNTY OF HONOLULU HONOLULU, HAWAII KOOLAUPOKO DISTRICT
3-4		

### 3.4 CLIMATE

The project area has a mild tropical climate with tradewinds from the east or northeast about 75 percent of the time. Wind speeds range between 10 and 25 miles per hour, with prolonged periods of calm and low velocity wind patterns. Extreme temperatures range from the mid-50 to low-90 degrees, while the average is 68 to 79 degrees. Average rainfall ranges from 45 to 75 inches. The wet season is usually from October to April with the highest rainfall in March and the lowest rainfall in June.

### 3.5 FLOOD HAZARD

The majority of the project route is located outside of Special Flood Hazard Areas as shown in Exhibit 3-5. However, a portion of the project on Hamakua Drive crosses Kaelepulu Stream which is within the floodway area. Panel 90 of the "Flood Insurance Rate Map" indicates that the project route traverses through the following flood zones:

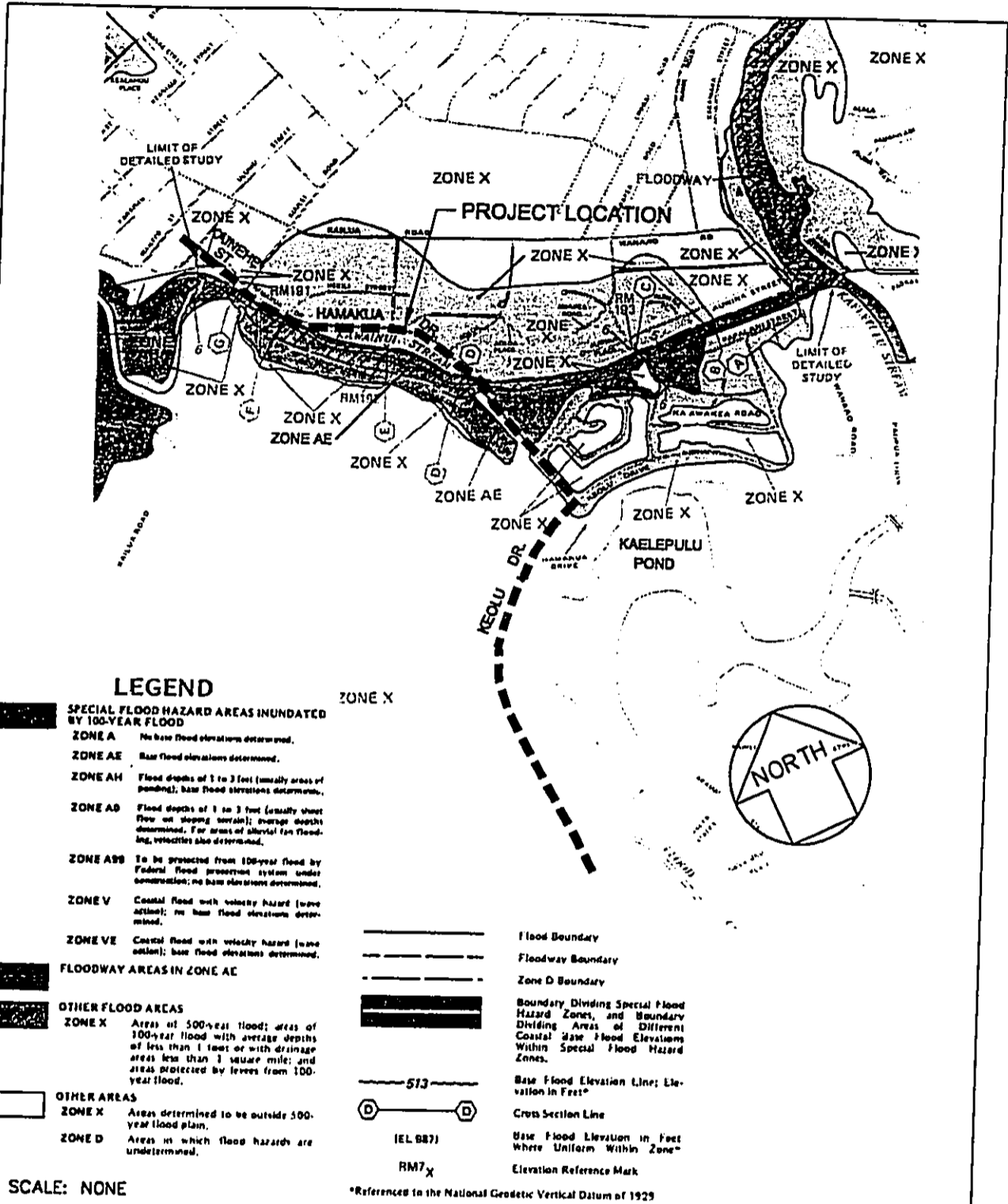
- Zone X: Other Flood Areas - Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.  
-Hamakua Drive and portion of Kainehe Street.
- Zone X: Other Areas - Areas determined to be outside the 500-year flood plain  
-Portion of Hamakua Drive, portion of Kainehe Street, and Keolu Drive.
- Zone AE: Areas Inundated by 100-year Flood - Base flood elevation of 6 feet.  
-Portion of Hamakua Drive at the Kaelepulu Stream crossing.

### 3.6 EARTHQUAKE HAZARD

According to the 1994 Uniform Building Code, the island of Oahu is classified as a Seismic Zone "2A." Zone "0" designates areas with the least seismic activity, while Zone 4 designates areas with the greatest seismic activity.

### 3.7 FLORA/FAUNA

The proposed project is generally located within existing paved roadways of urbanized areas. The exception is the crossing of Kaelepulu Stream at Hamakua Drive. This section is a wetland habitat that has experienced extensive construction activity from projects such as the Hamakua Drive Bridge, two wastewater mains and other utility crossings. Stream clearing is also an annual activity at the site of the crossing.



PM: OPER: CKY,SAI, LMUW, RGO  
 REVISED: 03/11/99

FILE: EX3-5  
 SCALE: 1=1  
 BEG: 1/24/97

**FIRM**  
 FLOOD INSURANCE RATE MAP  
 CITY & COUNTY OF HONOLULU, HAWAII  
 COMMUNITY-PANEL NUMBER 150001 0090 C  
 MAP REVISED: SEPTEMBER 28, 1990  
 Federal Emergency Management Agency

KAINEHE STREET, HAMAKUA DRIVE AND KEOLU DRIVE  
 RECONSTRUCTED SEWER PROJECT  
 KAILUA, OAHU, HAWAII

**FLOOD HAZARD**

**EXHIBIT**  
 3-5

According to a 1984 Hawaii Stream Assessment survey done by the Department of Land and Natural Resources (DLNR), the following species of fish were observed and recorded in Kaelepulu Stream: tilapia (*Tilapia sp.*), guppies (*Poecilia sp.*), and swordtails (*Xiphophorus sp.*). No native or endangered aquatic species were observed.

There is little botanical interest or concern at the Kaelepulu Stream crossing. The species found there occur throughout the neighboring area and similar environmental habitats in the islands. A botanical survey conducted for a nearby project site recorded no officially listed threatened or endangered plants around the project area (Engineering Concepts, 1996).

A survey of the avifauna and feral mammals was conducted for the proposed Kailua Gateway project, which is contiguous and southwesterly of the proposed site along Hamakua Drive (Engineering Concepts, 1996). No endemic land birds were recorded. Four endemic and endangered water birds were observed in the wetlands associated with the proposed Kailua Gateway site. Several migratory indigenous birds were observed. No nesting sea birds were observed. Fourteen species of exotic (introduced) birds were recorded.

### 3.8 SURFACE WATER

Kaelepulu Stream runs adjacent to the project route along the western side of Hamakua Drive. The proposed project route crosses Kaelepulu Stream in two different locations. One of these crossings is located between Kainehe Street and the Kailua Road Pump Station. The other crossing is located along Hamakua Drive, between Aoloa Street and Akoakoa Street. Kaelepulu Pond is also located near to the project route on the eastern side of the Keolu Drive. Water from the pond and Kaelepulu Stream flows into Kaelepulu Canal, which eventually discharges into Kailua Bay.

### 3.9 AIR QUALITY

Although no test results on air quality were obtained at the project site, it is generally assumed that the air is relatively clear and low in pollution. Air quality in the project area is predominately affected by vehicle emissions with the trade winds through the open area of Kawainui Swamp and Enchanted Lakes dispersing any concentration. Data from the State Department of Health indicates that air quality standards are currently being met along the project corridor.

### 3.10 NOISE

Present noise levels along the project site were not measured. Noise levels are predominantly vehicular related as the project alignment follow urban collector roads. Verbal sounds, trash collection operations and current construction activities in the area contribute to the noise level. Typically urban street sound levels are approximately 80 dBL while residential living rooms are approximately 40 dBL.

### 3.11 ARCHAEOLOGY

The State Historic Preservation Division (SHPD) has no known record of any historic or cultural records within the project corridor since no archaeological work has been conducted in the area. However, SHPD has indicated that historic sites including human burials have been found in Jaucus sand deposits in the vicinity of the project.

The nearest known significant feature is the high point of Puu O Ehu ridge, about 1,500 feet southerly of the site, which overlooks Kaelepulu Pond and Kawainui Marsh.

### 3.12 TRAFFIC

Traffic condition for specific collector roadways within the Project are:

	TRAVEL LANE	PARKING LANE	SPEED LIMIT
1. Kainehe Street	2	2	25
2a. Hamakua Drive (Kailua Rd. to Hahani St.)	4	2	25
2b. Hamakua Drive (Hahani St. to Keolu Dr.)	4	0	25
3. Keolu Drive	4	2	25

Keolu Drive has a painted median and Hamakua Drive (Akoakoa St. to Keolu Dr.) has a curbed median. Roadways within the Project are relatively flat and have a level-of-service C as defined by the Statewide Uniform Design Manual for Streets and Highways. All roadways include asphalt concrete pavement, concrete curb

and gutters, underground utilities, and concrete sidewalks.

Kailua Road, a State Highway, is a divided highway with two lanes in each direction. At the project site, Kailua Road is a signalized intersection with concrete curbs and sidewalks. Traffic volumes are 1,300 vehicles per hour (vph) in the predominant direction during the peak hours and 900 vph in either direction during the middle of the day.

### 3.13 EXISTING UTILITIES

The existing utilities located under the roadway along the Kainehe Street project route consist of an 8-inch water line, a 12-inch/36-inch wastewater line, and an 18-inch drain line. Beneath Hamakua Drive, the existing utilities include a 12-inch water line, a 27-inch wastewater line (to be abandoned), and intermittent drain line crossings which connect to drain outlets that empty into Kaelepulu Stream. A section of a 36-inch drain line is also located beneath the roadway between Akoakoa Street and Keolu Drive, while an abandoned section of wastewater line exists between Aoloa Street to Akoakoa Street.

Along the Keolu Drive portion of the project route, the existing utilities consist of a 12-inch water line, a 24-inch wastewater line (to be abandoned), and sections of drain lines that range in sizes from 18-inches to 48-inches. An 8-inch wastewater line which runs parallel to and eventually connects to the 24-inch wastewater line also exists between Akea Place and Akipohe Street along Keolu Drive.

4. **SOCIO-ECONOMIC SETTING**

Kailua is a suburban community in the district of Koolaupoko, the windward section of the island of Oahu. The population of the Koolaupoko District was 117,694 people in 1990 (State of Hawaii Data book 1993 - 94). Kailua has a resident population of 36,818 of which many commute to Honolulu for employment or schools.

The Kailua community is mainly residential with supporting retail and governmental services. The residents in the Kailua area are generally characterized as long-time Hawaii residents, generally with higher education, more professional occupations, higher median income and high percentage of resident owner-occupied homeowners.

Primary fire protection is provided by the Kailua Fire Station, at the corner of Kuulei Road and Kainalu Drive which is about two miles from the project site. A police substation is located adjacent to the fire station. The neighborhood is served by a satellite city hall on Keolu Drive, a mile from the project. Students in the area are served by Kaelepulu and Enchanted Lakes Elementary Schools, Kailua Intermediate School and Kailua High School.



