

City and County of Honolulu
Department of Design and Construction
Planning Branch
Wastewater Division

MŌ‘ILI‘ILI-KAPAHULU
SEWER REHABILITATION / RECONSTRUCTION
Draft Environmental Assessment

Prepared for:

Akinaka & Associates, Inc.

Prepared by:



September 2009

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	PROJECT SUMMARY.....	1
1.2	LOCATION	2
1.3	LAND OWNERSHIP	2
1.4	IDENTIFICATION OF APPLICANT.....	2
1.5	IDENTIFICATION OF ENVIRONMENTAL CONSULTANT.....	2
1.6	IDENTIFICATION OF APPROVING AGENCY.....	3
1.7	COMPLIANCE WITH STATE OF HAWAI'I AND CITY AND COUNTY OF HONOLULU ENVIRONMENTAL LAWS.....	3
1.8	IDENTIFICATION OF AGENCIES CONSULTED.....	3
2.0	PROJECT DESCRIPTION.....	5
2.1	LOCATION	5
2.2	DESCRIPTION OF THE MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION.....	5
2.2.1	General Background.....	6
2.2.2	Environmental Sustainability.....	7
2.2.3	Project Implementation.....	8
3.0	DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES.....	11
3.1	CLIMATE	11
3.2	GEOLOGY AND TOPOGRAPHY	11
3.3	SOILS	12
3.3.1	Natural Resources Conservation Service (NRCS).....	12
3.3.2	Land Study Bureau Detailed Land Classification	13
3.3.3	Agricultural Lands of Importance to the State of Hawai'i (ALISH) ...	13
3.4	FLORA AND FAUNA.....	14
3.5	NATURAL HAZARDS.....	15
4.0	DESCRIPTION OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES.....	19
4.1	HISTORIC, ARCHAEOLOGICAL AND CULTURAL RESOURCES	19
4.1.1	Historic and Archaeological Resources.....	19
4.1.2	Cultural Resources.....	19
4.2	HAZARDOUS MATERIALS	21
4.3	ROADWAYS AND TRAFFIC	21
4.4	NOISE	25
4.4.1	Construction Noise	25
4.4.2	Operational Noise.....	26
4.5	AIR QUALITY	27
4.6	VISUAL RESOURCES.....	28
4.7	SOCIAL & ECONOMIC CHARACTERISTICS.....	28

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

4.8	INFRASTRUCTURE AND UTILITIES.....	29
4.8.1	Potable Water System.....	29
4.8.2	Wastewater System.....	29
4.8.3	Drainage System.....	29
4.8.4	Energy and Communications Systems	30
4.8.5	Solid Waste	31
4.9	PUBLIC SERVICES AND FACILITIES.....	31
5.0	LAND USE CONFORMANCE.....	33
5.1	STATE OF HAWAII.....	33
5.1.1	State Land Use Law, Chapter 205, Hawai'i Revised Statutes.....	33
5.1.2	Coastal Zone Management Act, Chapter 205A, Hawai'i Revised Statutes	33
5.1.3	Hawai'i State Planning Act, Chapter 226, Hawai'i Revised Statutes	39
5.2	CITY AND COUNTY OF HONOLULU PLANS	41
5.2.1	O'ahu General Plan.....	41
5.2.2	Primary Urban Center Development Plan	41
5.2.3	Land Use Ordinance	42
5.3	LIST OF REQUIRED PERMITS AND APPROVALS	43
6.0	ALTERNATIVES.....	45
6.1	NO ACTION	45
6.2	ALTERNATIVES	45
6.2.1	ALTERNATIVES for Reconstruction of Existing Conveyance Lines ..	46
6.2.2	ALTERNATIVES Technologies Considered for Relief Pipe Construction	48
6.2.3	ALTERNATIVE Technologies Assessed for Manhole Rehabilitation.	49
7.0	FINDINGS, SUPPORTING REASONS, AND ANTICIPATED DETERMINATION..	51
7.1	PROBABLE IMPACT, INCLUDING CUMULATIVE IMPACTS	51
7.2	SIGNIFICANCE CRITERIA	51
7.3	ANTICIPATED DETERMINATION.....	54
8.0	REFERENCES CITED	55

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

LIST OF FIGURES

Figure		Follows Page
1	Tax Map Key Plat Map	2
2	Regional Location Map.....	6
3	Site Photos/Photo Key	6
4	Geologic Map	12
5	Topography Map.....	12
6	NRCS Soil Survey Map	12
7	Agricultural Lands of Importance to the State of Hawai'i.....	14
8	Wetlands Map	14
9	Critical Habitats Map.....	14
10	Flood Insurance Rate Map	16
11	State Land Use District	34
12	City and County of Honolulu Primary Urban Center Development Plan	42
13	City and County of Honolulu Zoning.....	42

LIST OF TABLES

Table		Page
2-1	Estimated Construction Cost	9
4-1	Impaired Water Bodies Potentially Impacted by Activities proposed Construction Activities	30
5-1	Required Permits and Approvals	43
6-1	Rating Matrix for Reconstruction of Existing Conveyance Line Alternatives	47
6-2	Rating Matrix for Construction Alternatives for Relief Pipe	49
6-3	Rating Matrix for Construction Alternatives for Manhole Rehabilitation.....	50

APPENDIX

Appendix A	Pre-consultation Letters and Responses
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MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

LIST OF ACRONYMS

The following is a list of terms, abbreviations, and acronyms used in this document.

A

ACOE	US Army Corps of Engineers
ADA	Americans with Disability Act
ALISH	Agricultural Lands of Importance to the State of Hawai'i
AM	Morning

B

BMPs	Best Management Practices
BWS	City and County of Honolulu, Board of Water Supply
bgs	below ground surface

C

CATV	Cable television
CFC	Chlorofluorocarbons
CIA	Cultural Impact Assessment
CIP	Capital Improvement Project
CIPP	Cured in place piping
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act

D

DAGS	State of Hawai'i, Department of Accounting and General Services
dba	Doing business as
DDC	City and County of Honolulu, Department of Design and Construction
DLNR	State of Hawai'i, Department of Land & Natural Resources
DOA	United States Department of the Army
DOD	State of Hawai'i, Department of Defense
DOH	State of Hawai'i, Department of Health
DP	Development Plan
DPP	City and County of Honolulu, Department of Planning & Permitting
DTS	City and County of Honolulu, Department of Transportation Services

E

EA	Environmental Assessment
EB	Eastbound
EIS	Environmental Impact Statement
EmA	'Ewa Silty Clay Loam
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ETS	Environmental Tobacco Smoke

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION

DEPARTMENT OF DESIGN AND CONSTRUCTION DRAFT ENVIRONMENTAL ASSESSMENT

F

F	Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FL	Fill Land, Mixed
FM	Domestic/fire service (water meter)
FONSI	Finding of No Significant Impact
FPMO	UH Facilities Planning and Management Office
FSC	Forest Stewardship Council
FWCA	Fish and Wildlife Coordination Act

G

GPD	Gallons per day
GPM	Gallons per minute

H

H-POWER	Honolulu Program of Waste Energy Recovery
HAR	Hawai'i Administrative Rules
HCM	Highway Capacity Manual
HECO	Hawaiian Electric Company
HFD	Honolulu Fire Department
HHCTCP	Honolulu High-Capacity Transit Corridor project
HPD	Honolulu Police Department
HOV	High Occupancy Vehicle
HRS	Hawai'i Revised Statutes
HVAC	Heating, ventilation and air conditioning

I

IBC	International Building Code
-----	-----------------------------

K

KIA	Kawihapai Clay Loam
kVA	Kilovolt Amperes
KW	Kilowatt
KWhr	Kilowatt hour
KYADG	KYA Design Group

L

LEED	Leadership in Energy and Environmental Design
LEED NC	LEED New Construction
LOS	Level-of-service is a quantitative and qualitative assessment of traffic operations
LRDP	Long Range Development Plan
LSB	Land Study Bureau
LT	Left turn
LUC	State of Hawai'i, Land Use Commission
LUO	Land Use Ordinance

M

MPH	Miles per hour
MSL	Mean sea level
MUTCD	Manual on Uniform Traffic Control Devices

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

	MVA	Megavolt Amperes
N		
	NEPA	National Environmental Policy Act
	NFPA 10	National Fire Protection Association Standard for Portable Fire Extinguishers
	NHPA	National Historic Preservation Act
	NOAA	National Oceanic and Atmospheric Administration
	NPDES	National Pollutant Discharge Elimination System
	NRCS	Natural Resources Conservation Service
	NWS	National Weather Service
O		
	OCCL	Department of Land and Natural Resources, Office of Conservation and Coastal Lands
	OHA	Office of Hawaiian Affairs
	OSHA	Occupational Safety and Health Administration
	OTWC	Oceanic Time Warner Cable
P		
	PM	Afternoon
	psi	Pounds per square inch
	PUC	Primary Urban Center
R		
	ROH	Revised Ordinances of Honolulu
	RT	Right-turn
S		
	SF	Square feet
	SHPD	State Historic Preservation Division
	SMA	Special Management Area
	SMP	Special Management Area Use Permit
	SOx	Sulfur Oxides
	SOI	Secretary of the Interior
T		
	TH	Through (traffic)
	TIAR	Traffic Impact Analysis Report
	TMDL	Total Maximum Daily Load
	TMK	Tax Map Key
U		
	UIC	Underground Injection Control Line
	USC	United States Code
	USGS	U.S. Geological Survey
V		
	VOC	Volatile organic compound
W		
	WB	Westbound
	WMP	Water Management Plan

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

1.0 INTRODUCTION

This Draft Environmental Assessment (EA) is prepared in accordance with Chapter 343, Hawai'i Revised Statutes (HRS) for the proposed rehabilitation and reconstruction of the sewage conveyance system in Kapahulu and Mō'ili'ili along Date Street, hereinafter referred to as "Mō'ili'ili-Kapahulu Sewer Rehabilitation/Reconstruction."

1.1 PROJECT SUMMARY

Project Name:	Mō'ili'ili and Kapahulu Sewer Rehabilitation
Location:	Honolulu, O'ahu
Tax Map Key (TMK):	various, see Figure 1, TMK plat map
Applicant:	City and County of Honolulu, Department of Design and Construction
Landowner:	City and County of Honolulu
Existing Use:	Sewage Conveyance System
Proposed Action:	Reconstruction and Rehabilitation of Mō'ili'ili and Kapahulu sewer lines along Date Street between Pumehana Street and Lukepane Avenue
Project Area:	Date Street road right-of-way between Pumehana Street and Lukepane Avenue
Land Use Designations:	State Land Use: Urban City and County of Honolulu: Primary Urban Center, East City and County of Honolulu Zoning: A-1 Low Density Apartment; A-2 Medium Density Apartment; A-3 High Density Apartment
Special Management Area:	The project is not in the Special Management Area (SMA)
Permits/Approvals Requested:	Approval of Project Construction Plans Building and Grading Permits Department of Army Jurisdictional Determination State Historic Preservation review National Pollutant Discharge Elimination System (NPDES)
Approving Agency:	Department of Design and Construction

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Anticipated Determination: Finding of No Significant Impact (FONSI)

1.2 LOCATION

The proposed project is located within City and County of Honolulu road right-of-ways along Date Street between Pumehana Street and Lukepane Avenue.

1.3 LAND OWNERSHIP

The City and County of Honolulu holds title to the land under the location of the proposed action. Due to the location within existing right-of-ways, no TMK have been assigned to the area of the proposed action (Figure 1).