## **5. PROBABLE IMPACTS AND MITIGATIVE MEASURES**

### **5.1 SHORT TERM IMPACTS**

Short term impacts are those impacts that are of a temporary nature and are typical of site preparation and other construction activities. These are temporary conditions that can be mitigated through compliance of regulations and standards and by the application of current techniques and methods.

#### **5.1.1 Traffic**

Temporary traffic congestion is anticipated as construction activities will require local lane closures. Affected roads have four traffic lanes and curbside parking lanes of which at least two lanes of roadway are anticipated to be closed to traffic to allow for construction access and activity. Traffic congestion may discourage potential customers from entering the general area.

At least two lanes of roadway is anticipated to be open to traffic at all times. Other mitigative measures include the use of traffic controls during working hours, as well as adequate public notice. An approved traffic control plan will be used to ensure efficient movement through the construction area. Regulatory and warning signs, cones, barricades and off-duty police officers may be incorporated within this plan.

Access to properties adjacent to the project site will be affected by the construction activities. Police, fire and emergency services require a safe and passable route through streets under construction. Customers of businesses in the area may experience some inconvenience regarding vehicular access and on-street parking.

The project specifications will require continuous access to all businesses along the project route. Mitigation measures concerning vehicular access include shortening the amount of construction time at each location by lengthening work hours if required. Typically, project notification is presented by the selected design consultant at all applicable neighborhood board meetings.

Work can be scheduled at night or during hours when most businesses are closed to avoid the potential loss of customers. The selected contractor will coordinate the details of any temporary driveway closures with the property owners. Selecting a trenchless method of construction would also eliminate access problems for the majority of the project route. Police, fire and emergency services will be notified of construction activities and scheduling ahead of time to deter use of streets with anticipated delays.

### 5.1.2 Noise

Noise from construction of the project may be a nuisance to residents and workers in the area. Impact noise from pile driving, if needed along Keolu Drive, may be particularly acute. Other noise generating equipment include backhoes, trucks, generators and pumps.

Unnecessary noise should be reduced by adequate and proper maintenance of construction equipment and vehicles. The community will be given ample notice of construction activities and anticipated elevated noise levels. All activities will be coordinated to minimize noise generation, and shall comply with Title 11 of the Department of Health Administrative Rules, Chapters 42 and 46. In accordance with Chapter 46, the contractor shall obtain a noise variance from the Department of Health should any night work be involved.

### 5.1.3 Air Quality

During construction, air quality is expected to be affected by exhaust fumes from construction equipment and automobiles congested in the area. Dust may cause concerns while trenching and backfilling activities are performed. Earth material deposited on roads from trenches, trucks, or equipment may cause dust problems when agitated by traffic.

Adequate and proper maintenance of construction equipment and vehicles will also reduce emissions. Frequent watering of exposed dirt areas and equipment travel ways will control fugitive dust concerns. Immediate paving of completed areas of construction will also control fugitive dust. As required by ordinance, open body trucks must be covered at all times while transporting materials. Other types of dust controls shall be implemented by the Contractor as required to minimize air borne particles that may cause health problems and/or property damage. All measures utilized shall comply with the State Department of Health Administrative Rules, Title 11, Chapter 59 and 60 and all applicable county ordinances relating to excavation and stockpiling procedures.

### 5.1.4 Water Quality

If the Kaelepulu Stream crossing along Hamakua Drive is not feasible via a trenchless method, then construction activities within the stream will be required to install the new wastewater line beneath the stream bed. Open trenching will require continuous sheet piling which will affect normal and

flood stream flows. Use of a trenchless method will eliminate the flood hazard concerns as all work will be below the stream and abutting lands. Should construction within stream be required, all work will be coordinated with the appropriate agencies to ensure the necessary permit requirements are satisfied.

Construction within the stream will require a 1) Stream Channel Alteration Permit from the Department of Land and Natural Resources, a 2) Department of the Army permit from the Army Corps of Engineers, a 3) Section 401 Water Quality Certification from the Department of Health, a 4) Hawaii Coastal Zone Management Program Federal Consistency Determination from the Department of Business, Economic Development and Tourism, a 5) Flood Hazard District Certification from the City's Department of Planning and Permitting, and a 6) Federal Emergency Management Agency's Certification of a "No-Rise" Determination. In addition, the appropriate National Pollutant Discharge Elimination System (NPDES) general permits will be obtained from the State Department of Health for any discharges anticipated from hydrotesting or construction dewatering activities.

The contractor will be required to comply with all provisions of the applicable permits thereby reducing the discharge of pollutants to the stream. In addition, the contractor will be required to employ an approved best management practices (BMPs) plan and take appropriate measures during construction to prevent fuel, oil and cement products from discharging or leaching into the ocean.

A trenchless method of crossing the Kaelepulu Stream from Kanehe Street to the Kailua Road Pump Station appears to be a feasible option due to the existing soil conditions and the shorter stream width. Should a trenchless method be used for this stream crossing, no impacts to the stream waters are anticipated.

#### **5.1.5 Flora/Fauna**

The project route includes crossing of Kaelepulu Stream at Hamakua Drive. Vegetation in the immediate area will be disturbed during construction. Construction in the stream may temporarily expel fish and other stream residents in the area. There is chain link fencing that prohibits access to the stream and eliminates any recreational opportunity. The impact level is dependent on the selected construction method. A trenchless method such as microtunneling or horizontal directional drilling would reduce the impact since no work would be performed within the stream.

Impacts on Kaelepulu Stream and its surrounding area can be greatly reduced by selecting a trenchless pipe installation method. Excavated material volume will be reduced and the dewatering requirements will be limited. No waste material from the construction will be stored or discarded in the stream beds. Stream beds will be restored to their original conditions, except that removal of weeds and rodents are not regarded as adverse impacts.

#### **5.1.6 Archaeological**

SHPD has no known record of any historic or cultural resources within the project corridor since no archaeological work has been conducted in the project area. Since SHPD has indicated that historic sites including human burials have been found in Jaucus sand deposits in the vicinity of the project, there is a potential for disturbing such sites during construction activities. Thus, the proposed project will be coordinated with SHPD. Since the construction of the proposed project will be confined to road right-of-ways, which are areas that have previously been disturbed, there is a low probability of encountering significant historical sites.

Should evidence of historic sites be encountered during construction, all activities in the area of the find shall cease, and the State Historic Preservation Division shall be notified immediately. The Division shall be provided sufficient time to assess the find and recommend appropriate mitigation measures. Any archaeological data recovery work that may be recommended by the Division shall be completed by a qualified archaeologist prior to the commencement of work in the area of the find. Completion of the mitigation work shall be confirmed by the Division, and a report of the findings shall be prepared and submitted to the Division for review and acceptance. If human skeletal remains are inadvertently encountered during construction, procedures outlined in the Hawaii Revised Statutes 6E-43.6 shall be followed.

#### **5.1.7 Land Use**

The proposed wastewater line replacement is consistent with State and City land use designations. No land acquisition will be required for the proposed project since all construction activities will be confined within the existing right-of-way. The proposed project will also be in compliance with the Coastal Zone Management objectives and policies in accordance with Chapter 205A, Hawaii Revised Statutes.

Although the project route along Kainehe Street, and most of Hamakua Drive is located within the City and County of Honolulu's SMA boundaries, a SMA permit will not be required for the proposed project according to a 12/23/98 memorandum from the City and County of Honolulu's Department of Planning and Permitting (included in Appendix C). Pursuant to Section 25-1.3(2), R.O.H., the repair/replacement of utility lines within existing utility alignments are exempt from SMA permit requirements.

#### **5.1.8 Existing Utilities**

The best available corridor was selected for the proposed pipeline alignment after considering the existing utilities beneath the roadway. No impacts to these existing utilities are expected from the installation of the proposed wastewater replacement pipeline. In order to prevent any disruptions to these existing services, construction activities will be coordinated with the appropriate agencies. Should disruptions to existing utilities accidentally occur during construction, the appropriate utility agencies will be notified immediately so that service can be promptly restored.

#### **5.1.9 Socio-Economic**

Due to the anticipated traffic congestion during construction, businesses along the project route may be temporarily impacted. Potential customers may also be discouraged from entering the business area due to traffic inconveniences and limited on-street parking. Mitigative measures include provisions for an approved traffic control plan and possibly scheduling construction activities during off-peak business hours where feasible.

The proposed project will provide temporary employment opportunity during its construction period. These workers will probably commute from their present residences rather than relocate to the surrounding areas. Local material suppliers and dining establishments may benefit from the project due to their proximity and increased amount of construction workers in the area.

### **5.2 LONG TERM IMPACTS**

Since the existing pipelines are deteriorated and structurally deficient, the proposed improvements would help minimize the reoccurrence of wastewater pipe failures which can typically result in unpleasant wastewater back-ups, spills, roadway

damages and traffic problems. In the long term, the new pipeline section would be less prone to leaks, breaks or failure than the existing system.

#### **5.2.1 Kailua Wastewater Treatment Plant Operations**

Another long term benefit from the proposed project is the reduction of groundwater infiltration into the wastewater system. This reduction will normalize soil stability and structural supporting parameters. Minimizing infiltration will benefit the operation and maintenance of the Kailua Wastewater Treatment Plant since less influent would enter the plant.

#### **5.2.2 Flood Hazard**

A section of the proposed project along Hamakua Drive traverses through a flood hazard area designated as "Zone AE." However, no long term impacts are expected since the newly constructed pipeline is not expected to raise any existing flood elevations. A "Flood Hazard District Certification" along with a "No Rise Certification" shall be completed to comply with state and federal flood regulations and to ensure that the proposed project will not adversely affect the established flood elevations. The selected design consultant shall comply with all applicable flood hazard requirements in accordance with Section 7.10 of the City and County of Honolulu's Land Use Ordinance.

### **5.3 ADVERSE IMPACTS WHICH CANNOT BE AVOIDED**

The level of traffic efficiency will be temporarily reduced as vehicular speed will be reduced through the construction area. Speed reduction is necessary for the operator's safety as well as for the construction workers. Temporary congestion due to lane closures cannot be avoided as work areas and regulated access are required for a successful project.

Noise levels will increase during the construction period. However, this effect is temporary and will proceed incrementally along the project route. Although the installation of pilings will have the most adverse noise impact, other construction equipment will have similar noise characteristics as trucks and buses which presently traverse the project route.

Customers of businesses in the area may temporarily experience some inconvenience regarding vehicular access and on-street parking. Also, traffic congestion, or concern of it, may discourage potential customers from entering the general area.

The proposed construction activities along the project route will result in a few adverse impacts that cannot be avoided. However, these impacts are temporary and will last only for the duration of the construction activities. Upon completion of the replacement pipe sections, traffic flow, noise levels, vehicular access and on-street parking in the area shall be restored to normal conditions.

## **6. ALTERNATIVES TO THE PROPOSED ACTION**

### **6.1 NO ACTION**

The no action alternative is not considered because the existing and future wastewater needs will not be adequately addressed. Wastewater flows must be transported continuously to the treatment facility by a sound and reliable system. The present system is badly deteriorated from chemical corrosion with sags due to differential settlement. The recent collapse of a pipe section along the project route (August 24, 1998) and the resulting 8-foot sinkhole along Hamakua Drive at Hahani Street reinforces the critical need to replace the deteriorated pipe sections. Maintaining the existing system without repair, rehabilitation or replacement will result in further pipe failures and potential wastewater damage to the surrounding area.

### **6.2 ALTERNATIVE ROUTES**

Alternative routes are not available through most of the project area due to abutting residences and commercial facilities that require wastewater service. Diverting the flows to other wastewater drainage basins is also not feasible since the additional flows will only increase the problems currently being experienced in these areas.

### **6.3 ALTERNATIVE CONSTRUCTION METHODS**

In addition to the traditional pipe installation method of trench excavation, pipe laying and then backfilling, the proposed project may include microtunneling and rehabilitation of wastewater pipelines and manholes by interior lining. Disruption to traffic and the environment will be reduced using these trenchless methods.

### **6.4 ALTERNATIVES CONSIDERED IN THE ENGINEERING REPORT**

As part of the Preliminary Engineering Report for the proposed project, alternatives to repair, replace and/or relieve the inadequate sections of this portion of the Kailua wastewater collection system were investigated. Alternatives 1, 1A, 2, 3, 3A, 4, and 5 were based on a peak discharge of the 5-year, 6-hour storm event which represents a 6-hour storm duration that is exceeded once every 5 years. Alternatives 6 and 7 were analyzed for a 2-year, 6-hour storm event (lower design flows than the 5-year, 6-hour storm) which represents a 6-hour storm that is exceeded once every two years. All nine (9) alternatives that were considered are described as follows:



For a 5-year, 6-Hour Storm Event:

- ALTERNATIVE 1 - Replace inadequate lines in sagged or surcharged conditions, rehabilitate remainder by lining or other trenchless methods.
- ALTERNATIVE 1A - Rehabilitate inadequate wastewater lines and manholes by lining or other trenchless technology methods, sagged conditions remain.
- ALTERNATIVE 2 - Repair structurally deficient wastewater lines and maintain the remaining wastewater lines.
- ALTERNATIVE 3 - Combination of relief, replacement and rehabilitation.
- ALTERNATIVE 3A - Construct relief line to lower the energy grade line below the pipe soffit, rehabilitate wastewater lines, sagged conditions remain.
- ALTERNATIVE 4 - Relieve inadequate lines by diverting flows to another wastewater drainage area.
- ALTERNATIVE 5 - New alignment along Keolu Drive and Hamakua Drive, replacing entire system.

For a 2-Year, 6-Hour Storm Event:

- ALTERNATIVE 6 - Replace inadequate lines in sagged conditions, rehabilitate remainder by lining.
- ALTERNATIVE 7 - New alignment along Keolu Drive and Hamakua Drive, replacing entire system.

Selection of the method to resolve the inadequacies depends on the specific problem to be corrected, groundwater, depth of the pipeline, local soil conditions and social costs such as traffic, disruptions and hazards. In addition, it was determined at a project review meeting that the recommended system must not include sags or reverse slopes in order to prevent odors and maintenance/operational problems. In accordance with this criteria, Alternatives 1, 1A, 2, and 3A were eliminated from further consideration. Alternative 4 was also eliminated since there was no adjacent drainage basin with sufficient surplus capacity to accommodate the additional flows. Thus Alternatives 3, 5, and 6 were investigated in further detail and are summarized below. Alternative 7, previously described in Section 2.4, was ultimately selected as the proposed action.

**6.4.1 Alternative 3: Relief Alternative (5-Year, 6-Hour Storm Event)**

In the relief alternative, the wastewater flows generated between Keolu Drive and Kailua Road would be transported to the Kailua Road Pump Station by constructing a relief system on Hamakua Drive. Pipe diameters range from 12 to 27 inches. Pipe sections that do not conform to the DDC Design Standards are replaced, while the remaining sections are repaired by lining. This system would essentially accommodate the overflow from the existing wastewater line and run parallel to the existing system.

Although this alternative satisfies the hydraulic requirements, it is the most costly option, at approximately \$19.4 million. Traffic disruptions and impacts to commercial activities would also be accentuated on Hamakua Drive where the relief line will be installed. The additional cost to install the relief line is not warranted since the replacement alternative (proposed action) will accomplish the same objective at a lower estimated cost. Thus, Alternative 3 was dropped from further consideration.

#### **6.4.2 Alternative 5: Replacement Alternative (5-Year, 6-Hour Storm Event)**

Since surcharging during high flows and in sag sections is not acceptable, the replacement alternative is a viable option. The feasibility of this alternative is based on the lower estimated construction cost, at approximately \$16.1 million. In addition, there will be less disruptions to commercial activities (wastewater flows are impeded only during connections) and traffic (single pipeline rather than two pipelines). This alternative also allows for several methods for pipe installation such as microtunneling. Although varying soil conditions on Keolu Drive warrant additional soil tests for definite recommendations of pipe installation methods, microtunneling through Hamakua Drive would reduce dewatering and simplify the Kaelepulu Stream crossing.

The difference between Alternative 5 and Alternative 7 (the proposed action) is that the pipe sizes are smaller in the proposed action due to lower design flows. Alternative 5 is based on a 5-Year, 6-Hour storm event, while Alternative 7 is based on a 2-Year, 6-Hour storm event. The construction cost of Alternative 7 is lower by approximately \$1.0 million (roughly a 6.6% difference). A replacement alternative involves an entirely new system that will provide better slopes, higher flow velocities which results in less frequent cleanings, and eliminates the probability of the deteriorated pipe sections from collapsing during cleanings.

#### **6.4.3 Alternative 6: Replace/Rehabilitation Alternative (2-Year, 6-Hour Storm Event)**

In comparison to the Alternatives 3, 5, and 7, Alternative 6 has the lowest estimated construction cost at \$13.7 million. The estimated savings occur due to the use of Cured-In-Place-Pipe (C.I.P.P.) for 1300 feet on Hamakua Drive and 1160 feet on Keolu Drive. C.I.P.P. appears to be an acceptable method based on the video investigations performed as part of the Engineering Report. C.I.P.P. could also allow the rehabilitation of the deteriorated pipe sections on Hamakua Drive to be considered as an

emergency project. However, if C.I.P.P. is used, the existing flat slopes would remain in the system resulting in lower velocities and a greater probability of odor problems. Extensive by-passing would also be required to install the liner pipe. Thus, Alternative 6 was eliminated from further consideration.

7. **DETERMINATION**

In accordance with the Hawaii Revised Statutes, Chapter 343, The Department of Design and Construction has determined that the proposed project will not have significant impacts to the environment. Consequently, a "Finding of No Significant Impact," (FONSI) has been determined and an Environmental Impact Statement will not be required for the proposed project.

## 8. REASONS SUPPORTING THE ANTICIPATED DETERMINATION

The FONSI determination of the proposed project was based on the following significance criteria in accordance with the Hawaii Administrative Rules 11-200-12:

- *The proposed action does not involve an irrevocable commitment or loss of or destruction of unique natural or cultural resources:*

The proposed pipeline will be installed beneath the existing roadway which has already been significantly disturbed from previous construction activities (other utility installations, road construction). Thus, no unique natural or cultural resource should be destroyed or loss as a result of the proposed project.

The State Historic Preservation Division (SHPD) has no known historic or cultural records within the project corridor since no archaeological work has been conducted in the area. However, since SHPD has indicated that historic sites including human burials have been found in Jaucus sand deposits in the vicinity of the project, there is a potential for disturbing such sites during construction activities. Thus, the proposed project will be coordinated with SHPD. Construction of the proposed project will be confined to road right-of-ways, which are areas that have previously been disturbed. Consequently, there is a low probability of encountering significant historical sites. Should evidence of historic sites be encountered during construction, all activities in the area of the find shall cease, and the State Historic Preservation Division shall be notified immediately.

- *The proposed action does not curtail the range of beneficial uses of the environment:*

The proposed project is consistent with the County's General Plan and the DDC's planning standards and will be compatible with the uses of the surrounding area. However, the proposed project is expected to temporarily curtail the use of the commercial areas along the project corridor since construction activities will take place within road right-of-ways, resulting in temporary traffic disruptions. Access to properties adjacent to the project site will also be temporarily affected by construction activities since traffic congestion may discourage potential customers from entering the general area. In addition, residents and visitors driving through Kailua town may be inconvenienced since the project route affects major collector roads. An approved traffic control plan will be used to ensure efficient movement through the construction area.

- *The proposed action is in concert with the State's long-term environmental policies, goals and guidelines as expressed in Chapter 343, HRS, and any revisions and amendments thereto, court decisions and executive orders:*

The proposed project is consistent with the State's Land Use Plan which is in concert with all applicable policies, goals and guidelines. The proposed project does not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 343 of the Hawaii Revised Statutes.

The State's environmental policy is to conserve the natural resources and enhance the quality of life. Since the existing pipelines are deteriorated and structurally deficient, the proposed improvements would help minimize the occurrence of wastewater pipe failures which can typically result in unpleasant wastewater back-ups, spills, roadway damages and traffic problems. Spills of untreated wastewater could also contaminate the surrounding environment. In the long term, the new pipeline section would be less prone to leaks, breaks or failure than the existing system and would thereby help to preserve and enhance the surrounding environment.

- *The proposed action does not substantially affect the economic or social welfare of the community or State:*

During construction, access to properties adjacent to the project site may be disrupted and traffic congestion may discourage potential customers from entering Kailua town. As a result, the economic welfare of businesses near the project site could be temporarily affected. However, local material suppliers and dining establishments may benefit from the project due to their proximity and increased amount of construction workers in the area. Another positive economic impact is the short-term production of construction related jobs. Upon completion of the project, the economic situation should return to the existing condition. Thus, no substantial impacts to the economic or social welfare of the community or State are anticipated.

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

The proposed project will not directly result in an increase of population in the area. The proposed improvements are needed so that the wastewater system can accommodate current design peak flows, as well as demands of future land uses projected by the City's Development Plan.

- *The proposed action does not substantially affect public health:*

Construction activities will generate short-term impacts with the potential for affecting public health. Such short-term impacts include noise and dust which will be minimized through the implementation of the mitigative measures previously identified in Section 5. These impacts are addressed and regulated through the permit processes established by the appropriate regulatory agencies. In addition, the contractor will be directed to communicate with the community to mitigate public concerns during

construction.

- *The proposed action does not involve a substantial degradation of environmental quality:*

The proposed project does not involve a substantial degradation of environmental quality since the existing physical aspects of the surrounding area will be preserved. The proposed project will help to protect the environment by preventing pipe failures and consequent wastewater spills to the surrounding environment.

- *The proposed action is individually limited and cumulatively, does not have a considerable adverse effect upon the environment or involve a commitment for larger actions:*

The proposed action, either individually or cumulatively, will not have a considerable adverse effect on the environment. The proposed project addresses a direct need to replace a section of the Kailua wastewater collection system that is badly deteriorated and does not involve a commitment for any larger action.

- *The proposed action does not substantially affect rare, threatened or endangered species or habitats:*

There are no known rare, threatened or endangered species or habitat associated with the project site. Construction of the proposed project will be confined to road right-of-ways and easement areas which have previously been disturbed.

- *The proposed action does not detrimentally affect air or water quality or ambient noise levels:*

Short-term impacts on air and water quality, as well as noise, may occur during the construction period, but will be mitigated by normal construction practices and will be regulated by the project plans and specifications. Upon completion of the proposed project, the surrounding neighborhoods would return to the existing condition.

- *The proposed action does not affect an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary or coastal waters:*

The majority of the proposed project is not located in an environmentally sensitive area such as a flood plain or a tsunami zone. However, a small portion of the proposed project is located within a flood hazard district, where the pipeline crosses beneath Kaelepulu Stream. No long term impacts are expected since the newly constructed pipeline is not expected to raise any existing flood elevations. A "Flood

Hazard District Certification" along with a "No Rise Certification" shall be completed to comply with state and federal flood regulations and to ensure that the proposed project will not adversely affect the established flood elevations.

The project is also not located on unique geologically hazardous lands. No significant adverse impacts on fresh or coastal waters are expected.

- *The proposed action does not substantially affect scenic vistas and viewplanes identified in county or state plans or studies:*

No scenic vistas or viewplanes should be affected since the proposed project consists of replacing a section of the wastewater line which will be laid beneath the existing ground.

- *The proposed action does not require substantial energy consumption:*

During the construction period, a substantial amount of energy would not be required for the construction activities. Following construction, the improved Kailua wastewater collection system will have a negligible effect upon energy consumption.