Contact: Mr. Jay Hamai, Assistant Chief
Wastewater Division
City and County of Honolulu
650 South King Street, 14th Floor
Honolulu, Hawai'i 96813
Phone: (808) 768-8480
Fax: (808) 768-4567

1.4 IDENTIFICATION OF APPLICANT

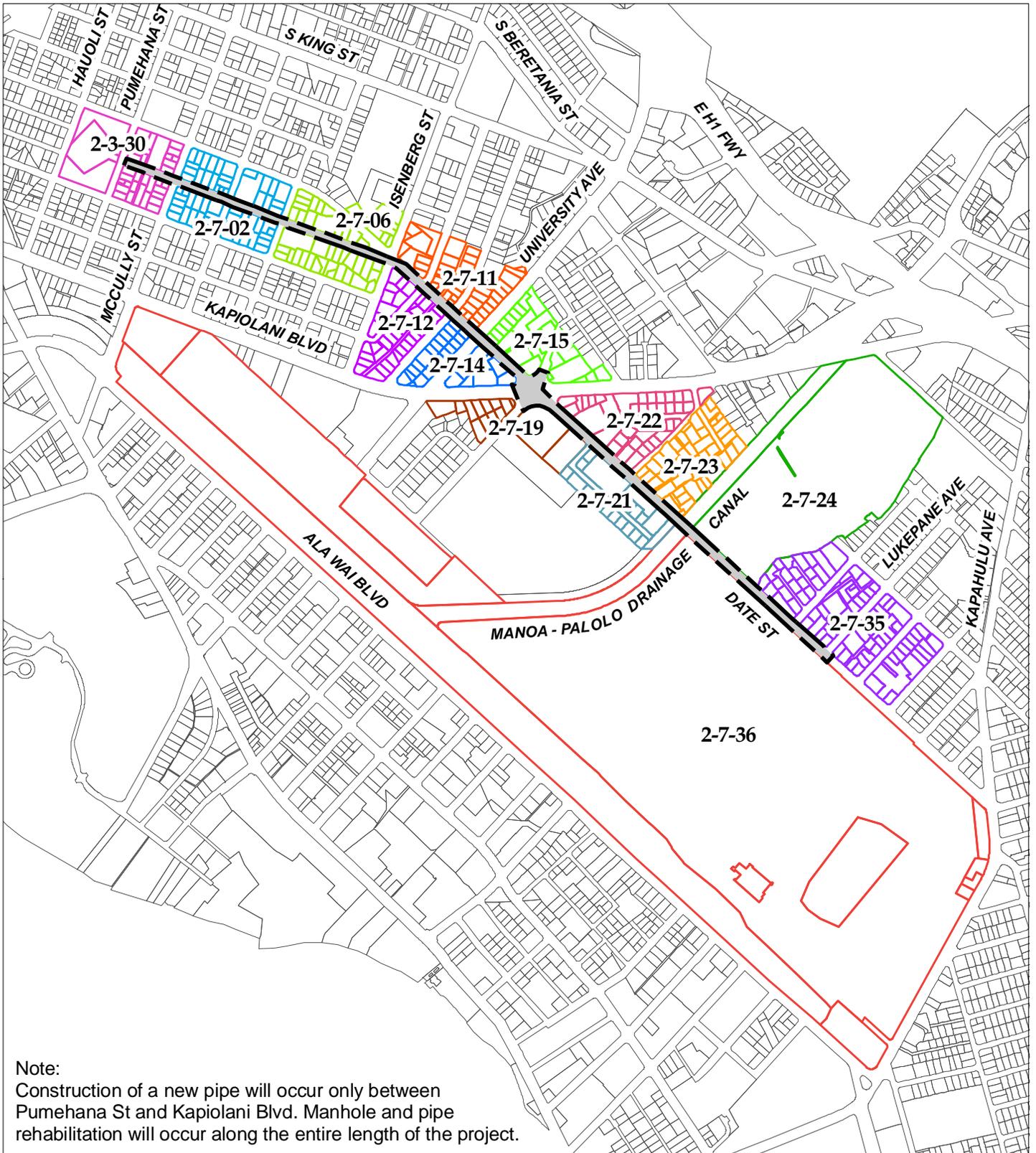
The City and County of Honolulu is the project applicant.

Contact: Mr. Jay Hamai, Assistant Chief
Wastewater Division
Department of Design and Construction
City and County of Honolulu
650 South King Street, 14th Floor
Honolulu, Hawai'i 96813
Phone: (808) 768-8480
Fax: (808) 768-4567

1.5 IDENTIFICATION OF ENVIRONMENTAL CONSULTANT

The environmental consultant is PBR HAWAII & Associates, Inc. dba PBR HAWAII, a sub-consultant under contract with Akinaka & Associates Limited.

Contact: Malia Cox
Planner
PBR HAWAII
1001 Bishop Street
Suite 650
Honolulu, Hawai'i 96813

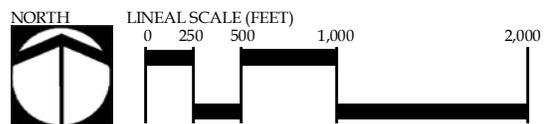


Note:
 Construction of a new pipe will occur only between
 Pumehana St and Kapiolani Blvd. Manhole and pipe
 rehabilitation will occur along the entire length of the project.

LEGEND
 Project Site

FIGURE 1
 Tax Map Key Plat Map
**Moiliili-Kapahuhu Sewer
 Rehabilitation / Reconstruction**

CLIENT ISLAND OF OAHU



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MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
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Phone: (808) 521-5631

Fax: (808) 523-1402

1.6 IDENTIFICATION OF APPROVING AGENCY

The City and County of Honolulu, Department of Design and Construction is the approving agency.

Contact: Mr. Craig Nishimura, P.E., Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawai'i 96813
Phone: (808) 768-8480
Fax: (808) 768-4567

1.7 COMPLIANCE WITH STATE OF HAWAII AND CITY AND COUNTY OF HONOLULU ENVIRONMENTAL LAWS

Preparation of this document falls in accordance with the provisions of Chapter 343, HRS (2007) and Title 11, Chapter 200, Hawai'i Administrative Rules (HAR) pertaining to Environmental Impact Statements. Section 343-5, HRS established nine "triggers" that require either an EA or an Environmental Impact Statement (EIS). The use of State or County lands or funds requires the preparation of an Environmental Assessment.

1.8 IDENTIFICATION OF AGENCIES CONSULTED

Various agencies (or agency documents) were consulted in preparation of this EA. Responses to the pre-consultation are attached in Appendix A.

Federal

Army Corps of Engineers (ACOE)
United States Department of the Army, Signal Corps
United States Department of the Interior, Fish and Wildlife Service

State of Hawai'i

Office of Senator Brian Taniguchi
Office of Senator Les Ihara, Jr.
Office of Representative Scott Saiki
Office of Representative Scott Nishimoto
Department of Land and Natural Resources
Department of Land and Natural Resources, State Historic Preservation Division
Department of Health, Environmental Planning Office
Department of Business Economic Development & Tourism, Office of Planning
Office of Environmental Quality Control
Office of Hawaiian Affairs

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION

DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

City and County of Honolulu

Office of the late Councilmember Duke Bainum, Honolulu County Council

Board of Water Supply

Department of Community Services

Department of Customer Services

Department of Design and Construction

Department of Environmental Services

Department of Facility Maintenance

Department of Planning and Permitting

Department of Transportation Services

Fire Department

Police Department

Neighborhood Commission Office, Diamond Head/Kapahulu/St Louis Heights #5

Neighborhood Commission Office, McCully/Mō'ili'ili #8

Private

Hawaiian Electric Company

The Gas Company

Oceanic Cable Company

2.0 PROJECT DESCRIPTION

This section provides background information and a general description of the Mō'ili'ili-Kapahulu Sewer Rehabilitation/Reconstruction project site.

2.1 LOCATION

The proposed Mō'ili'ili and Kapahulu Sewer Rehabilitation project is located within the City and County of Honolulu's roadway right-of-way along Date Street, between Pumehana Street and Lukepane Avenue. This portion of Date Street is located in urban Honolulu on the Island of O'ahu, State of Hawai'i (Figure 2). Photographs of the site are included as Figure 3. Access to the area will be modified temporarily during construction. Long-term access will not change.

2.2 DESCRIPTION OF THE MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION

The proposed project is being designed to improve current sewage conveyance in the communities of Mō'ili'ili and Kapahulu. The project will include the reconstruction of 1.2 miles of sewage conveyance piping, rehabilitation system capacity through the installation of 0.7 miles of relief piping and the rehabilitation of sewer manholes.

Reconstruction of Existing Conveyance Lines

This portion of the project will include the reconstruction of reinforced concrete pipe and cast iron pipes of varying diameter using cured-in-place-pipe (CIPP) technology that does not require open trenching. The existing sewer pipes will be accessed through existing permanent access point (manholes), flushed and temporarily isolated from the existing conveyance system. Sewage in the main and lateral lines will be diverted via temporary bypass lines around the section of pipe being repaired and pumped to the next available downstream manhole. Lines will be reinstated to service after the CIPP curing process is complete, typically no more than 8 hours after the repair is completed. Once the pipe is cleaned and isolated, a resin-saturated tube will be inserted, expanded and cured using water or steam to create a jointless, tight-fitting pipe within the existing pipe. Ground disturbance is minimized with CIPP because most activities occur within the existing pipe. Some sewer lateral diversions may require the use of temporary diversion pipes that cannot be connected at existing manhole locations. Ground disturbance will occur when temporary diversions cannot be connected at existing manholes. Reconnection to conveyance system including laterals can occur from within the pipe. The reconstruction project will impact sewer conveyance pipes along the entire 1.2 miles of the proposed project area on Date Street between Pumehana Street and Lukepane Avenue as well as lateral connections to the Date street pipes.

Rehabilitate Conveyance System Capacity

The conveyance system, approximately 0.7 miles along Date Street between Pumehana Street and Kapi'olani Boulevard does not have adequate capacity to serve the domestic and industrial needs of the area. The construction of a relief sewer line will be installed adjacent to the existing sewer lines and will provide a mechanism to provide additional capacity as well as divert sewage from the main line during repair and emergency situations. Construction would include installation of 22 sewer manholes and 850 feet of 12-inch; 1,240 linear feet of 15-inch; 40 linear feet of 18-inch; 570 linear feet of 21-inch; and 700 linear feet of 24-inch Poly-vinyl Chloride (PVC) pipes. This relief sewer line would be installed between eight feet and eighteen feet below ground surface (bgs) roughly parallel to the existing lines. A majority of the relief line will be installed utilizing traditional open trench technology. When possible, flowable fill will be utilized during backfilling activities. This portion of the project will require the installation of relief pipe across the Ala Naio drainage canal. To provide adequate protection to the stream, open trench activities will stop approximately 10 feet from either side of the drainage canal walls. A tunneling technology called pipe jacking that simultaneously excavates and installs the sewer pipe will be used. The new relief pipe will be installed nine feet below the bottom of the canal bed so there will be no impediments to drainage in Ala Naio. The pipe jack technology incorporates a closed loop system to remove spoils a safe distance away from the channel to ensure no spoils are discharged to the area surrounding the pipe, eliminating inadvertent deposition of fill into the channel corridor.

Rehabilitate Manholes

Along Date Street, 37 manholes required some level of rehabilitation. While rehabilitation of all the manholes is not mandated at this time for either safety environmental factors, significant cost savings could be realized by combining this project with the reconstruction of the existing conveyance line. All 37 manholes will require this level of rehabilitation in the future. Construction activities for manhole rehabilitation will include cleaning manholes, repair of invert/bench and walls followed by an epoxy coating to protect against corrosion. The project will include actions up to 22 feet bgs within the existing manhole.

2.2.1 General Background

The City and County of Honolulu sewage conveyance and treatment system was originally designed and constructed in 1901. The installation of the conveyance system along Date Street began in 1935. Sewage generated in the Kapahulu and Mō'ili'ili areas is conveyed via underground pipes to the Sand Island treatment facility. The conveyance system was, originally constructed of 12-inch to 48-inch diameter reinforced concrete and cast iron pipes.

The State Clean Water Branch (CWB) and the United States Environmental Protection Agency (EPA) issued notice of violation to the City and County of Honolulu (City) for



LEGEND

 Project Site

Note:

Construction of a new pipe will occur only between Pumehana St and Kapiolani Blvd. Manhole and pipe rehabilitation will occur along the entire length of the project.

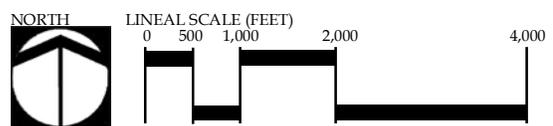
Source: U.S. Geological Survey
 Disclaimer: This graphic has been prepared for general planning purposes only.

FIGURE 2

Location Map

Moiliili-Kapahuhu Sewer Rehabilitation / Reconstruction

CLIENT ISLAND OF OAHU



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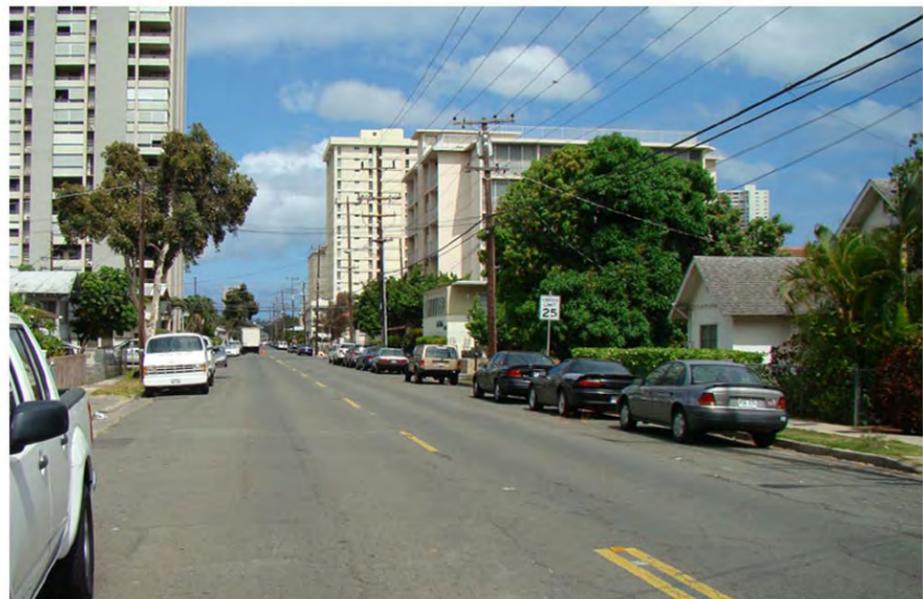
1. End of Date Street at Pumehana Street T-intersection



4. Date Street looking toward University Avenue intersection



7. Date Street looking toward Manoa-Palolo drainage canal bridge



2. Date Street looking east from McCully Street intersection



5. Date Street at Kapiolani Boulevard looking east



8. Date Street at Lukepane Avenue intersection



3. Date Street looking east toward Isenberg Street intersection



6. Date Street looking west near Kapiolani Boulevard intersection

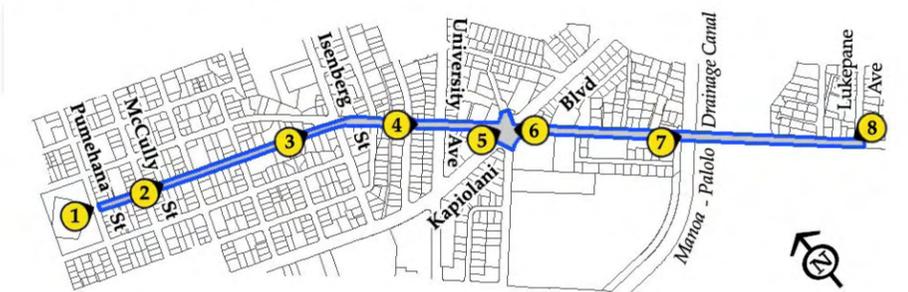


FIGURE 3
 Site Photographs
**Moiliili-Kapahuu Sewer
 Rehabilitation / Reconstruction**

CLIENT

ISLAND OF OAHU



PBR HAWAII
 & ASSOCIATES, INC.
 JUNE 2009

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MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION

DEPARTMENT OF DESIGN AND CONSTRUCTION DRAFT ENVIRONMENTAL ASSESSMENT

failing to comply with the Sand Island National Pollution Discharge Elimination System (NPDES) permit conditions for pretreatment and discharge limitations. The CWB and EPA filed a formal complaint alleging violation of the Clean Water Act (33 U.S.C section 1251) and the Hawai'i Revised Statutes (Chapter 342D). The CWB, EPA and the City entered into a Consent Decree whereby the City agreed to the following:

- (A) come into and maintain compliance with the sections, 301 and 307 of the Clean Water Act,
- (B) revise and implement pretreatment program,
- (C) develop a system rehabilitation/reconstruction schedule to prevent and or reduce spills, and
- (D) further the goals of objectives of the Clean Water Act.

In 1999, Fukunaga & Associates, Inc., on behalf of the City, conducted a *Sewer Rehabilitation and Infiltration & Inflow Minimization Study*. The study made recommendations to reduce and prevent sanitary sewer overflows from both the wastewater collection and treatment systems. Pipe and manhole rehabilitation was recommended for the existing sewer conveyance system in the Mō'ili'ili-Kapahulu area based on severe corrosion in 11 of the 41 pipes inspected. The infiltration and inflow study also assessed the system to determine if capacity was adequate for current and future flows. The Date Street sewer conveyance system was determined to be of adequate capacity between Kapi'olani Boulevard and Lukepane Avenue. However, between Pumehana Street and Kapi'olani Boulevard was determined to be inadequate to meet 1995 peak wet weather conditions.

In March 2006, a sewer conveyance force main failure resulted in the release of approximately 50 million gallons of untreated sewage into the Ala Wai Canal. The ruptured main was part of the aging conveyance system scheduled for rehabilitation as part of the 1995 consent decree. The rupture did not occur along Date Street, but emphasized the need to rehabilitate the system.

This project has been developed to address A, C and D of the objectives of the 1995 Consent Decree Agreement as they affect the Date Street sewage conveyance system taking into account the recommendations made in the 1999 Fukunaga Study. Approximately 1.2 miles of sewer pipes along Date Street between Pumehana Street and Lukepane Avenue were assessed utilizing CCTV and visual inspections. This segment of the conveyance system was determined to be inadequate in its current state. Based on the assessment, the City has proposed to rehabilitate the entire length of pipe and associated manholes; and construct a relief pipe adjacent to the existing pipe along Date Street from Pumehana Street to Kapi'olani Boulevard.

2.2.2 Environmental Sustainability

The City's Department of Environmental Services, Treatment and Disposal Division is committed to excellence with the vision, "Be internationally recognized as a leader in wastewater pumping and treatment. Be known for innovative and efficient approaches to

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

the pumping and treatment of wastewater and for absolute dedication to protection of the environment and public health.” This project was designed with the goal of providing environmental protection. Old sewer pipes are not as efficient at conveying sewer from domestic and industrial sources to waste water treatment facility for processing. Materials are deposited onto the interior walls of the pipe impeding flow and sometimes causing complete blockage. The pipes also begin to leak (especially at the seams between pipe sections). These leaks can both allow sewage to be released to the environment, and allow water to infiltrate into the pipes during heavy rains potentially causing sewage overflow. By rehabilitating the existing sewer lines along Date Street, the proposed project will reduce the environmental impact of the existing sewer system by reducing leaks and improving flow. The installation of a relief line between Pumehana Street and Kapi'olani Boulevard will improve capacity to meet the current needs of the area and allowing the City to respond to upset conditions in the Mō'ili'ili, McCully areas by transferring the sewage load between the relief and main lines to allow for repairs. Quick response to upset conditions will reduce the risk of accidental release or backflow of untreated sewage from this segment of the system.

The methodology chosen to reconstruct the existing conveyance lines also shows City's commitment to sustainability. The traditional pipe rehabilitation method involves the utilization of an open trench and the replacement of the existing conveyance system with new piping. However, guided by the vision of “dedication to the protection of the environment”, the project will utilize an in situ technology, cured in place pipe (CIPP) that minimizes environmental impact by strengthening and repairing the existing pipe from the inside. Use of this technology has a number of sustainability benefits by reducing:

1. the amount of raw materials utilized in the creation of new pipe,
2. the potential for non-point pollution generation from the construction site by limiting open trench activities,
3. traffic impact during construction by primarily utilizing existing man-holes rather than open trenches, and
4. leaks at pipe seams using seamless CIPP technology.

The rehabilitation of existing sewer manholes also is a commitment to sustainable development practice. Upon inspection of the manholes it was determined that while rehabilitation was necessary, it could be postponed for a few years. By conducting rehabilitation activities in conjunction with the pipe rehabilitation project, the overall impact of the manhole project was minimized. All activities associated with the both projects could be done at one time, reducing cost duplication incurred for safety, traffic diversion and pre-construction engineering and environmental evaluations. Inconvenience to the local community would be minimized by combining two construction projects into one event.

2.2.3 Project Implementation

Project construction is expected to occur in two phases. The installation of the relief pipe will occur in phase 1. It is expected that this phase of activities will occur in the summer

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION

DEPARTMENT OF DESIGN AND CONSTRUCTION DRAFT ENVIRONMENTAL ASSESSMENT

of 2011. The rehabilitation of the existing pipe and manholes will occur upon completion of phase I. The project as proposed is expected to cost approximately \$12,200,000 dollars.

Table 2-1 Estimated Construction Cost

Activity	Technology proposed for implementation	Cost
Reconstruction of Existing Conveyance Lines	CIPP	\$4,196,300
Rehabilitate Conveyance System Capacity	Open trench & Pipe Jack	\$7,264,950
Rehabilitate Manholes	100% solids Epoxy Coating	\$738,400
TOTAL COST		\$12,199,650

MŌ'ILI'ILI-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

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3.0 DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

This section describes the existing conditions of the physical or natural environment, potential impacts of the Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction to the environment, and mitigation measures to minimize impacts.

3.1 CLIMATE

O'ahu's geological features heavily influence its climate. The Ko'olau Mountain Range dominates ground-based atmospheric influences within Mānoa Valley. However, in the project area, at the mouth of the valley, temperatures are mild and uniform. The average daily temperature ranges from 72 to 87 degrees Fahrenheit. Trade winds are typical of the Hawaiian Islands, blowing predominantly from a northeast direction, and averaging approximately seven (7) miles per hour (mph) (NOAA). These trade winds typically bunch moisture collected over the ocean along the mountain range creating optimal conditions for precipitation. National Weather Service rain gauges sited at Lyon Arboretum in the back of the valley have recorded an average annual rainfall of approximately 160 inches per year. Gauges at the Kapi'olani Community College (KCC) record rainfall of approximately 25 inches per year (NWS Website). Rainfall along the project site is likely very similar to rainfall at KCC.

Potential Impacts and Mitigation Measures

The project as proposed is not anticipated to have any impact on climatic conditions and no mitigation measures are planned.

3.2 GEOLOGY AND TOPOGRAPHY

Geology

Between 10,000 and 20,000 years ago, the Sugarloaf volcanic vent (above Roundtop) sent a cascading lava flow down the western wall of Mānoa Valley. The lava flow spread out on the lower valley floor to form the broad, nearly level surface. The general terminus of the flow extends in a narrow tongue south of the Lunalilo Freeway into Mō'ili'ili. The proposed project is located on the Honolulu plain. The Honolulu plain is underlain by a broad elevated coral reef partially covered by alluvium (Figure 4), evidence of higher sea level (approximately 7.5 meters) during an earlier interglacial stage.

A karstic conduit system is located less than a quarter mile from the proposed project. The Mō'ili'ili Karst is an underground system of drainage caves that in 1934 caused numerous sinkholes due to catastrophic dewatering (Halliday, 2001).

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Many areas in Mō'ili'ili and Kapahulu were not formed geologically, but created by fill (Figure 4). Fill was used extensively along Date Street in the vicinity of the sewer rehabilitation/reconstruction project and is the primary soil type in the region.

Topography

A topographic survey was conducted by Ace Land Surveying, LLC in May 2007. The proposed project area is relatively level with very gentle slopes at less than two (2) degrees. The Mō'ili'ili, Kaimukī, and Kapahulu areas have been extensively developed for over 50 years. Date Street has experienced profuse grading and fill activities, as evidenced by the relatively level nature of the project site (Figure 5).

Potential Impacts and Mitigation Measures

Due to the level conditions of the property, and proposed construction activities, limited grading is anticipated to occur. Grading will be conducted to restore the project site to pre-condition state and will not change the topographic nature of the area relative to the surrounding lands.

The stability of the underlying strata, particularly fill can impact the integrity of the roadways and the rehabilitation and reconstruction of the sewer conveyance system in Mō'ili'ili and Kapahulu. Fill is prone to liquefaction during earthquakes. Engineers at Akinaka & Associates, Ltd. have been involved in design to ensure necessary safety factors have been built into the project to limit the impact of liquefaction or other earth movement.