**9. LIST OF POTENTIAL PERMITS / APPROVALS**

**9.1 FEDERAL GOVERNMENT**

Army Corps of Engineers

- Department of the Army Permit

**9.2 STATE OF HAWAII**

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

- Coastal Zone Management Program Federal Consistency Determination

Department of Health

- Community Noise Permit for Construction Activities
- Community Noise Variance
- Construction Plan Approval
- NPDES Construction Dewatering Permit
- NPDES Hydrotesting Permit
- Section 401 Water Quality Certification

Department of Transportation

- Construction Plan approval
- Permit to Perform Work Upon a State Highway

Department of Land & Natural Resources

- Stream Channel Alteration Permit

**9.3 CITY AND COUNTY OF HONOLULU**

Department of Planning and Permitting

Site Development Division:

- Construction Plan Approval
- Flood Hazard District Certification
- Certification of "No-Rise" Determination
- Public Right-of-Way Permit to Excavate
- Construction Dewatering Permit (Temporary)
- Special Management Area Permit (Exemption)

Department of Environmental Services  
Division of Environmental Quality:

- Discharge of Effluent (Hydrotesting - Temporary)

Department of Transportation Services  
Traffic Division:

- Street Usage Permit

## 10. PARTIES CONSULTED

The preparation of the Final Environmental Assessment involved consultation from various parties during the pre-assessment consultation period and during the 30-day comment period for the Draft EA in accordance with the Hawaii Administrative Rules 11-200-9.

### 10.1 PRE-ASSESSMENT CONSULTATION

The following parties were consulted during the pre-assessment consultation period for the Draft EA. The "✓" indicates that a reply was received from that party. A copy of the comments received and the corresponding responses are included in Appendix B.

#### Federal Government

- U.S. Army Corps of Engineers, Pacific Ocean Division
- ✓ U.S. Department of Agriculture, Resources Conservation Service
- U.S. Department of Commerce, National Marine Fisheries Service
- U.S. Department of the Interior, Fish and Wildlife Services

#### State Government

- ✓ Department of Accounting and General Services
- Department of Agriculture
- ✓ Department of Business, Economic Development and Tourism
- ✓ Department of Education
- Department of Hawaiian Home Lands
- ✓ Department of Health, Environmental Management Division
- ✓ Department of Land and Natural Resources
- ✓ Department of Land and Natural Resources, State Historic Preservation Division
- Department of Transportation
- Office of State Planning
- Office of Environmental Quality Control
- University of Hawaii, Environmental Center

#### City and County of Honolulu

- ✓ Board of Water Supply
- Department of Community Services
- Department of Planning and Permitting
- Department of Transportation Services
- ✓ Department of Parks and Recreation
- Department of Environmental Services
- ✓ Police Department

**Other Parties**

- ✓ Kailua Urban Design Task Force  
Hawaiian Electric Company  
Hawaiian Telephone Company  
Hawaii's Thousand Friends
- ✓ Kaneohe Ranch Company, Limited  
Kailua Chamber of Commerce  
Kailua Neighborhood Board  
Enchanted Lakes Residents Association  
Kukilakila Association  
Sierra Club Hawaii Chapter  
The Honorable Steve Holmes, Council Member, District II  
The Honorable John Henry Felix, Council Member, District III  
The Honorable Cynthia Thielen, State Representative, 49<sup>th</sup> District  
The Honorable David A. Pendleton, State Representative, 50<sup>th</sup> District  
The Honorable Kenny Goodenow, State Representative, 51<sup>st</sup> District
- ✓ The Honorable Marshall Ige, State Senator, District 24  
The Honorable Whitney T. Anderson, State Senator, District 25

**10.2 DRAFT EA 30-DAY COMMENT PERIOD**

The following parties provided comments to the Draft EA during the 30-day comment period which commenced on November 23, 1998 and ended on December 23, 1998. Copies of the comment and response letters are included in Appendix C.

- Board of Water Supply, City and County of Honolulu
- Department of Planning and Permitting, City and County of Honolulu
- Department of Transportation Services, City and County of Honolulu
- Department of Land and Natural Resources, Land Division, State of Hawaii

## REFERENCES

- Akinaka & Associates, Ltd. Final Engineering Report for the Kainehe Street, Hamakua Drive, and Keolu Drive Sewer Rehabilitation. November 1998.
- City and County of Honolulu. Flood Insurance Rate Map. Panel 90 of 135. September 28, 1990.
- Department of Land and Natural Resources. Hawaii Stream Assessment. "Aquatic Resources Data Sheet for Kaelepulu Canal." 1984.
- Engineering Concepts. Final Environmental Impact Statement for the Kailua 272 Reservoir. July 1996.
- Federal Emergency Management Agency. Flood Insurance Rate Map. City & County of Honolulu. Community Panel Number 150001 0090 C. Revised September 28, 1990.
- Fewell Geotechnical Engineering, Ltd. Preliminary Geotechnical Engineering Report. March 20, 1997.
- State of Hawaii, Department of Business, Economic Development and Tourism. The State of Hawaii Data Book 1993-94.
- U.S. Department of Agriculture. Soil Conservation Service. Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii. August 1972.

**APPENDIX A**

**DETAILED COST ESTIMATE**

**KAINEHE ST., HAMAKUA DR., & KEOLU DR.  
SEWER REHABILITATION  
PRELIMINARY ENGINEERING REPORT**

**COST ESTIMATE FOR  
SEWER SYSTEM REPLACEMENT (2 YR / 6-HR FLOWS)**

Item No.	Estimated Quantity	Description	Unit Price	Total
1	26,300	Cu. Yds., Unclassified Trench Excavation, including sheeting, dewatering and backfill	\$ 300	\$ 7,890,000
2	375	Lin. Ft. Liner for 12" VCP Host Pipe w/bypass	\$ 260	\$ 97,500
3	210	Lin. Ft. Liner for Existing Manholes	\$ 400	\$ 84,000
4	13	Ea. Manhole Base Repair	\$ 1,000	\$ 13,000
5	100	Lin. Ft. 8" VCP	\$ 130	\$ 13,000
6	20	Lin. Ft. 12" VCP	\$ 140	\$ 2,800
7	450	Lin. Ft. 21" VCP	\$ 160	\$ 72,000
8	1,720	Lin. Ft. 24" VCP	\$ 190	\$ 326,800
9	6,340	Lin. Ft. 27" VCP	\$ 220	\$ 1,394,800
10	0	Lin. Ft. 36" VCP	\$ 300	\$ 0
11	730	Lin. Ft. Precast Concrete Manhole wall w/T-Lock Lining & Rungs	\$ 800	\$ 584,000
12	38	Ea. Manhole Frame & Cover	\$ 300	\$ 11,400
13	38	Ea. Concrete Manhole Base	\$ 900	\$ 34,200
14	85	Ea. Cut & Plug Existing Sewer	\$ 750	\$ 63,750
15	31	Ea. Demolish & Backfill Existing SMH	\$ 1,000	\$ 31,000
16	960	Cu. Yd. Crushed Rock Cushion	\$ 40	\$ 38,400
17	4,800	Sq. Yd. Asphalt Concrete Trench Repaving	\$ 60	\$ 288,000
18	10	Ea. Connection to Existing Sewer	\$ 600	\$ 6,000
19	40	Ea. Connection to Existing Laterals	\$ 150	\$ 6,000

cost-estimate

SELECTED ALTERNATIVES  
AUGUST 1998

**KAINEHE ST., HAMAKUA DR., & KEOLU DR.  
SEWER REHABILITATION  
PRELIMINARY ENGINEERING REPORT**

**COST ESTIMATE FOR  
SEWER SYSTEM REPLACEMENT 2 YR / 6-HR FLOWS)**

Item No.	Estimated Quantity	Description	Unit Price	Total
20	L.S.	L.S. Traffic Control	\$ 16,000	\$ 16,000
21	L.S.	L.S. Adjust Existing Utilities	\$ 40,000	\$ 40,000
22	6,100	Lin. Ft. Precast Concrete Piles & Splices	\$ 90	\$ 549,000
23	80	Ea. Concrete Pile Cap	\$ 1,500	\$ 120,000
24	1,800	Lin. Ft. Drilled Hole for Piles	\$ 40	\$ 72,000
25	800	Lin. Ft. Reinforced Concrete Cradle	\$ 65	\$ 52,000
			Subtotal	\$ 11,805,650
			Mobilization/Demobilization (12%)	\$ 1,416,678
			Contingency (10%)	\$ 1,180,565
			Inflation (1998-2001) @ 2%/yr	\$ 708,339
			<b>TOTAL</b>	<b>\$ 15,111,232</b>
				<b>SAY \$ 15,100,000</b>

cost-estimate

SELECTED ALTERNATIVES  
AUGUST 1998



**APPENDIX B**

**CORRESPONDENCE DURING THE  
PRE-ASSESSMENT CONSULTATION PERIOD**



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

**OFFICE OF PLANNING**

235 South Beretania Street, 6th Fl., Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

BENJAMIN J. CAVETANG  
GOVERNOR  
SEIJI F. NAYA  
DIRECTOR  
BRADLEY J. MOSSMAN  
DEPUTY DIRECTOR  
RICK EGGERD  
DIRECTOR OFFICE OF PLANNING

Tel: (808) 587-2846  
Fax: (808) 587-2824

Ref. No. P-7652

August 17, 1998

**RECEIVED**  
AUG 25 1998

AKINAKA & ASSOCIATES, LTD.

Mr. Henry S. Morita  
Executive Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Dear Mr. Morita:

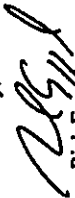
In response to your letter of August 10, 1998, regarding pre-assessment consultation for the sewer rehabilitation project traversing Kanehe Street, Hamakua Drive, and Koolu Drive in the Kailua area, we have the following to offer.

Our primary interest is assurance that the project will be designed and implemented in compliance with the Coastal Zone Management (CZM) objectives and policies as required by Chapter 205A, Hawaii Revised Statutes. In addition, this assessment of compliance is also required by the Office of Environmental Quality Control's administrative rules.

Since construction activities will likely generate polluted runoff, measures to avoid or minimize the impacts should be included in the project design and implemented. Polluted runoff and coastal water quality are important issues of the CZM Program.

If there are any questions about this, please feel free to contact Doug Tom of our CZM Program at 587-2875.

Sincerely,

  
Rick Eggerd  
Director  
Office of Planning

cc: Seiji F. Naya



**AKINAKA & ASSOCIATES, LTD.**

ENGINEERING CONSULTANTS  
Civil Engineering • Land Planning

1101 NORTH BERETANIA STREET, SUITE 200, HONOLULU, HAWAII 96813 • TELEPHONE (808) 538-7771 • FAX (808) 521-2153 • E-MAIL: AAK@AAS.HI.NET  
HONOLULU OFFICE: SALVADOR M. QUINTANILLO, L.P.L.S., BENJAMIN M. GIBLIN, L.P.L.S., WALTER H. HANAUER, P.E., CRAIG R. HATHAWAY, D.D., SUE C. HIRSHITE

October 26, 1998

Mr. Rick Egged,  
Office of Planning  
Department of Business and Economic Development,  
235 South Beretania Street, 6<sup>th</sup> Floor  
Honolulu, Hawaii 96813

RE: Response to Comments Regarding Pre-Assessment Consultation for the  
Kaiehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Project  
Draft Environmental Assessment  
Kailua, Oahu, Hawaii (TMSs: 4-2-01, 03, 16, 82, 89, 90, 95, 4-3-97)

Dear Mr. Egged:

Thank you for your comment letter, dated August 17, 1998, during the pre-assessment consultation period for the Kaiehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Draft Environmental Assessment. We offer the following responses to your comments:

1. COMMENT: "Our primary interest is assurance that the project will be designed and implemented in compliance with the Coastal Zone Management (CZM) objectives and policies as required by Chapter 205A, Hawaii Revised Statutes. In addition, this assessment of compliance is also required by the Office of Environmental Quality Control's administrative rules."

RESPONSE: The City and County of Honolulu, Department of Design and Construction shall be in compliance with Coastal Zone Management objectives and policies in accordance with Chapter 205A, HRS and the administrative rules of the Office of Environmental Quality Control. An assessment of the project's consistency with the CZM objectives and policies will be provided in the environmental assessment.

2. COMMENT: "Since construction activities will likely generate polluted runoff, measures to avoid or minimize the impacts should be included in the project design and implemented. Polluted runoff and coastal water quality are important issues of the CZM Program."