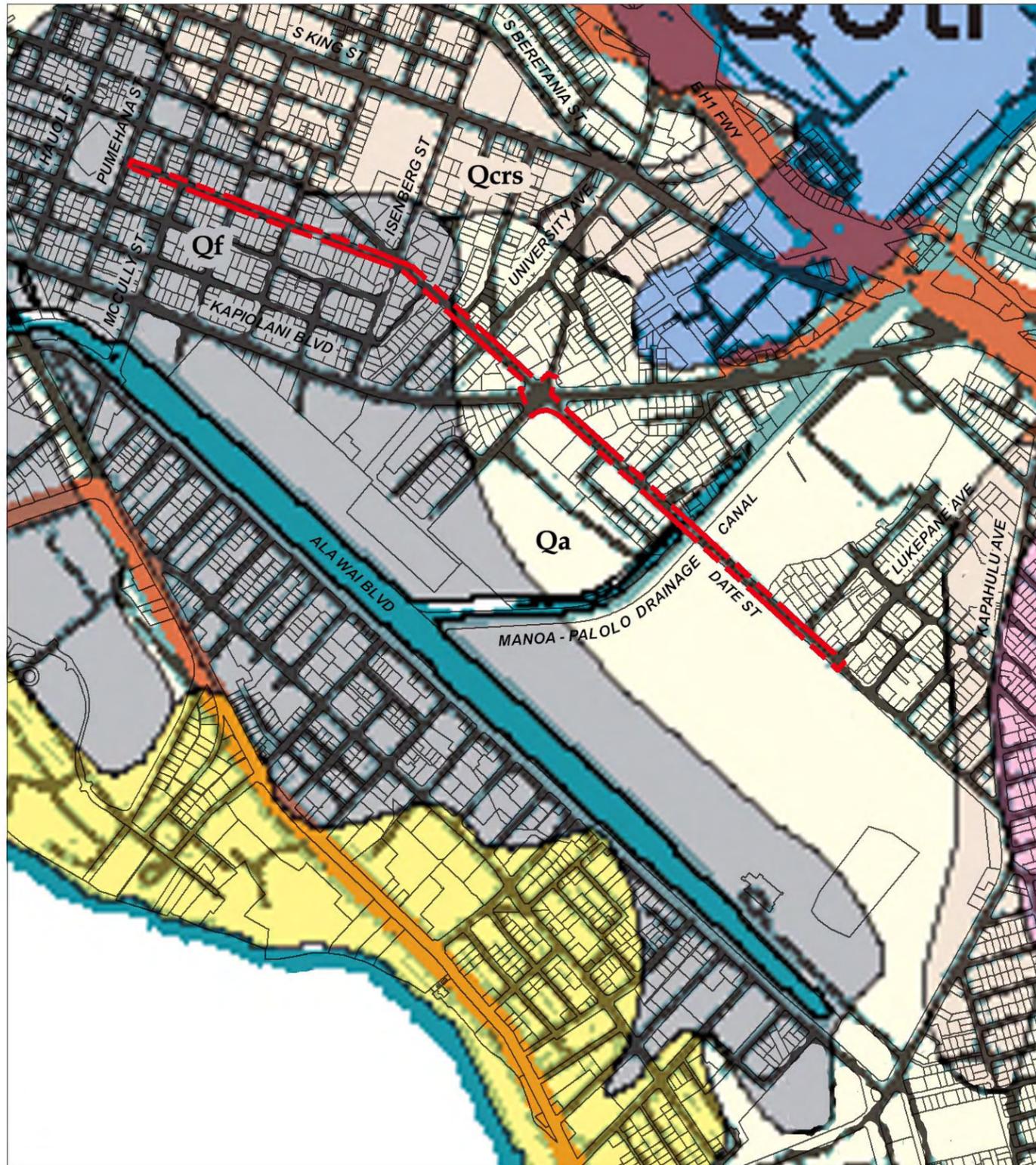
3.3 SOILS

Three soil suitability studies prepared for lands in Hawai'i principally focus on the relative agricultural productivity of different land types. These studies are: 1) the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) Soil Survey; 2) the University of Hawai'i Land Study Bureau Detailed Land Classification; and 3) the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawai'i (ALISH).

3.3.1 Natural Resources Conservation Service (NRCS)

The ***Natural Resource Conservation Service, Soil Survey for the Island of O'ahu***, classifies the soil within the proposed project area as Kawaihapai Clay loam, 0-2% slopes (KIA), and Fill Land, mixed (Figure 6). These soil types are described below.

Kawaihapai clay loam, 0 to 2 percent slopes (KIA) - This soil occupies smooth slopes. Included in mapping were small areas where the slope is 3 to 7 percent and the texture is silty clay. Also included were small areas of poorly drained soils and small areas of Jaucas soils.



LEGEND
 Project Site

Note:
 Construction of a new pipe will occur only between Pumehana St and Kapiolani Blvd. Manhole and pipe rehabilitation will occur along the entire length of the project.

Source: Geologic Map of the State of Hawai'i, Sheet 3 - Island of O'ahu
 Disclaimer: This graphic has been prepared for general planning purposes only.

SURFICIAL DEPOSITS COMMON TO SEVERAL OF THE ISLANDS

- Qf **Fill (Holocene)**
- Qa **Alluvium (Holocene)**
- Qbd **Beach deposits (Holocene)**
- Qdy **Younger dune deposits (Holocene)**
- Qdo **Older dune deposits (Holocene and Pleistocene)**
- Qcrs **Calcareous reef rock and marine sediment (Pleistocene)**
- QTao **Older alluvium (Pleistocene and Pliocene)**

Conformable and interbedded to disconformable

VOLCANIC AND INTRUSIVE ROCKS ON THE ISLAND OF O'AHU

Honolulu Volcanics (Pleistocene)—Divided into:

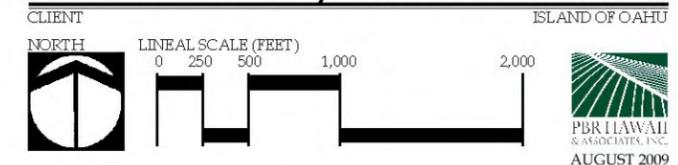
Deposits from Koko fissure system—Consists of:

- Qokl **Lava flows**
- Qokt **Tuff**
- Qoks **Spatter**

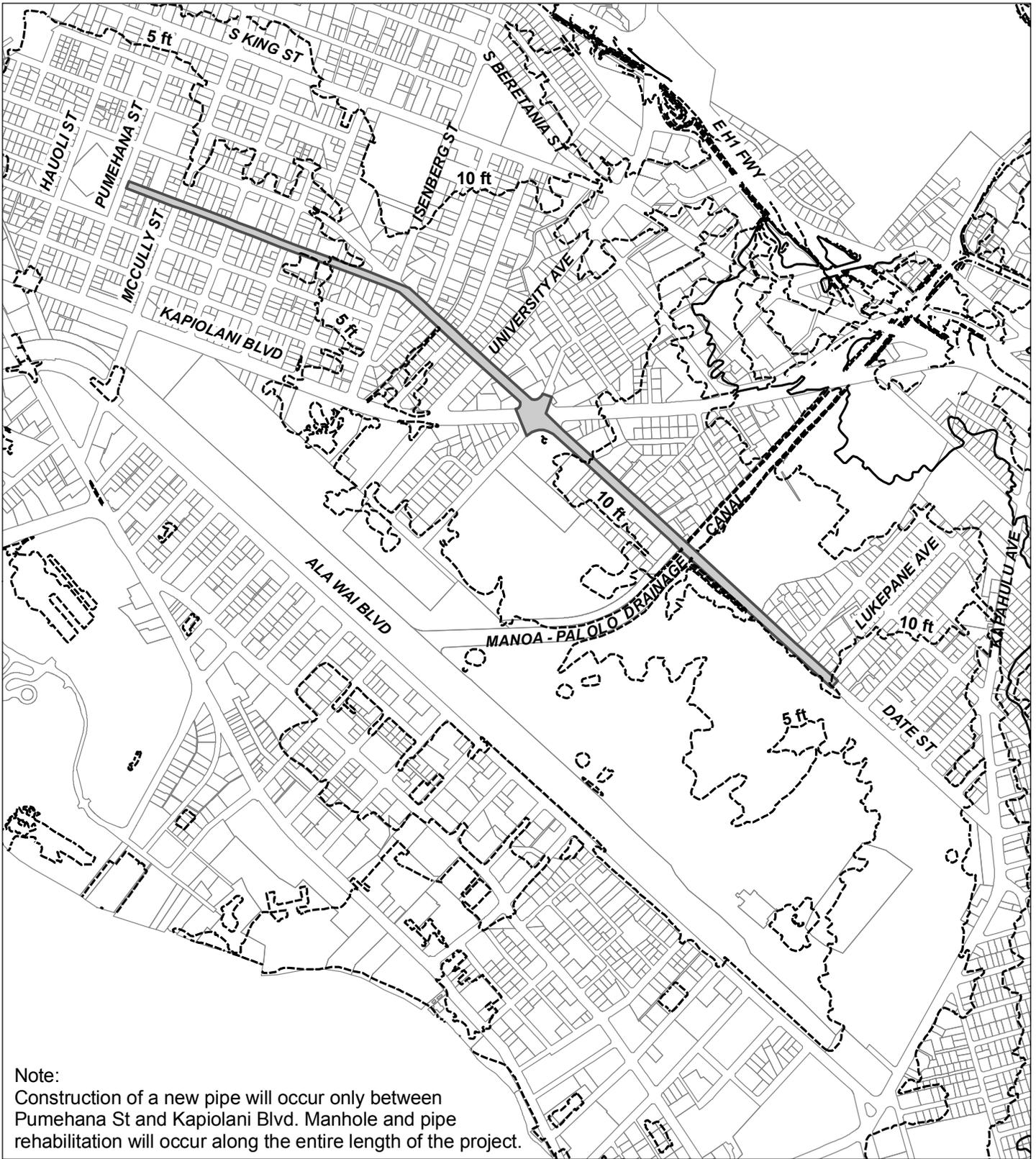
Deposits from Tantalus Peak and Sugar Loaf vents—Consists of:

- Qotl **Lava Flows**
- Qott **Tuff**
- Qol **Lava flows**
- Qov **Cinder vent deposits**
- Qobr **Breccia**
- Qot **Tuff cone deposits**

FIGURE 4
Geologic Map
Moiliili-Kapahulu Sewer
Rehabilitation / Reconstruction



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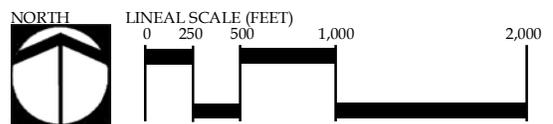


LEGEND

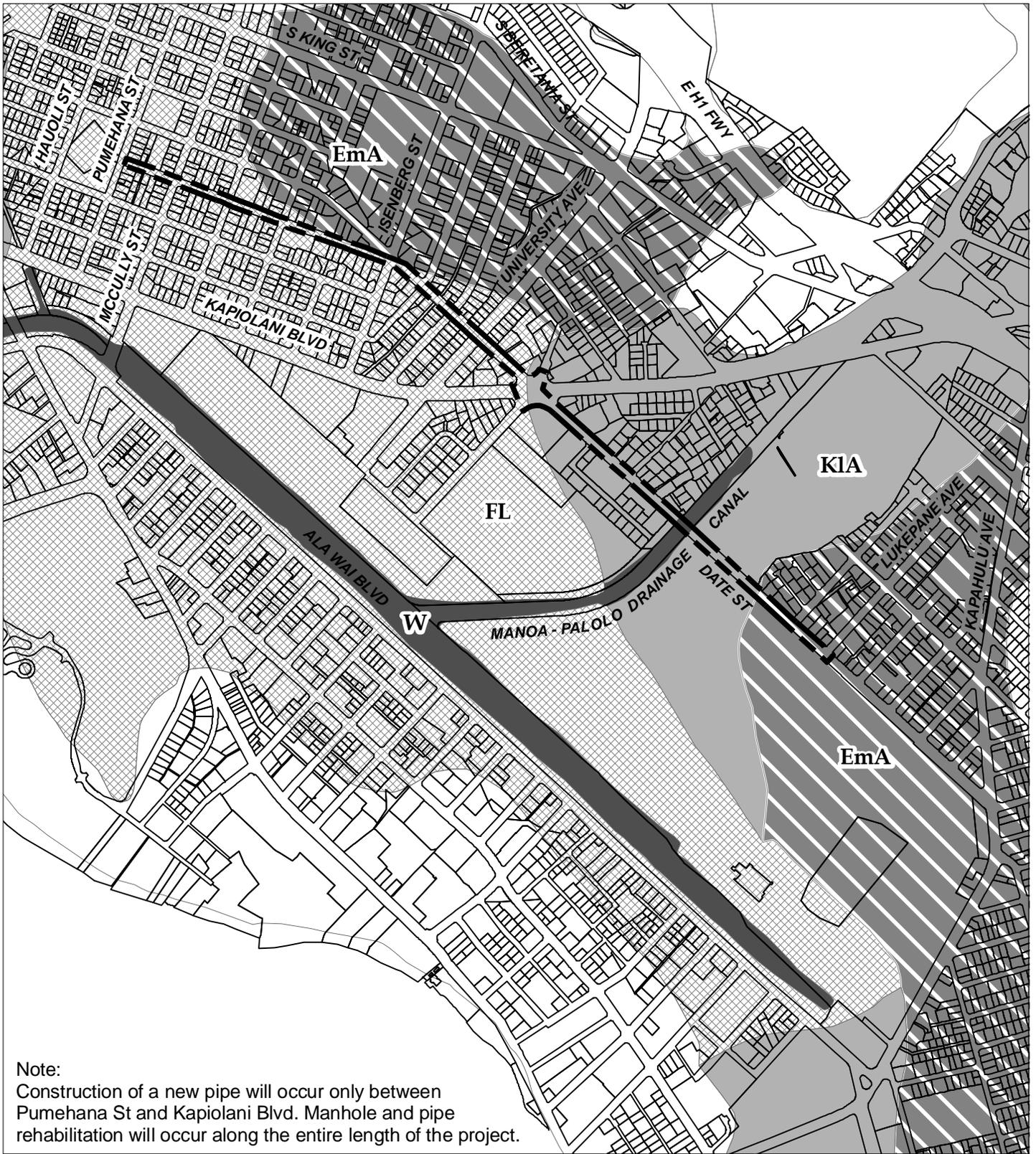
 Project Site

FIGURE 5
Topography
Moiliili-Kapahuhu Sewer Rehabilitation/ Reconstruction

CLIENT ISLAND OF OAHU



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Note:
 Construction of a new pipe will occur only between Pumehana St and Kapiolani Blvd. Manhole and pipe rehabilitation will occur along the entire length of the project.