Page 2  
Mr. Rick Egged  
October 26, 1998

RESPONSE: The appropriate National Pollutant Discharge Elimination System (NPDES) general permits will be secured from the State Department of Health (D.O.H.) to regulate any discharges to State waters. D.O.H. approved best management practices will be employed by the selected Contractor during construction of the proposed sewer line. In addition, project specifications will require the Contractor to take appropriate measures during construction to prevent any fuel, oil, or cement products from discharging or leaching into the ocean.

We hope that our responses have adequately addressed your comments. Upon publication of the Draft EA in the Office of Environmental Quality Control's bulletin, you are welcome to submit additional comments during the 30-day review period. If you have any questions or require additional information, please contact me at 536-7721. Thank you for your time.

Sincerely,  
  
Henry S. Morita, P.E.  
Executive Vice-President

cc: City and County of Honolulu, Department of Design and Construction



STATE OF HAWAII  
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
P.O. BOX 118, HONOLULU, HAWAII 96810

LETTER NO (P) 153

**RECEIVED**  
AUG 21 1998

AKINAKA & ASSOCIATES, LTD.

Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817

Attention: Mr. Henry Morita  
Gentlemen:

Subject: Pre-Assessment Consultation for the Kainehe Street, Hamakua Drive, and Keolu Drive Sewer Rehabilitation project

Receipt of your August 10, 1998 letter on the subject matter is acknowledged. Please coordinate this work with the Department of Education Facilities Branch.

If there are any questions, please have your staff call Mr. Allen Yamanoha of the Planning Branch at 586-0483.

Sincerely,

*Gordon Matsuo*  
GORDON MATSUOKA  
Public Works Administrator

AY:JY  
c: DOE with August 10, 1998 letter



**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
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250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817 • TELEPHONE: (808) 538-7771 • FAX: (808) 571-5115 • E-MAIL: AKINAKA@AOL.COM  
ROBERT Y. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
MICHAEL M. MITSUOKA, L.P.E.  
BARRY R. MURRAY, L.P.E.  
SALVADOR M. GUTIERREZ, L.P.E.  
SEUNGJAE KIM, L.P.E.  
MARIAN M. HANAU, L.P.E.  
CHRIS M. HENDERSON  
SITILE A. HANA

October 26, 1998

Mr. Gordon Matsuo  
Public Works Administrator  
Department of Accounting and General Services  
State of Hawaii  
P.O. Box 119  
Honolulu, Hawaii 96810

RE: Response to Comments Regarding Pre-Assessment Consultation for the Kainehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Project  
Draft Environmental Assessment  
Kailua, Oahu, Hawaii (TMK's: 4-2-01-03\_16\_82\_89\_90\_95\_4-3-57)

Dear Mr. Matsuo:

Thank you for your comment letter, dated August 20, 1998, during the pre-assessment consultation period for the Kainehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Draft Environmental Assessment. We offer the following responses to your comments:

1. COMMENT: "Please coordinate this work with the Department of Education Facilities Branch."

RESPONSE: The Department of Education has been notified of the proposed project during the pre-assessment consultation period. Advance notice shall be provided to DOE's Kaelele Elementary School of any planned construction activities.

We hope that our responses have adequately addressed your comments. Upon publication of the Draft EA in the Office of Environmental Quality Control's bulletin, you are welcome to submit additional comments during the 30-day review period. If you have any questions or require additional information, please contact me at 536-7721. Thank you for your time.

Sincerely,

*Henry S. Morita*  
Henry S. Morita, P.E.  
Executive Vice-President

cc: City and County of Honolulu, Department of Design and Construction

Kailua Urban Design Task Force, Inc.

348 Kane Circle, Kailua, Hawaii 96724

RECEIVED

9-2-1998

Mr. Henry S. Morita, P.E.  
Executive Vice President  
AKINAKA & ASSOCIATES, Ltd.  
250 North Beretania St., 300  
Hencible, Hawaii 96817

AKINAKA & ASSOCIATES, LTD.

August 21, 1998

Re: Wainane, Hanakua, Neolu Sewer Rehab

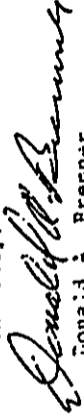
Dear Mr. Morita:

Thank you for notifying us about the pending in on the above project. Our preliminary comments are as follows:

1. The scheduling of the construction work for this project should be coordinated with Councilmember Holmes' planned beautification of Hanakua Dr. - Kailua Rd. to Hanani St.
2. Much discussion has occurred recently about the need for temporary storage of wet-weather flows in Kailua's sewer system. A priority option is to provide storage in underground pipes. The feasibility of providing some storage with this project - either by use of the old line, or by installing new pipe - should be evaluated.
3. Perhaps the new sewer (and/or storage) pipes could be located under the center line of the Hanakua from Kailua to Kailua and Kailua Dr. where median space is available, so when maintenance/repair occurs in the future, traffic flow is not disrupted.

cc: H. Sprague

Sincerely,

  
Donald A. Brenner  
Chairman



**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
Civil Engineering • Land Planning

230 NORTH BERTANHA STREET SUITE 300 HONOLULU HAWAII 96817-4118 • TELEPHONE (808) 538-7721 • FAX (808) 531-2153 • E-MAIL: AKINAKA@AOL.COM  
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BENJAMIN M. CANAL L.P.E.  
JULIAN M. HAHANI L.P.E.  
CHRIS H. MATSUMOTO  
STEPHA MIFANITE

October 26, 1998

Mr. Donald A. Bremner, Chairman  
Kailua Urban Design Task Force, Inc.  
348 Dune Circle  
Kailua, Hawaii 96734

RE: Response to Comments Regarding Pre-Assessment Consultation for the  
Kaihehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Project  
Draft Environmental Assessment  
Kailua, Oahu, Hawaii (TMFs: 4-2-01, 03, 16, 32, 39, 90, 95, 4-3-57)

Dear Mr. Bremner:

Thank you for your comment letter, dated August 21, 1998, during the pre-assessment consultation period for the Kaihehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Draft Environmental Assessment. We offer the following responses to your comments:

- COMMENT:** "The scheduling of the construction work for this project should be coordinated with Councilmember Holmes' planned beautification of Hamakua Dr. - Kailua Rd. to Hahaione St."
  - RESPONSE:** The proposed sewer rehabilitation project along Hamakua Drive shall be coordinated with Councilmember Holmes' planned beautification project of Hamakua Drive (from Kailua road to Hahaione Street) during the project's design phase.
  - COMMENT:** "Much discussion has occurred recently about the need for temporary storage of wet-weather flows in Kailua's sewer system. A priority option is to provide storage in underground pipes. The feasibility of providing some storage with this project - either by use of the old line, or by installing new pipe - should be evaluated."
  - RESPONSE:** Unfortunately, storage of wet-weather flows in the old pipe sections is not a feasible option since these existing lines are heavily deteriorated. Extensive rehabilitation would be required which would be very costly. Due to the existing utilities, including the sewer line to be abandoned, limited space is available beneath the roadway for the installation of a new pipe line to store wet-weather flows. In addition, the construction of a new pipe line may not be as cost-effective than other storage options.
- No storage of wastewater flows is needed for the Kailua Road Wastewater Pump Station. Instead, storage of wastewater flows is needed for the Akumu Wastewater Pump Station drainage area.

Page 2  
Mr. Donald Bremner  
October 26, 1998

3. **COMMENT:** "Perhaps the new sewer (and/or storage) pipes could be located under the center-line of the road (Hamakua from Aolua to Keolu and Keolu Dr. where median space is available) so when maintenance/repair occurs in the future, traffic flow is not disrupted."

**RESPONSE:** After considering the existing utilities beneath the roadway, the best available corridor was selected for the proposed horizontal alignment of the new sewer line. Most of the proposed horizontal alignment is located under a single travel lane so that if maintenance or repairs are required, two lanes would need to be closed (one lane for the equipment, trucks, etc.). Under this option, one lane of traffic would be allowed in each direction.

If the new sewer line is installed beneath the center-line of Hamakua Drive between Aolua Street and Keolu Drive, lane closures would still be required. Repair or maintenance work on the sewer line located in the center of the roadway would partially encroach on both sides of traffic, and may possibly require closure of three lanes.

Installing the new sewer line beneath the existing median along Keolu Drive would be a feasible option. However, the existing sewer line is already located beneath the roadway median. Although the existing sewer line would eventually be abandoned, this line needs to remain in service until the new sewer line is constructed.

We hope that our responses have adequately addressed your comments. Upon publication of the Draft EA in the Office of Environmental Quality Control's bulletin, you are welcome to submit additional comments during the 30-day review period. If you have any questions or require additional information, please contact me at 536-7721. Thank you for your time.

Sincerely,

  
Henry S. Morita, P.E.  
Executive Vice-President

cc: City and County of Honolulu, Department of Design and Construction

**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714



August 26, 1998

SERGEY HARRIS, Mayor  
EDDIE BLORES, JR., Chairman  
FOREST C. MURPHY, Vice Chairman  
KUNIHASHI  
JANILEY ANN  
JONATHAN K. SHIMADA, PhD  
BARBARA YAM STANTON  
CHARLES A. STED  
CLIFFORD S. JAMILE  
Manager and Chief Engineer



250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817-1716 • TELEPHONE (808) 538-7721 • FAX (808) 531-3153 • E-MAIL: AKINAKA@AOKA.HKI  
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HENRY S. MORITA, L.P.E.  
CLIFFORD S. JAMILE, L.P.E.  
MICHAEL A. HANAUSS, L.P.E.  
BARRY A. MURRAY, L.P.E.

**AKINAKA & ASSOCIATES, LTD.**

CONSULTING ENGINEERS  
Civil Engineering • Land Planning

October 26, 1998

Mr. Clifford S. Jamile  
Manager and Chief Engineer  
Board of Water Supply  
City and County of Honolulu  
630 Beretania Street  
Honolulu, Hawaii 96843

**RECEIVED**  
SEP 1 1998

AKINAKA & ASSOCIATES, LTD.

Mr. Henry Morita  
Akinaka and Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817

Dear Mr. Morita:

Subject: Your Transmittal of August 10, 1998 on the Pre-Assessment Consultation Phase for the Kainehe Street, Hamakua Drive and Keolu Drive Sewer Rehabilitation Project, Kaialua, Oahu, Hawaii (TMK: 4-2, 4-3)

RE: Response to Comments Regarding Pre-Assessment Consultation for the Kainehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Project Draft Environmental Assessment  
Kaialua, Oahu, Hawaii (TMK: 4-2-01, 03, 16, 82, 89, 90, 95, 4-3-57)

Dear Mr. Jamile:

Thank you for the opportunity to review and comment on the proposed sewer main replacement project.

We have no objections to the proposed project. The construction plans should be submitted for our review and approval. Board of Water Supply approved reduced pressure principle backflow prevention assemblies will be required on any temporary water meters needed during construction. We reserve further comment until the Draft Environmental Assessment and construction plans are submitted.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

*Clifford S. Jamile*  
CLIFFORD S. JAMILE  
Manager and Chief Engineer

Thank you for your comment letter, dated August 26, 1998, during the pre-assessment consultation period for the Kainehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Draft Environmental Assessment. We offer the following responses to your comments:

1. COMMENT: "...The construction plans should be submitted for our review and approval. Board of Water Supply approved reduced pressure principle backflow prevention assemblies will be required on any temporary water meters needed during construction."  
RESPONSE: Construction plans shall be submitted to the Board of Water Supply for review and approval during the design phase of the project. Should temporary water meters be needed during construction, BWS approved reduced pressure principle backflow prevention assemblies shall be used.

We hope that our responses have adequately addressed your comments. Upon publication of the Draft EA in the Office of Environmental Quality Control's bulletin, you are welcome to submit additional comments during the 30-day review period. If you have any questions or require additional information, please contact me at 536-7721. Thank you for your time.

Sincerely,  
*Henry S. Morita*  
Henry S. Morita, P.E.  
Executive Vice-President

cc: City and County of Honolulu, Department of Design and Construction



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

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SEP 10 1998

ARIZUMA & ASSOCIATES, LTD.