LEGEND

- EmA: Ewa Silty Clay Loam, Moderately Shallow, 0-2% Slopes
- FL: Fill Land, Mixed
- KIA: Kawaihapai Clay Loam, 0-2% Slopes
- W: Water
- Other Classifications
- Project Site

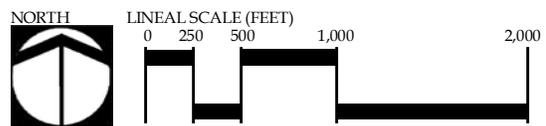
Source: USDA Natural Resources Conservation Service
 Disclaimer: This graphic has been prepared for general planning purposes only.

FIGURE 6

Soil Classification

Moiliili-Kapahuhu Sewer Rehabilitation / Reconstruction

CLIENT ISLAND OF OAHU



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MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

In a representative profile, the surface layer is dark brown clay loam about 22 inches thick. The next layer is dark brown stratified sandy loam 32 inches thick. The substratum is stony and gravelly. The soil is neutral in reaction throughout the profile.

Permeability is moderate. Runoff is slow, and the erosion hazard is no more than slight. The available water capacity is about 1.8 inches per foot in the surface layer and about 1.6 inches per foot in the subsoil. In places roots penetrate to a depth of 5 feet or more. In some places this soil is subject to flooding.

Fill land, mixed (FL) - This land type consists of areas filled with material dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources. This land type is used for urban development including airports, housing areas, and industrial facilities.

'Ewa Silty Clay Loam, Moderately Shallow, 0-2% slope (EmA) - This series consists of well-drained soils in basins and on alluvial fans. These soils developed in alluvium derived from basic igneous rock. They are nearly level to moderately sloping. In a representative profile, the surface layer is dark reddish-brown silty clay loam about 18 inches thick. The subsoil, about 42 inches thick, is dark reddish-brown and dark-red silty clay loam that has subangular blocky structure. The depth of substratum, coral limestone, sand, or gravelly alluvium is 20 to 50 inches. The soil is neutral in the surface layer and subsoil. Runoff is very slow, and the erosion hazard is no more than slight. Included in mapping were a few small areas less than 20 inches deep. This soil is used for sugarcane, truck crops, and pasture.

3.3.2 Land Study Bureau Detailed Land Classification

The University of Hawai'i Land Study Bureau document, ***Detailed Land Classification, Island of O'ahu***, classifies soils based on a productivity rating. Letters indicate class of productivity with A representing the highest class and E the lowest. The soils within the project site are listed as Unclassified.

3.3.3 Agricultural Lands of Importance to the State of Hawai'i (ALISH)

The Agricultural Lands of Importance to the State of Hawai'i (ALISH) system classify important agricultural lands as Prime, Unique, or Other Agricultural Land. Lands along Date Street between Pumehana Street and Lukepane Avenue are unclassified (Figure 7) and are located within the current urban development boundary.

Potential Impacts and Mitigation Measures

As proposed, the sewer rehabilitation and reconstruction will not have a deleterious effect on the soil in the project site. The site is currently located within an existing road right-of-way and unavailable for agriculture. Therefore, due to the site's

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

development history, the proposed development should not impact the availability of agricultural land for cultivation.

3.4 FLORA AND FAUNA

Date Street has been subject to intense human utilization over the past century. The proposed project will occur entirely within existing road right-of-ways along Date Street. This is an undivided four lane-lane road between Pumehana Street and Lukepane Avenue. Small grass borders are located along the pedestrian pathways on both sides of the street. Mammals presumed to be found in the area include domesticated cats and dogs. Mice and rats are also likely to be found in this type of urban habitat, which is unfavorable to native wildlife. Birds typically found in urbanized areas such as pigeons and doves are likely to inhabit the area.

The project will cross over two canals, Ala Naio and Mānoa-Pālolo. Both of the canals are man-made channels developed as part of the Ala Wai Drainage system of the estuary-wetlands of Waikīkī. While these are hardened channels, both have the potential to provide habitat for wetland and riparian species within the channel and along the banks (Figure 8).

Within the immediate proximity of the project site, Date Street between Pumehana Street and Lukepane Avenue, there are no known habitats for rare, threatened, or endangered flora or faunal species (Figure 9).

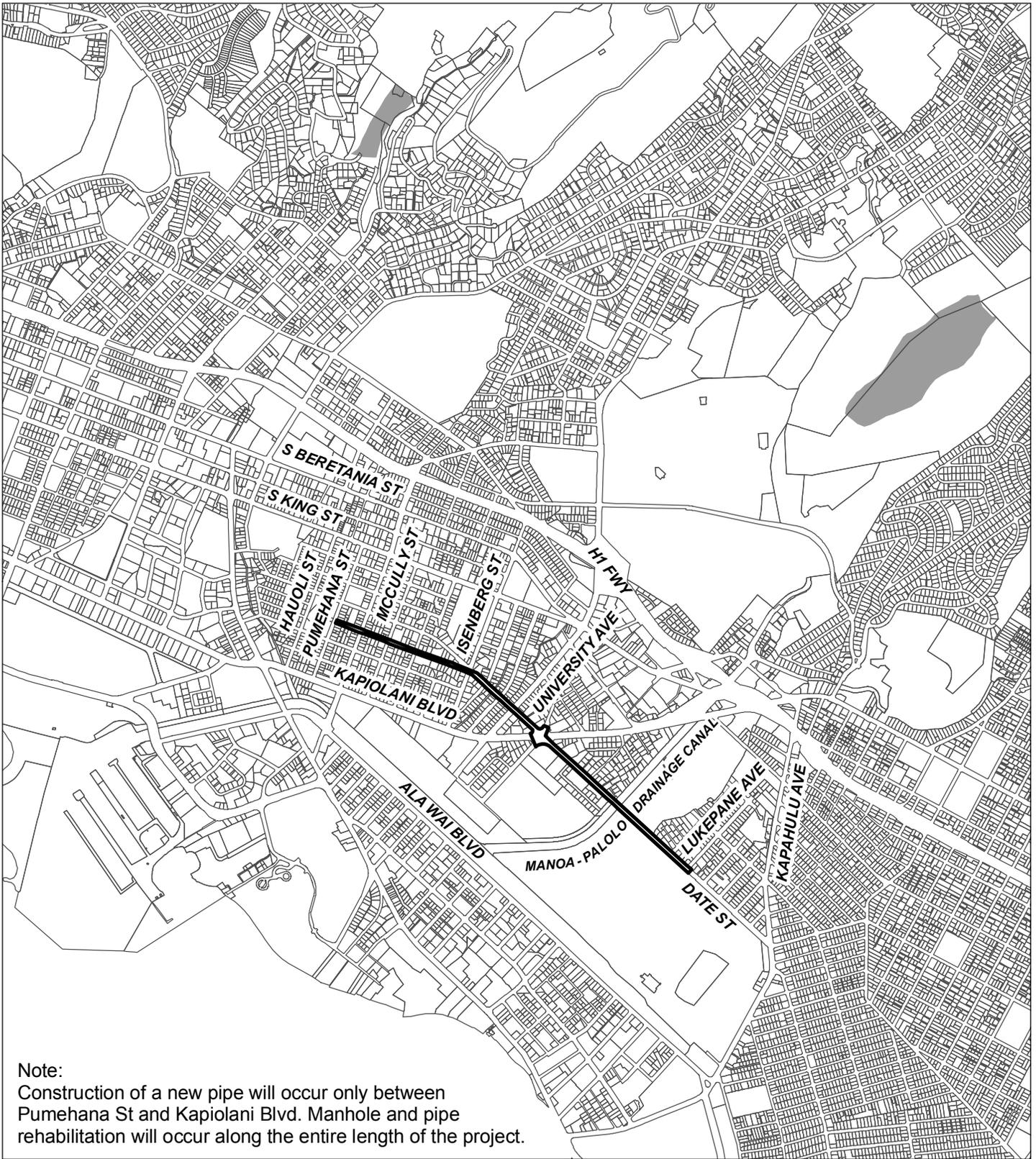
Potential Impacts and Mitigation Measures

Due to the location within an existing right-of-way in an urbanized area, there are no critical habitats, or endangered species within the areas. With the exception of turf grass along the borders of Date Street, the area is devoid of any landscaping. As proposed, the project is not anticipated to have any significant impact on endangered flora or faunal species.

The City's consultant requested an evaluation of the listed threatened or endangered species and designated critical habitats occurring near the project site in a letter to the U.S. Fish and Wildlife Service (FWS) dated June 29, 2009.

In a response email dated August 20, 2009, FWS indicated that they cross referenced the site information with data compiled by the Hawaii Biodiversity and Mapping Program and the Hawaii GAP. The information indicated,

Land cover information indicates that the proposed project locations are classified as high to low intensity development. No impacts to federally listed species or designated critical habitat are anticipated because the work will be conducted on existing infrastructure at previously disturbed sites.



Note:
 Construction of a new pipe will occur only between
 Pumehana St and Kapiolani Blvd. Manhole and pipe
 rehabilitation will occur along the entire length of the project.

LEGEND

-  Prime ALISH
-  Unique ALISH
-  Other ALISH
-  Unclassified
-  Project Site

FIGURE 7

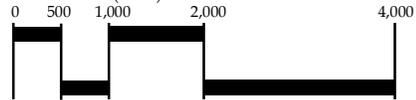
Agricultural Lands of Importance to the State of Hawaii
**Moiliili-Kapahuhu Sewer
 Rehabilitation/ Reconstruction**

CLIENT

ISLAND OF OAHU

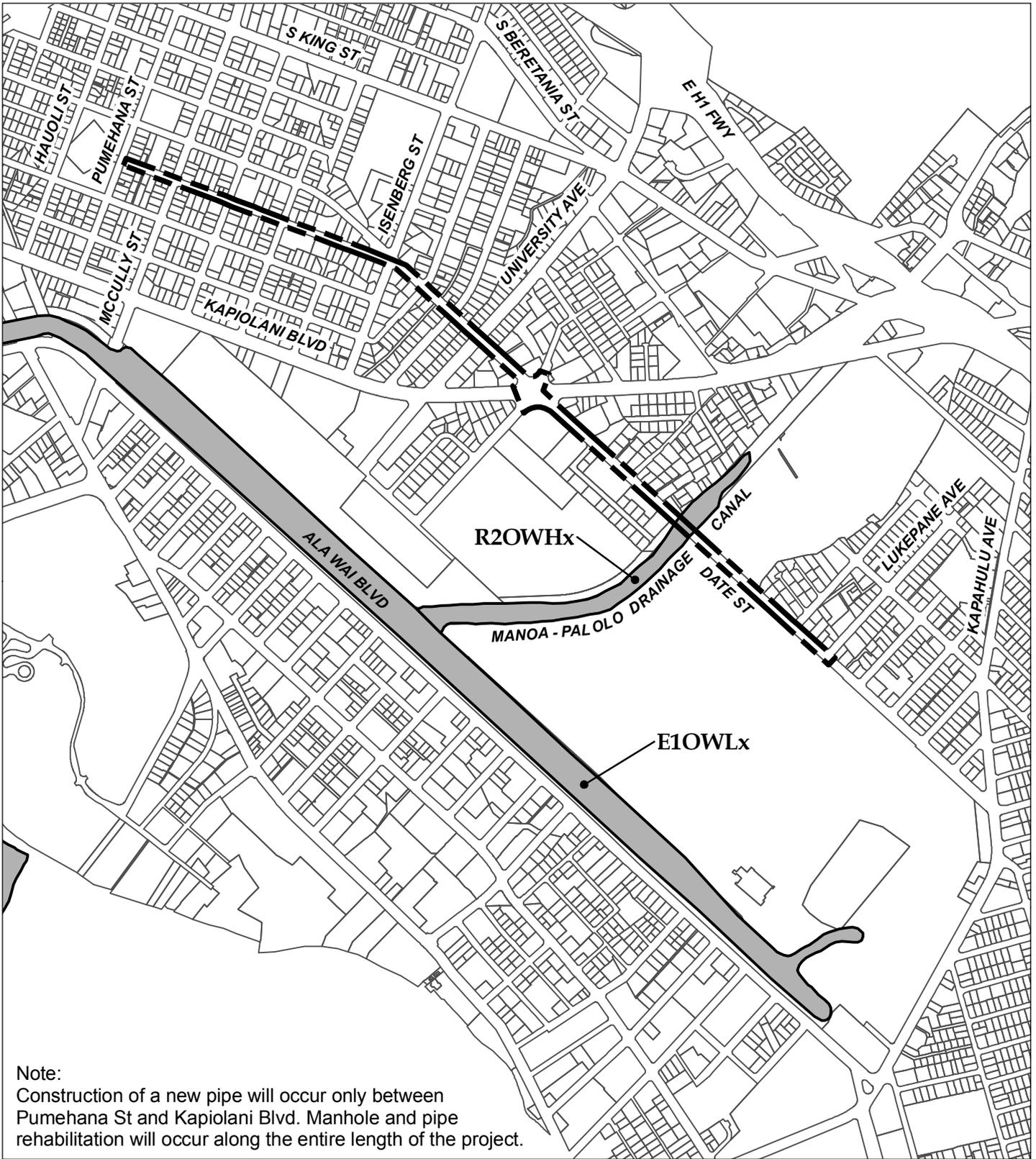


LINEAL SCALE (FEET)



Source: State Department of Agriculture (1977)
 Disclaimer: This graphic has been prepared for general planning purposes only.