LAURENCE JAMES  
DIRECTOR OF HEALTH

THOMAS E. ARIZUMA  
CHIEF

August 28, 1998

P082955

Mr. Henry S. Morita, P.E.  
Executive Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, HI 96817-4716

Dear Mr. Morita:

Subject: Pre-Assessment Consultation for the Kainehe Street,  
Hemakua Drive, and Keolu Drive Sewer  
Rehabilitation Project  
Kailua, Oahu, Hawaii

The Clean Water Branch has the following comments:

1. The applicant should contact the Army Corps of Engineers (COE) to identify whether a Federal permit (including a Department of Army (DA) permit) is required for this project. A Section 401 Water Quality Certification (WQC) is required for "Any 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..." pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act (CWA)").
2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for each of the following activities which discharges into State Waters:
  - a. Discharge of storm water runoff associated with construction activities that involve the disturbance of five (5) acres or greater, including clearing, grading, and excavation;
  - b. Discharge of hydrotesting water; and
  - c. Discharge of construction dewatering effluent.

Mr. Henry S. Morita, P.E.  
August 28, 1998  
Page 2

Should you have any further questions regarding this matter, please contact Mr. Shane Sumida, Engineering Section of the Clean Water Branch, at 586-4309.

The Wastewater Branch has the following comments:

At this time, we have no adverse comments to offer. We are pleased with the replacement of the existing pipe sections which will hopefully improve the City's wastewater treatment and disposal efforts.

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 further questions, please contact Mr. Harold Yee of the Wastewater Branch at telephone 586-4294.

Sincerely,

THOMAS E. ARIZUMI, P.E., CHIEF  
Environmental Management Division

SS/cr





**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 200, HONOLULU, HAWAII 96817-0718 • TELEPHONE (808) 538-7721 • FAX (808) 531-2133 • E-MAIL: AKINAKA@AOL.COM  
ROBERT S. AKINAKA, L.P.E.  
HENRY P. MORITA, L.P.E.  
SULLIVAN T. TAMASATO, L.P.E.  
DAVID C. SUZUKAWA, L.P.E.

October 26, 1998

Mr. Thomas Arizumi, Chief  
Environmental Management Division  
Department of Health, State of Hawaii  
919 Ala Moana Boulevard, Room 301  
Honolulu, Hawaii 96814-4920

RE: Response to Comments Regarding Pre-Assessment Consultation for the  
Kainehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Project  
Draft Environmental Assessment  
Kailua, Oahu, Hawaii (TRKS: 4-2-01, 03, 16, 82, 89, 90, 95; 4-3-57)

Dear Mr. Arizumi:

Thank you for your comment letter, dated August 28, 1998, during the pre-assessment consultation period for the Kainehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Draft Environmental Assessment. We offer the following responses to your comments:

1. COMMENT: "The applicant should contact the Army Corps of Engineers (COE) to identify whether a Federal permit (including a Department of the Army (DA) permit) is required for this project. A Section 401 Water Quality Certification (WQC) is required for any 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 water..." pursuant to Section 401 (a) (1) of the Federal Water Pollution Act (commonly known as the 'Clean Water Act (CWA)')."

RESPONSE: The proposed sewer line along Hamakua Drive will need to cross beneath Kaelepu Stream. Depending on whether a trenchless construction method will be used for the stream crossing, a Department of the Army Permit, as well as a Section 401 Water Quality Certification may be required. Thus, the proposed project will be coordinated with the Army Corps of Engineers as well as with the Department of Health to satisfy all necessary permit requirements.

Page 2  
Mr. Thomas Arizumi  
October 26, 1998

2. COMMENT: "A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for each of the following activities which discharges into State waters:  
a. Discharge of storm water runoff associated with construction activities that involve the disturbance of five (5) acres or greater, including clearing, grading, and excavation.  
b. Discharge of hydrotesting water, and  
c. Discharge of construction dewatering effluent."


RESPONSE: The appropriate National Pollutant Discharge Elimination System (NPDES) general permits will be secured from the State Department of Health (D.O.H.) prior to any discharges to State waters.

3. COMMENT: "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."

RESPONSE: Construction plans for the proposed project will be in accordance with the applicable provisions of the Chapter 11-62 and will be submitted to the D.O.H. Wastewater Branch for review.

We hope that our responses have adequately addressed your comments. Upon publication of the Draft EA in the Office of Environmental Quality Control's bulletin, you are welcome to submit additional comments during the 30-day review period. If you have any questions or require additional information, please contact me at 536-7721. Thank you for your time.

Sincerely,

  
Henry P. Morita, P.E.  
Executive Vice-President

cc: City and County of Honolulu, Department of Design and Construction



**CITY AND COUNTY OF HONOLULU**  
POLICE DEPARTMENT  
801 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111



JEREMY HARRIS  
MAYOR

LEE D. DONOHUE  
CHIEF  
WILLIAM S. CLARK  
DEPUTY CHIEF

OUR REFERENCE CS-DL

September 3, 1998

**RECEIVED**  
SEP 5 1998

Mr. Henry S. Morita, P.E.  
Executive Vice President  
Akinaka and Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817

AKINAKA & ASSOCIATES, LTD.

Dear Mr. Morita:

This is in response to your letter of August 10, 1998, regarding the pre-assessment consultation for the Kainehe Street, Hamakua Drive, and Keolu Drive sewer rehabilitation project. We have no objection to this project.

It should be noted that construction projects of this type, in spite of mitigation measures, usually generate calls for service due to excessive noise, fugitive dust, and traffic congestion. There are also concerns for pedestrian and vehicular safety in and around the construction sites.

If there are any questions, please call me at 529-3175 or Lieutenant John Thompson of District 4 at 235-7621.

Sincerely,

LEE D. DONOHUE  
Chief of Police

BY *[Signature]*  
JAMES FEHLE  
Assistant Chief of Police  
Administrative Bureau

cc: Lieutenant John Thompson  
District 4



**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96813 • TELEPHONE (808) 529-3111 • FAX (808) 521-3113 • E-MAIL: AKINAKA@AOL.COM  
ROBERT V. MORITA, L.P.E.  
HENRY S. MORITA, L.P.E.  
MICHAEL M. HIRAKAWA, L.P.E.  
BARRY S. HIRAKAWA, L.P.E.  
Mr. Lee Donohue, Chief of Police  
Police Department  
City and County of Honolulu  
801 South Beretania Street  
Honolulu, Hawaii 96813

October 26, 1998

RE: Response to Comments Regarding Pre-Assessment Consultation for the Kainehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Project Draft Environmental Assessment  
Kauiua, Oahu, Hawaii (TMKs: 4-2-01-03-16-82-89-90-95-4-3-57)

Dear Mr. Donohue:

Thank you for your comment letter, dated September 3, 1998, during the pre-assessment consultation period for the Kainehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Draft Environmental Assessment. We offer the following responses to your comments:

- COMMENT:** "It should be noted that construction projects of this type, in spite of mitigation measures, usually generate calls for service due to excessive noise, fugitive dust, and traffic congestion. There are also concerns for pedestrian and vehicular safety in and around the construction sites."  
**RESPONSE:** Although short term impacts such as noise, fugitive dust and traffic congestion are anticipated during construction activities, these impacts are temporary in nature and will be mitigated as best as possible through appropriate measures. An approved traffic control plan for the project route should ensure pedestrian and vehicular safety in and around the construction site.

We hope that our responses have adequately addressed your comments. Upon publication of the Draft EA in the Office of Environmental Quality Control's bulletin, you are welcome to submit additional comments during the 30-day review period. If you have any questions or require additional information, please contact me at 536-7721. Thank you for your time.

Sincerely,  
*[Signature]*  
Henry S. Morita, P.E.  
Executive Vice-President

cc: City and County of Honolulu, Department of Design and Construction



AGRICULTURE DEVELOPMENT PROGRAM  
ADULTIC SERVICES  
ECONOMIC DEVELOPMENT  
ENVIRONMENTAL AND  
RECREATION AND  
RECREATION SERVICES  
COMMUNITY DEVELOPMENT  
POSTAL AND TELEGRAPH  
LAND DIVISION  
LAND DIVISION  
LAND DIVISION  
LAND DIVISION



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
HONOLULU, HAWAII 96817

September 13, 1998

Ref.: AKINAKA.RCH

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SEP 26 1998

LD-NAV

Mr. Henry S. Morita, P.E.  
Akinaoka and Associates, Ltd., Suite 300  
250 North Bertramia Street,  
Honolulu, Hawaii 96817

Dear Mr. Morita:

**SUBJECT:** Review : Pre-Assessment Consultation  
Project : Heolunai Sewer Rehabilitation  
Applicant: Department of Environmental Services,  
City and County of Honolulu  
Location : Kaijua, Island of Oahu, Hawaii  
TRKS : 181/1-2 and 1-3 (VALUABLE RESOURCES)

AKINAKA & ASSOCIATES, LTD.

We have received your letter dated August 10, 1998, requesting the Department of Land and Natural Resources' review and comments on the proposed project.

In general, the Department's review of proposed projects within the State of Hawaii is to comment on any significant impacts adverse to (State of Hawaii Natural Resources) the following resources:

- Water Resources/Streams
- Wildlife and Forestry
- Aquatic Resources
- Conservation Land
- State owned land
- State interest/development

Although informational material such as a Summary, Draft Environmental Assessment (DEA) and Draft Environmental Impact Statement (DEIS) describes fully the proposed project, we suggest that impacts and propose the possible mitigation for unavoidable adverse effects, and provide the possible mitigation for unavoidable damage to natural resources values.

Appropriate division(s) of the Department will review the DEA/DEIS for the subject project when it is submitted and provide comments on any significant impacts.

Please provide to us four (4) copies of the Draft Environmental Assessment. Should you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 575-0438.

Very truly yours,

*Nicholas A. Vaccaro*  
NICHOLAS A. VACCARO  
Administrator

c: At Large Land Board Member  
Oahu District Land Office



**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
Civil Engineering • Land Planning

210 NORTH BERETANIA STREET, SUITE 302, HONOLULU, HAWAII 96817-4715 • TELEPHONE (808) 536-7721 • FAX (808) 531-2153 • E-MAIL: [AKINAKA@AOL.HI](mailto:AKINAKA@AOL.HI)  
ROBERT S. MONITA, P.E.  
SALVADOR M. CASTELLANO, L.P.L.S.  
SHELDON T. HANASATO, L.P.E.  
MICHAEL U. IYER, L.P.E.  
MELISSA M. HARRIS, L.P.E.  
CHRIS M. MATSUMOTO  
STEPH P. IYERANIC

October 26, 1998

Mr. Dean Uchida, Administrator  
Land Division  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii 96809

RE: Response to Comments Regarding Pre-Assessment Consultation for the  
Kaihehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation  
Draft Environmental Assessment  
Kailua, Oahu, Hawaii (TMK# 4-2-01-03-16-82-89-90-95; 4-3-57)

Dear Mr. Uchida:


Thank you for your comment letter, dated September 13, 1998, during the pre-assessment consultation period for the Kaihehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Draft Environmental Assessment. We offer the following responses to your comments:

1. COMMENT: "...Although informational material such as a Summary, Draft Environmental Assessment (DEA) and Draft Environmental Impact Statement (DEIS) describes briefly the proposed project, we suggest that the forthcoming DEA/DEIS discuss in detail all potential short term impacts and propose specific means for averting or minimizing adverse effects, and provide possible mitigation for unavoidable damage to natural resources values."  
RESPONSE: All potential short term impacts as well as any mitigative measures to minimize or avert these impacts to applicable natural resource values shall be discussed in the Draft Environmental Assessment.
2. COMMENT: "Appropriate division(s) of the Department will review the DEA/DEIS for the subject project when it is submitted and provide comments on any significant impacts."  
RESPONSE: Please provide to us four (4) copies of the Draft Environmental Assessment."

Page 2  
October 26, 1998  
Mr. Dean Y. Uchida

RESPONSE: Per your request, four copies of the DEA shall be submitted to the Department of Land and Natural Resources, Land Division upon availability.

We hope that our responses have adequately addressed your comments. Upon publication of the Draft EA in the Office of Environmental Quality Control's bulletin, you are welcome to submit additional comments during the 30-day review period. If you have any questions or require additional information, please contact me at 536-7721. Thank you for your time.

Sincerely,  
  
Henry S. Monita, P.E.  
Executive Vice-President

cc: City and County of Honolulu, Department of Design and Construction

**KANEHOHE RANCH COMPANY, LIMITED**

Castle Junction  
1199 Auloa Road  
Kailua, Hawaii 96734-4606

Telephone (808) 266-1400  
Fax (808) 266-1419

September 14, 1998

Mr. Henry S. Morita  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu 96817-4716

Dear Mr. Morita:

**Subject:** Pre-assessment consultation for the Kainehe Street, Hamakua Drive and Keolu Drive sewer rehabilitation project

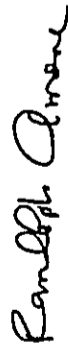
In response to your letter of August 10, we hope the environmental assessment will discuss mitigation of the disruption to businesses in Kailua that will be caused by the proposed sewer rehabilitation project.

One alternative would be to require the contractor along that portion of Hamakua Drive that passes through the business district to do the work at night -- between the hours of 9 p.m. and 5:30 a.m. Sunday through Thursday.

The current sewer problem at the intersection of Hamakua Drive and Hahani Street not only disrupts the traffic, but adversely affects the nearby businesses.

I am curious as to why the section of sewer between Hahani Street and Akoakoa Street must now be replaced. It is my understanding that this sewer line was installed in the mid-1980s at the time the so-called Hamakua Drive extension was constructed.

Sincerely,



Randolph G. Moore

**RECEIVED**  
SEP 16 1998

AKINAKA & ASSOCIATES, LTD.



**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
Civil Engineering • Land Planning

300 NORTH BENTLEY STREET SUITE 200 HONOLULU, HAWAII 96817-1116 • TELEPHONE (808) 538-7711 • FAX (808) 531-3153 • E-MAIL: AAKINAKA@AOL.COM  
ROBERT S. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
S. ELWOOD F. TAMARSSO, L.P.E.  
DAVID A. HUBERTSON, L.P.E.  
SALVADOR J. DURTORIANO, L.P.E.  
BRUCE W. HARRIS, L.P.E.  
JOSEPH B. REILLY, L.P.E.  
HAROLD M. HARRIS, L.P.E.  
CHRISTOPHER J. HARRIS, L.P.E.  
STATE OF HAWAII

October 26, 1998

Mr. Randolph G. Moore  
Kaneohe Ranch Company, Limited  
Castle Junction  
1199 Aulua Road  
Kailua, Hawaii 96734

RE: Response to Comments Regarding Pre-Assessment Consultation for the  
Kainehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Project  
Draft Environmental Assessment  
Kailua, Oahu, Hawaii DTKS: 4-2-01\_03\_16\_82\_89\_90\_95\_4-3-97

Dear Mr. Moore:

Thank you for your comment letter, dated September 14, 1998, during the pre-assessment consultation period for the Kainehe Street, Keolu Drive, and Hamakua Drive Sewer Rehabilitation Draft Environmental Assessment. We offer the following responses to your comments:

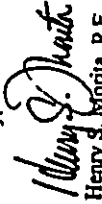
1. **COMMENT:** "...we hope the environmental assessment will discuss mitigation of the disruption to businesses in Kailua that will be caused by the proposed sewer rehabilitation project."  
**RESPONSE:** Measures to mitigate any disruption to businesses near the proposed project route will be discussed in the environmental assessment.
2. **COMMENT:** "One alternative would be to require the contractor along that portion of Hamakua Drive that passes through the business district to do the work at night - between the hours of 9 p.m. and 5:30 a.m. Sunday through Thursday. The current sewer problem at the intersection of Hamakua Drive and Hahani Street not only disrupts the traffic, but adversely affects the nearby businesses."  
**RESPONSE:** The project specifications will require continuous access to all businesses along the project route. Night work in the area of the business district along Hamakua Drive is being considered since there are no residences located in the immediate area. Should night work be deemed feasible, a noise variance shall be obtained from the Department of Health.

Page 2  
October 26, 1998  
Mr. Moore

3. **COMMENT:** "I am curious as to why the section of sewer between Hahani Street and Aokoakoa Street must now be replaced. It is my understanding that this sewer line was installed in the mid-1980s at the time of the so-called Hamakua Drive extension was constructed."

**RESPONSE:** The sewer line section from Aolua Street to Aokoakoa Street was reconstructed in 1983 as part of the "Hamakua Drive-Phase II" project. This unlined reinforced concrete pipe (RCP) has become heavily deteriorated over the years due to corrosion induced by hydrogen sulfide gases. Video inspections of the pipe interior showed heavy deterioration where cement has been corroded and reinforcement exposed. Topographic surveys of existing sewer manhole elevations showed soil settlement exceeding acceptable standards.

We hope that our responses have adequately addressed your comments. Upon publication of the Draft EA in the Office of Environmental Quality Control's bulletin, you are welcome to submit additional comments during the 30-day review period. If you have any questions or require additional information, please contact me at 536-7721. Thank you for your time.

Sincerely,  
  
Henry S. Morita, P.E.  
Executive Vice-President

cc: City and County of Honolulu, Department of Design and Construction





DEPARTMENT OF PARKS AND RECREATION  
CITY AND COUNTY OF HONOLULU

810 SOUTH KING STREET, 10TH FLOOR • HONOLULU, HAWAII 96813  
PHONE 808/533-4188 • FAX 808/533-4054



JEFFREY HARRIS  
DIRECTOR

United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

P.O. Box 52004  
Honolulu, HI  
96850

WILLIAM D. BALFOUR, JR.  
DIRECTOR

MICHAEL T. ANNE  
DEPUTY DIRECTOR

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SEP 5 1998

ADYAKA & ASSOCIATES, LTD.

Mr. Henry S. Morita, P.E.  
Executive Vice President  
Akinaka and Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Dear Mr. Morita:

Re: Pre-Assessment Consultation for the Kainahe Street,  
Hamakua Drive, and Keolu Drive Sewer Rehabilitation Project

We have reviewed the above-described project and have no comment  
to offer at this time.

Thank you for the opportunity to review the plan.

If you have any questions, please contact Mr. John Eveland,  
Executive Assistant, at 527-6038.

*W. D. Balfour, Jr.*  
WILLIAM D. BALFOUR, JR.  
Director

WDB:CU  
(91-193751)



Our People...Our Islands...In Harmony

September 14, 1998

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SEP 15 1998  
ADYAKA & ASSOCIATES, LTD.

Mr. Henry S. Morita, P.E.  
Executive Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Dear Mr. Morita:

Subject: Pre-Assessment Consultation for the Kainahe St., Hamakua Dr., and Keolu  
Drive Sewer Rehabilitation Project

We have reviewed the above mentioned document and have no comments to offer at  
this time.

Thank you for the opportunity to review this document.

Sincerely,

*Kenneth M. Kaneshiro*  
KENNETH M. KANESHIRO  
State Conservationist

The Natural Resources Conservation Service works hand-in-hand with  
the American people to conserve natural resources on private lands

AN EQUAL OPPORTUNITY EMPLOYER

**APPENDIX C**

**CORRESPONDENCE DURING THE  
DRAFT EA 30-DAY COMMENT PERIOD**

**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714



JEREMY HARRIS, Mayor  
EDDIE FLORES, JR., Chairman  
FORREST C. MURPHY, Vice Chairman  
KAZU HAYASHIDA  
JAN M.L.Y. AMII  
JONATHAN K. SHIMADA, PhD  
BARBARA KIM STANTON  
CHARLES A. STED

CLIFFORD S. JAMILE  
Manager and Chief Engineer

December 22, 1998

**RECEIVED**  
DEC 26 1998

AKINAKA & ASSOCIATES, LTD.

Akinaka and Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817

Attention: Henry Morita

Gentlemen:

Subject: Your Transmittal of November 11, 1998 of the Draft Environmental Assessment for the Kainehe Street, Hamakua Drive and Keolu Drive Sewer Rehabilitation Project, Kailua, Oahu, Vicinity of TMK: 4-2-01, 03, 16, 82, 89, 90, 95; 4-3-57

Thank you for the opportunity to review and comment on the proposed sewer main replacement project.

We have no objections to the proposed project. Our previous comments of August 26, 1998 have been adequately addressed by the document.

If you have any questions, please contact Barry Usagawa at 527-5235.

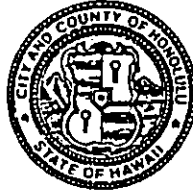
Very truly yours,

CLIFFORD S. JAMILE  
Manager and Chief Engineer

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 523-4564 • FAX: (808) 523-4567

JEREMY HARRIS  
MAYOR



RECEIVED  
JAN 15 1999

RANDALL K. FUJIKI, AIA  
DIRECTOR

ROLAND D. LIBBY, JR., AIA  
DEPUTY DIRECTOR

AKINAKA & ASSOCIATES, LTD.

DCP 99-27

January 13, 1999

MEMORANDUM

TO: MR. CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER  
BOARD OF WATER SUPPLY

FROM: *R. K. Fujiki*  
RANDALL K. FUJIKI, DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT RESPONSE TO COMMENTS ON THE DRAFT ENVIRONMENTAL  
ASSESSMENT FOR THE KAINEHE STREET, HAMAKUA DRIVE, AND  
KEOLU DRIVE SEWER REHABILITATION PROJECT  
KAILUA, OAHU, HAWAII (TMKs: 4-2-01, 03, 16, 82, 89, 90, 95; 4-3-57)

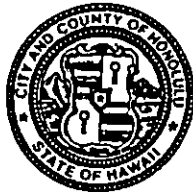
Thank you for your letter dated December 22, 1998, during the 30-day comment period for the Kainehe Street, Hamakua Drive, and Keolu Drive Sewer Rehabilitation Draft Environmental Assessment. The letter was addressed to Akinaka and Associates, Ltd., the consultant for this project. We acknowledge that you have no objections to the proposed project.

If you have any questions or require additional information, please contact Mr. Sung Ho Lai, Division of Planning and Programming at 5398.

cc: Akinaka and Associates, Ltd.  
Office of Environmental Quality Control

DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET • HONOLULU, HAWAII 96813  
PHONE: (808) 523-4414 • FAX: (808) 527-6743



**RECEIVED**  
DEC 24 1998

AKINAKA & ASSOCIATES, LTD.

JAN NAOE SULLIVAN  
DIRECTOR

LORETTA K.C. CHEE  
DEPUTY DIRECTOR

JEREMY HARRIS  
MAYOR

1998/CLOG-262 (ST)  
98 EA Comments Zone 4

December 23, 1998

MEMORANDUM

TO: RANDALL K. FUJIKI, DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: JAN NAOE SULLIVAN, DIRECTOR  
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA): KAINEHU STREET,  
HAMAKUA AND KEOLU DRIVES SEWER REHABILITATION,  
KAILUA, OAHU  
TAX MAP KEYS: 4-2-1, 3, 16, 82, 89, 90, 95; 4-3-57

We have reviewed the Draft EA for the above-referenced project received on November 12, 1998, and have the following comments:

**Sections 3.3 and 5.1.7 - Land Use**

The Draft EA does not disclose that a significant portion of the project, along most of Hamakua Drive, is located within the Special Management Area (SMA). The Final EA should be revised to include a subsection that discloses this fact and includes an exhibit illustrating the SMA boundaries relative to the project alignment. The Final EA could then disclose that the proposed repair/replacement of utility lines within existing utility alignments does not require an SMA permit pursuant to Section 25-1.3(2), ROH.

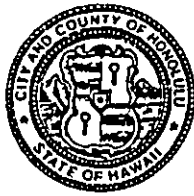
**Section 9.3 Permits/Approvals - City and County of Honolulu**

The Draft EA incorrectly indicates that a Temporary Use Approval (TUA) is required. Insofar as the proposed project is considered a "public use," a TUA is not required.

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 523-4564 • FAX: (808) 523-4567

JEREMY HARRIS  
MAYOR



RANDALL K. FUJIKI, AIA  
DIRECTOR

ROLAND D. LIBBY, JR., AIA  
DEPUTY DIRECTOR

January 13, 1999

RECEIVED  
JAN 15 1999  
DCP 99-28

AKIHAKA & ASSOCIATES, LTD.