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Note:
 Construction of a new pipe will occur only between
 Pumehana St and Kapiolani Blvd. Manhole and pipe
 rehabilitation will occur along the entire length of the project.

LEGEND

-  Wetland with Codes
-  Project Site

FIGURE 8

Wetlands

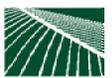
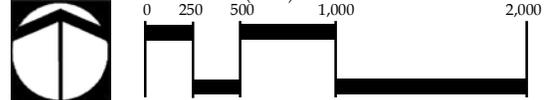
**Moiliili-Kapahuhu Sewer
 Rehabilitation / Reconstruction**

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ISLAND OF OAHU

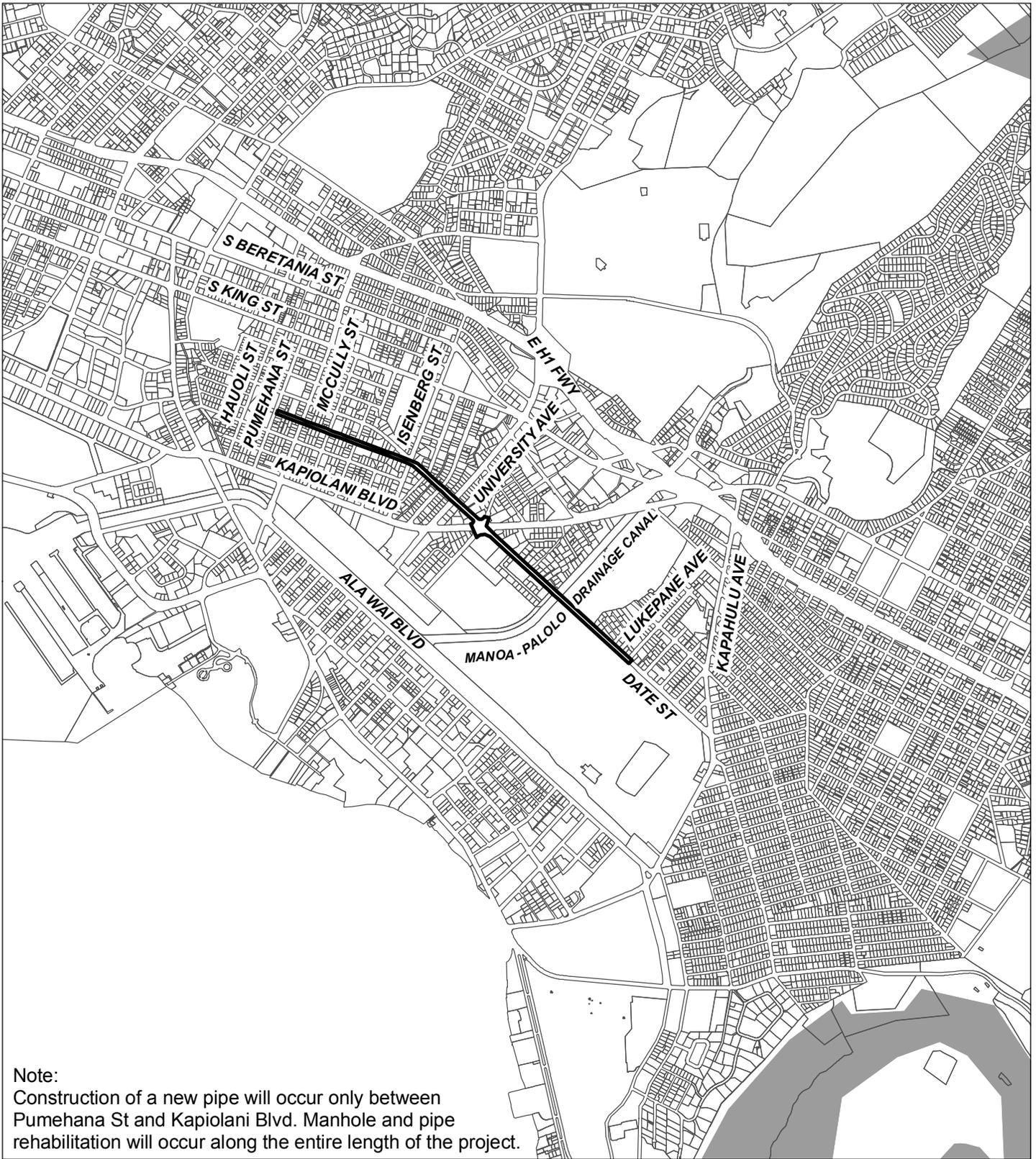
NORTH

LINEAL SCALE (FEET)



PBR HAWAII
 & ASSOCIATES, INC.
 AUGUST 2009

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Note:
 Construction of a new pipe will occur only between
 Pumehana St and Kapiolani Blvd. Manhole and pipe
 rehabilitation will occur along the entire length of the project.

LEGEND

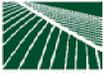
-  Critical Habitat for Plants
-  Project Site

FIGURE 9
 US Fish & Wildlife Service Critical Habitat
**Moiliili-Kapahuhu Sewer
 Rehabilitation/ Reconstruction**

CLIENT ISLAND OF OAHU

NORTH LINEAL SCALE (FEET)

 0 500 1,000 2,000 4,000


 PRR HAWAII
 & ASSOCIATES, INC.
 AUGUST 2009

Source: US Fish and Wildlife Service, Pacific Islands Office (2004)
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MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

To ensure adequate protection of the limited riparian community within the Ala Naio and Mānoa-Pālolo Drainage Canals, the project has been designed to limit soil erosion and waterway sedimentation.

Mitigation along Ala Naio Drainage Canal- The reconstruction of the two existing wastewater sewer lines that cross underneath the drainage channel will be repaired in situ utilizing “cured-in-place-pipe” (CIPP) technology. The technology eliminates the need for open trench activities along most of the sewer line, reducing the potential for deposition of soil into the channel. The Ala Naio channel corridor will also include the construction of a relief sewer line. A tunneling technology called pipe jacking that simultaneously excavates and installs the sewer pipe will be used. The new relief pipe will be installed under the bottom of the canal bed so there will be no impediments to drainage in Ala Naio. The pipe jack technology incorporates a closed loop system to remove spoils a safe distance away from the channel to ensure no spoils are discharged to the area surrounding the pipe, eliminating inadvertent deposition of fill into the channel corridor.

Mitigation along the Mānoa-Pālolo Drainage Canal- The reconstruction of the existing wastewater sewer line crossing underneath the drainage channel will also be repaired in situ utilizing “cured-in-place-pipe” (CIPP) technology.

3.5 NATURAL HAZARDS

Natural hazards like flooding, tsunami inundation, hurricanes, earthquakes, and volcanic eruptions have historically impacted the State of Hawai'i.

Flooding

According to the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program, Date Street between Pumehana and Isenberg; and Lā'au Street and Lukepane Avenue are within the 100-year floodplain. Additionally, the area between the Mānoa-Pālolo Canal and Olokele Street has been designated as Zone AE and is within the floodway (Figure 10). The base flood elevation in this area is between 10 and 13 feet. The project is located within three City, Flood Hazard Districts, (1) Floodway District, (2) Flood Fringe District, and (4) General floodplain District (Figure 10).

The proposed project falls within the Ala Wai watershed that includes the sub-watersheds of Makiki, Mānoa, Pālolo and Waikīkī.

Historically, a wetland delta dominated the project area until the Ala Wai drainage canal was built in the 1920's. According to the United States Army Corps of Engineers, the Ala Wai has flooded four times, in 1965, 1967, 1992, and 2004.

Tsunami

Since the early 1800s, approximately 50 tsunamis have inundated the State of Hawai'i's shores. Seven historical events have caused major damage. Two tsunamis were

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

generated in the State on the Big Island of Hawai'i. The proposed project is located outside the defined tsunami inundation area.

Hurricanes

Since 1980, two hurricanes have had a devastating effect on O'ahu, Hurricane 'Iwa in 1982 and Hurricane 'Iniki in 1992. Long-term prediction of future hurricanes is virtually impossible. However, one should reasonably anticipate the prospect of another hurricane affecting the islands.

Earthquake & Volcanic Hazards

In Hawai'i, volcanic activity produces most earthquakes in contrast to other areas sitting on tectonic plate margins. Thousands of earthquakes occur in Hawai'i each year. However, the vast majority of them are undetectable through normal human senses. A few historical earthquakes have reached moderate and even disastrous magnitudes.

The last earthquakes felt statewide were magnitudes of 6.7 and 6.0. These earthquakes occurred at Kīholo Bay along Hawai'i Island's Kona Coast on October 15, 2006. These earthquakes resulted in more than \$100 million in damages to the northwest area of Hawai'i Island and minimal damage on O'ahu. From that same event, O'ahu was also subject to an earthquake induced electrical blackout that paralyzed the City of Honolulu and shut down the Honolulu International Airport for nearly a day.

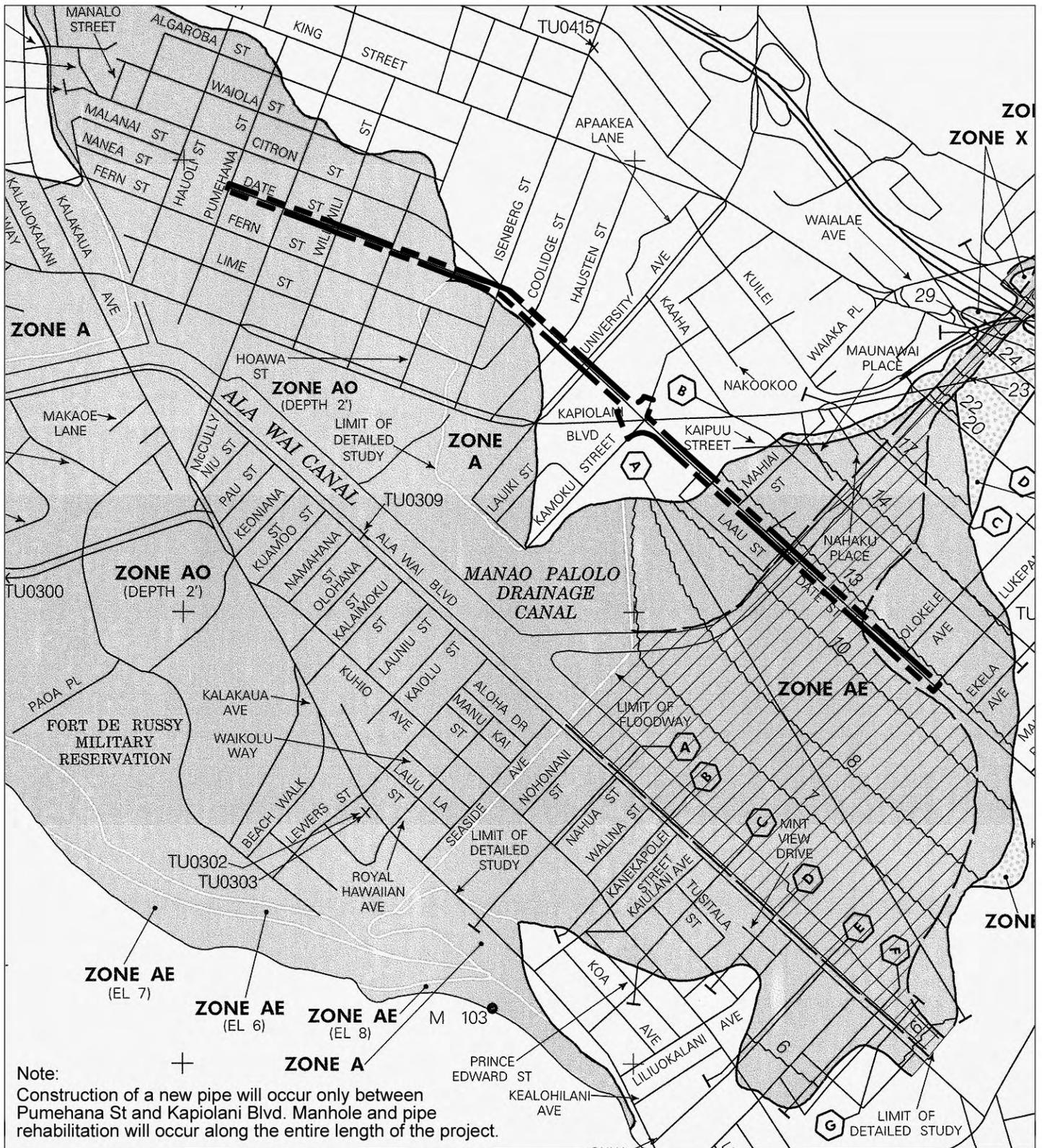
Potential Impacts and Mitigation Measures

In 2006, untreated sewage was release into the Ala Wai Canal. The release was a result of heavy rainwater inflow and infiltration into the sewer conveyance system on Kai'olu Street in Waikīkī. While this catastrophic failure did not occur within the project area, the conveyance system on Kai'olu Street was scheduled for upgrade as part of the 1995 Consent Decree. The catastrophic failure of the Kai'olu Street system illustrates the need to upgrade conveyance pipes system-wide to mitigate impact heavy rains have on the sewer system capacity. The Mō'ili'ili Kapahulu Sewer Rehabilitation/Reconstruction project was designed based on flow projections for peak wet weather conditions along Date Street, reducing potential for catastrophic failure caused by rainwater inflow and infiltration.