MEMORANDUM

TO: MS. JAN NAOE SULLIVAN, DIRECTOR  
DEPARTMENT OF PLANNING AND PERMITTING

FROM: *[Signature]* RANDALL K. FUJIKI, DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: RESPONSE TO COMMENTS ON THE DRAFT ENVIRONMENTAL  
ASSESSMENT FOR THE KAINEHE STREET, HAMAKUA DRIVE, AND  
KEOLU DRIVE SEWER REHABILITATION PROJECT  
KAILUA, OAHU, HAWAII (TMKs: 4-2-01, 03, 16, 82, 89, 90, 95; 4-3-57)

Thank you for your comment memorandum, dated December 23, 1998, during the 30-day comment period for the Kainehe Street, Hamakua Drive, and Keolu Drive Sewer Rehabilitation Draft Environmental Assessment. We offer the following responses to your comments:

1. COMMENT: "Sections 3.3 and 5.1.7 - Land Use  
The Draft EA does not disclose that a significant portion of the project, along most of Hamakua Drive, is located within the Special Management Area (SMA). The Final EA should be revised to include a subsection that discloses this fact and includes an exhibit illustrating the SMA boundaries relative to the project alignment. The Final EA could then disclose that the proposed repair/replacement of utility lines within existing utility alignments does not require an SMA permit pursuant to Section 25-1.3(2), ROH."  
  
RESPONSE: The Final EA shall be revised to incorporate a description and exhibit of the project location relative to the boundaries of the Special Management Area. The Final EA shall also discuss the proposed project's exemption to the SMA requirements pursuant to Section 25-1.3(2), ROH.

Ms. Jan Naoe Sullivan

-2-

January 13, 1999

2. **COMMENT:** "Section 9.3 Permits/Approvals - City and County of Honolulu  
The Draft EA incorrectly indicates that a Temporary Use Approval (TUA)  
is required. Insofar as the proposed project is considered a 'public use,' a  
TUA is not required."

**RESPONSE:** Reference to a "Temporary Use Approval" shall be deleted from the text  
in the Final EA.

If you have any questions or require additional information, please contact Mr. Sung Ho Lai,  
Division of Planning and Programming at 5398.

cc: Akinaka and Associates, Ltd.  
Office of Environmental Quality Control





STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
P.O. BOX 621  
HONOLULU, HAWAII 96809

DEC 23 1998

*Jim 12/26*

AQUACULTURE DEVELOPMENT  
PROGRAM  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
LAND DIVISION  
STATE PARKS  
WATER RESOURCE MANAGEMENT

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DEC 24 1998

AKINAKA & ASSOCIATES, LTD.

Ref: PS:EH

Mr. Henry S. Morita, P.E.  
Executive Vice-President  
Akinaka & Associates  
250 North Beretania Street  
Honolulu, Hawaii 96817

Dear Mr. Morita:

Subject: Draft Environmental Assessment (DEA),  
Kainehe Street, Hamakua and Kealu Drive Sewer  
Rehabilitation

We have reviewed the subject DEA and offer the attached comments  
from our Engineering Branch related to flood control management.

Thank you for the opportunity to comment on this matter. Should  
you have any questions, please contact staff planner, Ed Henry at  
587-0380.

Very truly yours,

*Dean Uchida*  
Dean Uchida,  
Administrator

Attachment

c.c. Engineering Branch

## ENGINEERING BRANCH

### COMMENTS

Our current projects and programs are not effected by the proposed project, if the pipeline is rehabilitated employing trenchless technology methods.

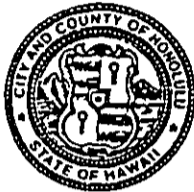
Should trenchless technology methods not be employed, the design consultant should be aware of the following:

1. The proposed project site along Hamakua Drive and a portion of Kainehe Street is confirmed by us to be located in Zone X (shaded). This is an area subject to either one of the following conditions:
  - a. Located within the 500-year flood plain.
  - b. Located within the 100-year flood plain with average depths of less than 1 foot or with drainage areas less than 1 square mile.
  - c. Areas protected by levees from 100-year flood.
2. Portion of Hamakua Drive at Kaelepulu Stream Crossing is also confirmed to be located in Zone AE. This is an area within the 100-year flood plain with base flood elevation of 6 feet.
3. Besides portions of Hamakua Drive and Kainehe Street as stated on p. 3-6 of the DEA, the proposed project site along Keolu Drive is also located in Zone X (unshaded). This is an area outside the 500-year flood plain.

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

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JEREMY HARRIS  
MAYOR



RANDALL K. FUJIKI, AIA  
DIRECTOR

ROLAND D. LIBBY, JR., AIA  
DEPUTY DIRECTOR

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JAN 15 1999

DCP 99-25

January 13, 1999

AKINAKA & ASSOCIATES, LTD.

Mr. Dean Uchida, Administrator  
Land Division  
Department of Land and Natural Resources  
State of Hawaii  
P.O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Uchida:

SUBJECT: Response to Comments on the Draft Environmental Assessment for the Kainehe Street, Hamakua Drive, and Keolu Drive Sewer Rehabilitation Project Kailua, Oahu, Hawaii (TMKs: 4-2-01, 03, 16, 82, 89, 90, 95; 4-3-57)

Thank you for your comment letter, dated December 23, 1998, during the 30-day comment period for the Kainehe Street, Hamakua Drive, and Keolu Drive Sewer Rehabilitation Draft Environmental Assessment. We offer the following responses to your comments:

COMMENT: "Should trenchless methods not be employed, the design consultant should be aware of the following conditions:

- Located within the 500-year flood plain.
- Located within the 100-year flood plain with average depths of less than 1 foot or with drainage areas less than 1 square mile.
- Areas protected by levees from 100-year flood.

Portion of Hamakua Drive at Kaelepulu Stream Crossing is also confirmed to be located in Zone AE. This is an area within the 100-year flood plain with base flood elevation of 6 feet.

Besides portions of Hamakua Drive and Kainehe Street as stated on p. 3-6 of the DEA, the proposed project site along Keolu Drive is also located in Zone X (unshaded). This is an area outside the 500-year flood plain."

Mr. Dean Uchida  
Page 2  
January 13, 1999

**RESPONSE:** The Final EA will identify Keolu Drive as being located within "Zone X". The design consultant will comply with the applicable flood hazard requirements pursuant to Section 7.10 of the City and County of Honolulu's Land Use Ordinance. A copy of this letter will be forwarded to the design consultant.

If you have any questions or require additional information, please contact Mr. Sung Ho Lai, Division of Planning and Programming at 527-5398.

Very truly yours,

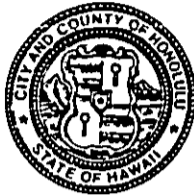
  
RANDALL K. FUJIKI  
Director

cc: Engineering Solutions, Inc.  
Akinaka and Associates, Ltd.  
Office of Environmental Quality Control  
Division of Infrastructure Design & Engineering

DEPARTMENT OF TRANSPORTATION SERVICES  
**CITY AND COUNTY OF HONOLULU**

PACIFIC PARK PLAZA • 711 KAPIOLANI BOULEVARD, SUITE 1200 • HONOLULU, HAWAII 96813  
PHONE: (808) 523-4529 • FAX: (808) 523-4730

JEREMY HARRIS  
MAYOR



**RECEIVED**  
DEC 30 1998

CHERYL D. SOON  
DIRECTOR

JOSEPH M. MAGALDI, JR.  
DEPUTY DIRECTOR

AKINAKA & ASSOCIATES, LTD.

December 28, 1998

TPD 11/98-06715R

Mr. Henry S. Morita, P.E.  
Executive Vice-President  
Akinaka and Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Dear Mr. Morita:

Subject: Kainehe Street, Hamakua Drive and Keolu Drive  
Sewer Rehabilitation

In response to your November 11, 1998 letter, the draft environmental assessment for the subject project was reviewed. The following comments are the result of this review:

1. As the project becomes more defined as it progresses towards implementation, site-specific anticipated traffic impacts during construction and their proposed mitigation measures need to be detailed and coordinated with this department.
2. Area residents, the neighborhood board, and area businesses should be apprised of the project and its traffic impacts prior to commencement of construction. Any required closure of private driveways should be coordinated with affected property owners prior to such closure.
3. A "Notice to Motorists" should be published in the daily newspaper(s) informing the motoring public of the road work, especially in regards to required roadway closures and detours.
4. In addition to notifying the police, fire and emergency services of the construction activities and scheduling, please provide this same information to this department. We can then alert Oahu Transit Services of the construction activity.

Mr. Henry S. Morita  
December 28, 1998  
Page 2

Should you have any questions regarding these comments, please contact Faith Miyamoto of the Transportation Planning Division at 527-6976.

Sincerely,

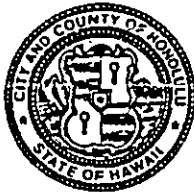


CHERYL D. SOON  
Director

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
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JEREMY HARRIS  
MAYOR



RANDALL K. FUJIKI, AIA  
DIRECTOR

RECEIVED  
JAN 15 1999

ANDREW D. LIBBY, JR., AIA  
DEPUTY DIRECTOR

DCP 99-26

January 13, 1999

AKINAKA & ASSOCIATES, LTD.

MEMORANDUM

TO: MS. CHERYL SOON, DIRECTOR  
DEPARTMENT OF TRANSPORTATION SERVICES

FROM:  RANDALL K. FUJIKI, DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: RESPONSE TO COMMENTS ON THE DRAFT ENVIRONMENTAL  
ASSESSMENT FOR THE KAINEHE STREET, HAMAKUA DRIVE, AND  
KEOLU DRIVE SEWER REHABILITATION PROJECT  
KAILUA, OAHU, HAWAII (TMKS: 4-2-01, 03, 16, 82, 89, 90, 95; 4-3-57)

Thank you for your comment letter, dated December 28, 1998, during the 30-day comment period for the Kainehe Street, Hamakua Drive, and Keolu Drive Sewer Rehabilitation Draft Environmental Assessment. The letter was addressed to Akinaka and Associates, Ltd., the project consultant. We offer the following responses to your comments:

1. COMMENT: "As the project becomes more defined as it progresses towards implementation, site-specific anticipated traffic impacts during construction and their proposed mitigation measures need to be detailed and coordinated with this department."

RESPONSE: A traffic control plan will be submitted by the design consultant for review and approval. Site-specific traffic impacts/mitigative measures will be coordinated with the Department of Transportation Services.

2. COMMENT: "Area residents, the neighborhood board, and area businesses should be apprised of the project and its traffic impacts prior to commencement of construction. Any required closure of private driveways should be coordinated with affected property owners prior to such closure."

RESPONSE: Prior to construction of the proposed project, affected parties shall be notified of potential traffic impacts. Typically, project notification is presented by the design consultant at all applicable neighborhood board meetings. The selected contractor will coordinate the details of any temporary driveway closures with the property owners.

3. COMMENT: "A 'Notice to Motorists' should be published in the daily newspaper(s) informing the motoring public of the road work, especially in regards to required roadway closures and detours."

RESPONSE: The selected contractor shall publish a "Notice to Motorists" of the proposed construction activities along Kainehe Street, Hamakua Drive and Keolu Drive and any associated road closures/detours in the Honolulu Star Bulletin and/or Honolulu Advertiser as normally required by the construction contract specifications.

4. COMMENT: "In addition to notifying the police, fire and emergency services of the construction activities and scheduling, please provide this same information to this department. We can then alert Oahu Transit Services of the construction activity."

RESPONSE: The Department of Transportation Services shall be kept informed of the proposed construction activities and scheduling so that the Oahu Transit Services can also be notified. The selected contractor is typically required to notify DTS as specified in the traffic notes of the construction contract documents.

If you have any questions or require additional information, please contact Mr. Sung Ho Lai, Division of Planning and Programming at 5398.

cc: Engineering Solutions, Inc.  
Akinaka and Associates, Ltd.  
Office of Environmental Quality Control  
Division of Infrastructure Design & Engineering