The project will occur within the Flood Hazard District of the City and County of Honolulu. The area is regulated under by Chapter 21, Article 9 Special District Regulation of the Revised Ordinance of Honolulu.

The project will comply with development standards as described in section 21-9.10-4, particularly:

(C)(8) *For new or replacement sanitary sewer system and waste disposal system, be designed, located and constructed so as to minimize impairment to them or contamination from them during and subsequent to flooding by regulatory flood.*



LEGEND

- 100-year General Floodplain District (Zone A)
- Flood Fringe Districts (Zones AE, AO, and AH)
- Coastal High Hazard District (Zone VE)
- Floodway in Zone AE
- 500-year Floodplain District (Zone X hatched)
- Outside Floodplain (Zone X blank)
- Project Site

Source: Federal Emergency Management Agency Flood Insurance Rate Map
 Map Number 15003C0370F (Sept. 2004)
 Disclaimer: This graphic has been prepared for general planning purposes only.

FIGURE 10

Flood Insurance Rate Map

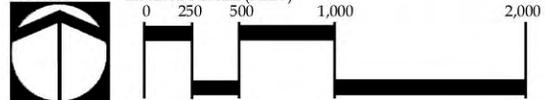
Moiliili-Kapahuhu Sewer Rehabilitation / Reconstruction

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ISLAND OF OAHU

NORTH

LINEAL SCALE (FEET)



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MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

The Floodway District has been identified as an area of extreme hazard, limiting uses within the district to those that will not obstruct floodway or affect capacity and will not increase flood elevations. The only actions that will occur within the floodway district are associated with pipe and manhole rehabilitation. These projects will rehabilitate the existing structures internally. No changes will occur to the exterior of the existing wastewater conveyance system within the floodway district. Due to the subterranean nature of the existing pipes, within the existing roadway, the proposed uses meet the requirements of Section 21-9.10-5 for Floodway Districts. The improvements, structures and utilities will comply with the provisions of Sections 21-9.10 through 21-9.10-14. When required, hydrologic and hydraulic analyses will be performed and a licensed engineer will certify that the proposed encroachment will not cause any increase in regulatory flood elevations during the occurrence of a regulatory flood.

The Flood Fringe District has been identified as a lower risk area than the floodway district allowing the uses allowed in the underlying zoning districts provided such uses, improvements, structures and utilities complies with the provisions of Sections 21-9.10 through 21-9.10-14. To provide flood protection, the project will also comply with Section 21-9.10-6, particularly:

(b)(4) All construction, improvements, portions of structures and foundations below the regulatory flood elevation shall be designed to be floodproof, anchored to resist movement and flotation and be able to resist the impact and calculated forces of the regulatory flood.

General Floodplain District projects require the review and approval of Director of the Department of Planning and Permitting. The project proponent will comply with the recommendations made by the director.

MŌ'ILI'ILI-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

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4.0 DESCRIPTION OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

This section describes the existing conditions of the human environment, potential impacts of the Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction, and mitigation measures to minimize any impacts.

4.1 HISTORIC, ARCHAEOLOGICAL AND CULTURAL RESOURCES

4.1.1 Historic and Archaeological Resources

Existing Conditions

The proposed project, located within the existing Date Street right-of-way, will include the rehabilitation of sanitary sewer conveyance lines. These lines were installed during several phases starting in 1935. Construction was typical for the time utilizing either reinforced concrete pipe or cast iron pipe.

Potential Impacts and Mitigation Measures

The City does not anticipate any adverse impact to archeological resources as a result of construction. Based on the nature of the site soils which are primarily fill, extensive grading activities, and the lack of any archaeological evidence in the vicinity, it is unlikely that the proposed project will have an adverse impact on any significant archaeological features.

SHPD was consulted as part of the Draft Environmental Assessment development to assess the effect on historic sites. In a letter dated August 26, 2009, SHPD stated,

"We determine that there will be no historic properties affected by this project because: Residential development/urbanization has altered the land, and Previous grubbing/grading has altered the land" (See Appendix A).

At SHPDs request, an archaeological monitor will be present during all subsurface soil disturbance activities. Should the inadvertent discovery of significant cultural materials and/or burials occur during construction, all work in the immediate area of the find will cease and the State Historic Preservation Division (SHPD) will be notified.

4.1.2 Cultural Resources

Mō'ili'ili was originally called Kamō'ili'ili, or place of the pebble lizard (Pukui, Elbert, and Mo'okini, 1974). According to legend, Hi'iaka, the sister of the volcano goddess, Pele, was attempting to lure a man back to the Big Island when she was attacked by an evil

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

mo'ō, or lizard. Hi'iaka managed to destroy the mo'ō by turning it into pebbles under a tree, which still grows on the grounds of Kūhiō School. Another version of the legend contends that the lizard's body was cut into pieces, which turned into a low hill across what is now Kūhiō School.

Before 1900, Mō'ili'ili was home mostly to Hawaiians and Chinese (Watanabe, 1996a). The area was covered with duck and lotus ponds, rice and taro paddies, and banana and vegetable patches. Flower fields were established in Mō'ili'ili to supply the lei sellers of downtown Honolulu and later Waikīkī with various flowers. Soon Mō'ili'ili became known for its flower shops and was dubbed the "floral capital of Honolulu" (Watanabe, 1996b). Mō'ili'ili is still home to several florists.

Beginning in 1896, the ethnicity of the neighborhood began to change when the first settlers of Japanese ancestry moved to Mō'ili'ili. As more Japanese moved to Mō'ili'ili from the plantations, the shops they opened reflected their culture and included a tofu factory, teahouse, and okazu-ya (Watanabe, 1996a). The Mō'ili'ili Hongwanji Mission on University Avenue, built in 1906, and the Mō'ili'ili Japanese School, founded in 1902, became the cultural and social centers of the Japanese community.

In time, the Mō'ili'ili Japanese School became the largest community Japanese school in Hawai'i, with more than 1,000 students. In 1945, the school transferred its land and assets to the Mō'ili'ili Community Association. Gradually, the association became more ethnically diverse, reflecting the changing ethnic composition of the neighborhood, and began to develop recreational, social, and cultural programs. In 1965, the association formally became the Mō'ili'ili Community Center (Watanabe, 1996c).

Today, with the growth of the University of Hawai'i and zoning laws allowing apartment use, Mō'ili'ili has evolved into a multi-ethnic neighborhood; however, there is still a strong link to Japanese culture. The Honolulu Japanese Chamber of Commerce has made Mō'ili'ili its home since 1960, and in 1991, the Japanese Cultural Center of Hawai'i opened. Its mission is to preserve and promote the Japanese culture in the State.

Potential Impacts and Mitigation Measures

Due to excavation activities proposed within Date Street right-of-way, cultural artifacts or burial sites may be encountered. In accordance with Section 6E-46.6, HRS, and Chapter 13-300, Hawai'i Administrative Rules (HAR), should any significant cultural deposits or human skeletal remains be encountered during project construction, work shall stop in the immediate vicinity, and SHPD will be contacted.

The proposed project is within the existing Date Street right-of-way. This right-of-way does not provide any resources of use or interest to native Hawaiian cultural practitioners, such as food gathering, shelter, tool or weapon making, kapa-making, traditional medicines, lei making, etc. The proposed project will cross under two water ways that may utilized for gathering of resources. Construction activities will occur below Ala Naio stream or within existing pipes, therefore no resources will be impacted

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Based on historical research, it is reasonable to conclude that, pursuant to Act 50, the exercise of Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities within the project parcels will not be affected and there will be no direct adverse effect upon cultural practices or beliefs.

4.2 HAZARDOUS MATERIALS

Date Street has been an active roadway for approximately 75 years. During that time, automotive repair shops and fueling stations have occupied parcels located next to the road right-of-way. There is a possibility that contaminated soil resulting from leaking underground storage tanks will be encountered during trenching. Upon examination of the State Department of Health (DOH) Underground Storage Tank (UST) Database, there are numerous active and decommissioned USTs in the vicinity of the project area. Of these USTs, only three had confirmed releases that had not been remediated to level acceptable to DOH. Two facilities with confirmed releases, McCully Shell, (located at McCully Street and Young Street); and Goose's Edge, (located at Kapahulu Avenue and Winam Avenue) are approximately 1,000 feet away from the proposed project area. Remediation of the release has not yet begun. The third facility, Tesoro Gas Express, also located approximately 1,000 feet from the project area at Kapahulu Avenue and Date Street is currently in remediation. Without verification of the lateral extent of the contamination, it is unknown whether any of these releases will affect the proposed project.

Potential Impacts and Mitigation Measures

Contaminated soil and/or groundwater may be encountered during soil disturbance activities. Based on the distance from the sources of the three releases, it is unlikely that contaminated soil will be encountered. However, contaminated groundwater may be encountered in areas where soil disturbance occurs within the capillary fringe of the groundwater that is within the lateral extent of the groundwater contamination plume. To minimize potential worker exposure to contaminated water, every effort will be made to reduce excavation activities that descend into or past the capillary fringe. In the area of the relief pipe, contact with contaminated groundwater is more likely as excavation will occur up to 18 feet bgs. The project proponent will confirm with the remediation team for the McCully Shell project the vertical and lateral extent of the groundwater plume, and if necessary work with them to ensure adequate personnel protection.

4.3 ROADWAYS AND TRAFFIC

The proposed project is located within the Date Street right-of-way. Date Street provides access to residential communities and businesses in Mō'ili'ili and Kapahulu. Date Street is the primary access route to the Ala Wai Golf Course, Ala Wai Park, Ala Wai Elementary, Kaimukī High School, and 'Iolani School.

Streets Surrounding the Proposed Project Area

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Four intersections within the project along this portion of Date Street are heavily used by motorists. The primary roadway network in the vicinity of the project includes:

Date Street beginning at Pumehana Street is a 2-lane roadway that widens to four-lanes at Isenberg Street. Between Pumehana Street and Isenberg Street, Date Street is used primarily as a local road for residents and businesses. Between Isenberg Street and Lukepane Avenue (the end of the project area), Date Street is a collector roadway used by motorists travelling between Ala Moana, University, Kapahulu, and Waikiki. Two City bus routes, 3 and 4, travel along Date Street within the project area. Date Street is generally an east-west collector road that terminates at Kapahulu Avenue. It is a paved street owned and maintained by the City and County of Honolulu.

McCully Street is a four-lane, north-south roadway as it crosses Date Street. McCully extends north across Lunalilo Freeway up to Dole Street. McCully terminates at Kalākaua Avenue as a single direction roadway into Waikīkī. It is a paved street owned and maintained by the City and County of Honolulu. McCully is well-used route for entering Waikīkī and for accessing the H-1 freeway and is congested during rush hours. Tour buses, vans and taxis frequently pass through the unsignalized intersection of Date Street and McCully Street.

University Avenue is a divided four-lane, north-south major collector roadway that crosses Date Street. It is a paved street owned and maintained by the City and County of Honolulu. South of Kapi'olani Boulevard, the roadway narrows to two lanes. University Avenue terminates at Ala Wai Park. University Avenue is a well used access route for the University of Mānoa, and Mānoa Valley from Waikīkī, Mō'ili'ili, McCully, and Kapahulu.

Kapi'olani Boulevard is a 6-lane, east-west major collector roadway that crosses Date Street at a 6-way intersection along with Kamoku Street. It is a paved street owned and maintained by the City and County of Honolulu. Kapi'olani Boulevard terminates at the Kapahulu and Wai'ala Avenue intersection. Several City bus routes cross through this intersection. Tour busses and heavy rush hour traffic make this an extremely busy intersection.

The proposed project will cross several minor local roadways, Wiliwili, Pā'ani Street, Isenberg Street, Coolidge Street, Hausten Street, Kamoku Street, Lā'au Street, Mahi'ai Street, Menehune Lane, Olokele Avenue and Lukepane Avenue. All of these streets with the exception of Menehune Lane, Mahi'ai Street and Lā'au Street are city Streets. Menehune Lane is a private roadway. Mahi'ai and Lā'au Streets are both owned and maintained public/private roadways. However, all construction activities involved with this project will occur with areas of the City's jurisdiction.

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

TheBus

TheBus, which is the public transportation service provided by the City and County of Honolulu, provides bus service in the Mō'ili'ili and Kapahulu area. These service routes include:

Route A – Express bus service connects Mō'ili'ili to University of Hawai'i at Mānoa and Waipahu, and several points in-between, including Mō'ili'ili, Pearl City, Aloha Stadium, Kalihi Transit Center, Liliha, downtown, and Ala Moana Shopping Center.

Route 3 - A bus service that connects Kapahulu and Mō'ili'ili with Salt Lake and Kaimukī, and several points in-between, including Māpunapuna, Kalihi, downtown, and the Convention Center.

Route 4 – A bus service that connects Mō'ili'ili with Nu'uuanu Valley, downtown, Punchbowl, Makiki, the Mānoa Campus, Kapahulu, Waikīkī and the Honolulu Zoo.

Route 9 - A bus service that connects Mō'ili'ili with Pearl Harbor, downtown, the Honolulu International Airport and Pālolo Valley.

Route 14 - A bus service that connects Kapahulu with Kaimukī, Maunalani Heights, Kāhala, Chaminade University, Kahala Mall, and St. Louis Heights.

While a one-way fare is \$2.25, monthly and annual adult passes offering unlimited rides are available for \$50/month or \$550/year respectively.

Honolulu High-Capacity Transit Corridor Project

The City and County of Honolulu is planning for a high-capacity transit corridor project between Kapolei and the University of Hawai'i at Mānoa. The Honolulu High-Capacity Transit Corridor Project (HHCTCP) has evaluated transit alternatives for the 23-mile long corridor. On December 22, 2006, the City Council adopted Bill 79 (2006), CD2, FD2 (Ordinance 07-001) which selected the fixed guideway alternative as the Locally Preferred Alternative (LPA). The LPA eventually would include a route between Kapolei and the University of Hawai'i at Mānoa, starting at or near the intersection of Kapolei Parkway and Kalaeloa Boulevard, and would continue to UH Mānoa along Kapi'olani Boulevard. The City and County of Honolulu is undertaking preliminary engineering and, as of this writing, in the process of releasing the draft environmental impact statement for public review.

According to the HHCTCP website (<http://www.honolulutransit.org/overview>), the City and County of Honolulu Department of Transportation Services (DTS) is studying how to improve the ability of people to move in the highly congested east-west corridor between Kapolei and the University of Hawai'i at Mānoa.

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Potential Impacts and Mitigation Measures

Construction within the Date Street right-of-way will interrupt traffic, resulting in longer travel times, and generally inconvenience motorists. These impacts cannot be avoided. Construction of the preferred alternative has been designed to minimize traffic interruption by reducing areas requiring open-trench activities to the construction of the relief pipe. Sewer bypass pipes will be required to convey flow during the reconstruction process of the existing line. The relocation of the sewage flow to bypass conveyance pipes during construction typically affects traffic due to the location of these pipes and pumps above ground (see Picture 1, Bypass Pump).

There are eight schools (see Section 4.9) within a half mile of the project area that may be affected by the project. These schools are a source of increased transient traffic in the region particularly during the morning and in the afternoon as parents drop off their children.

In addition, the University of Hawai'i, Mānoa Campus is located less than one mile from the proposed project. The University is also a source of transient traffic in the area. The communities surrounding the University are a source of offsite parking for staff students and visitors particularly while school is in session and during on-campus sporting/extra-curricular events. The project may affect those commuting to the University.

To minimize traffic impacts at the Kapi'olani Boulevard/Date Street/Kamoku Street intersection, the bypass pipes will be buried. Wherever possible the remaining bypass pipes will utilize a bypass road ramp that allows cars to drive directly over unburred pipes (see Picture 2, Bypass Road Ramp). These bypass road ramps can be utilized at locations such as private driveways that will require continued access, but located in a segment requiring bypass.



Picture 1: Bypass Pump



Picture 2: Bypass Road Ramp

Traffic cones and other directional devices will be placed in the roadway to guide vehicles around work areas. The contractor will implement measures to provide access past work

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

sites and minimize the inconvenience to community members. These measures may include:

- Posting flagmen for traffic control around work sites.
- Backfilling all trenches at the end of the work day.
- Posting safety devices and signs for the duration of construction.
- Scheduling construction and material deliveries during non-peak traffic hours.
- Coordinating driveway crossings with homeowners and business occupants/ customers/ clients.
- Coordinating construction schedule with the City's Department of Facility Maintenance.
- To reduce the impact, on transient traffic, construction activities that require lane closures will not occur before 8:30 AM. Additionally, the project has tentatively been scheduled to commence during the summer of 2011 to correspond with the summer intersession.

Conducting trench work in the evenings could potentially minimize the traffic impact to the community. However, this will be balanced against the needs of the nearby residential community need for noise control particularly between 10 PM and 7 AM.

4.4 NOISE

The Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project will produce increased noise levels during construction. Several public schools may be impacted by noise generated as a result of this project. The nearest public school is King William Lunalilo Elementary School, which is less than 500 feet away from the terminus of the project area on Pumehana Street.

4.4.1 Construction Noise

Potential Impacts and Mitigation Measures

The Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project will increase the noise generated along Date Street short-term during construction. Noise will be generated from two different sources, general construction activities, and bypass pumps.

General Construction activities will increase noise levels within the project area. Exposure to noise will vary by construction activity, and the type of equipment used during the different activities. Heavy machinery and pneumatic impact equipment will likely generate noise in the range of 82-96 decibels-weighted (dB(A)) within 50 feet of the source.

Bypass pumps conveying sewer to bypass pipes, will be operational for the entire duration that bypass of the existing sewer conveyance pipes is required. Each pump may operate continuously for several days to allow rehabilitated pipe adequate curing time. To minimize the inconvenience to residents and businesses alike, construction activities will

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

be segmented to reduce the duration that each bypass pump must operate. In addition, pumps will be operated with appropriate noise dampening covers.

Community Noise Control regulations, Hawai'i Administrative Rules (HAR Title 11, Chapter 46) establish maximum permissible sound levels for construction activities occurring within "acoustical" zoning districts. Based on the mixed use, multi-family dwellings, and commercial and business uses of the area, the project is considered located in the Class B zoning district for noise control purposes. The maximum permissible daytime (7:00 AM to 10:00 PM) sound level in the district is 60 db(A).

In general, construction activities cannot exceed the permissible noise levels for more than ten percent of the time within any twenty minute period except by permit or variance. Any noise source that emits noise levels in excess of the maximum permissible sound levels cannot be operated without first obtaining a noise permit from the State Department of Health. Although the permit does not attenuate noise, it regulates the hours during which excessive noise is allowed.

The general contractor will be responsible for obtaining necessary permits and complying with all permit conditions. There is a need to balance work activities to meet permit conditions for "acoustical" zoning districts while minimizing traffic disruptions. Work will primarily be scheduled for daytime hours, as described in HAR Title 11, Chapter 46 (7:00 AM to 10:00 PM), Monday through Friday. The contractor will also ensure that construction equipment with motors are properly equipped with mufflers in good operating condition.

4.4.2 Operational Noise

Upon completion of the project, noise levels will be reduced back to pre-construction levels.

Potential Impacts and Mitigation Measures

Because long-term noise levels are not expected, no post-construction noise mitigation measures are planned for this project.

4.5 AIR QUALITY

The State's good air quality is largely a function of the predominant tradewinds blowing from the northeast. The typical tradewind pattern blows anthropogenic and volcanic pollutants out from metro Honolulu toward the ocean. However, during non-tradewind periods, both anthropogenic and volcanic pollutants tend to accumulate on island impacting both visibility and air quality (increase in sulfur oxides (SOx) and particulates). According to the EPA, there are no "non-attainment" areas on the island of O'ahu. A non-attainment area is defined as a locality where air pollution levels persistently exceed National Ambient Air Quality Standards (NAAQS). According to the State of Hawai'i, Department of Health, Clean Air Branch, there are no permitted sources located along Date Street. Most of the existing airborne pollutants are attributed primarily to vehicle-generated exhaust from the region's roadways.

Potential Impacts and Mitigation Measures

The City recognizes the potential for impacts to air quality during construction. This could occur from additional traffic generated by construction vehicles, machinery, and dust generated during construction. In addition, the proposed project may cause the release of nuisance fumes from sewer gases.

An effective dust control plan will be implemented as necessary. All construction activities will comply with the provisions of Title 11, Chapter 59, HAR related to Ambient Air Quality Standards and Section 11-60.1-33, HAR related to Fugitive Dust. Measures to control dust during various phases of construction include:

- Providing an adequate water source at the site prior to start-up construction activities;
- Landscaping and rapid covering of bare areas
- Disturbing only the areas of construction that are in the immediate zone of construction to limit the amount of time that the areas will be subject to erosion;
- Providing adequate dust control measures during weekends, after hours, and before daily start-up of construction activities.
- Installing appropriate structural controls in areas of disturbance.
- Situating staging areas on impervious surfaces wherever possible.

During reconstruction and rehabilitation of the sewer conveyance system, the release of sewer gases is inevitable. To mitigate the impact to residents, contractors will only access sewer pipes as necessary. In addition, access will occur only during working hours.

4.6 VISUAL RESOURCES

The proposed project is located below ground along Date Street. It is surrounded by buildings of mixed height and mass. The City and County of Honolulu's Primary Urban Center Development Plan does not recognize any view planes encompassing the construction site that require consideration and accommodation.

Potential Impacts and Mitigation Measures

Because no visually adverse impacts are expected, no additional mitigation measures are proposed.

4.7 SOCIAL & ECONOMIC CHARACTERISTICS

According to the 2000 Census, the population of City and County of Honolulu numbered 876,156 individuals. The most recent American Community Survey conducted for City and County in 2006 by the Census Bureau accounted for 909,863 residents, representing a 4% increase in population. Approximately 19% of the City and County residents have obtained a bachelor's degree or higher. Approximately 65% of the City and County residents actively participate in the workforce, with the median household income reported at \$51,914 per year.

Honolulu is the State's center of commerce and industry. In addition, it is the most densely populated urban area both on O'ahu and in the state. According to the American Community Survey of 2006, City and County of Honolulu residents are slightly older, more likely to have a college degree and a higher per capita income than residents of Hawai'i's other Counties. The proposed project site is located within the County Administrative District V, which includes Kapahulu, Kaimukī, Pālolo Valley, St. Louis Heights, Mānoa, Mō'ili'ili, McCully, Kaka'ako, Ala Moana and Makiki neighborhoods. These neighborhoods are largely residential with housing types ranging from single-family dwellings, to low, mid- and high-rise multi-family dwellings. Institutional uses are scattered throughout these neighborhoods, with the University of Hawai'i, being the most dominant institutional use in the vicinity. Commercial nodes service the neighborhoods, predominantly along arterial and collector streets. The activities along Date Street within the project area are predominantly multi-family dwellings, single family dwellings and open space associated with Ala Wai Golf Course and Kaimukī High School.

Potential Impacts and Mitigation Measures

The proposed project will improve the sewer infrastructure system for residents of the Mō'ili'ili, McCully and Kapahulu areas by reducing impact of infiltration and inflow during storm events. This reduces the risk of sewage back flow into residential units, and the potential for catastrophic failure of the pipes. This project will have a positive impact on the community; therefore, no mitigation measures are required.

4.8 INFRASTRUCTURE AND UTILITIES

4.8.1 Potable Water System

Two waterlines of varying size (6" to 30" mains) convey potable water to the project area. The project as proposed will address the wastewater infrastructure system, but will also require the use of potable water temporarily during construction.

Potential Impacts and Mitigation:

The project as proposed will improve the integrity of the existing wastewater conveyance system. Additionally during rehabilitation, all cross-connections to the existing sewer pipe will be removed. Upon completion of the project, potable water will not be utilized, therefore, no mitigation measures are required.

4.8.2 Wastewater System

The existing sanitary sewer lines along Date Street have been assessed and determined to be inadequate, or in need of repair (Fukunaga, 1999).

Potential Impacts and Mitigation Measures

The project as proposed will increase the capacity of the sewer conveyance system along Date Street between Pumehana Street and Kapi'olani Boulevard. The project is designed to fulfill a portion of the 1995 Consent Decree requirements agreed upon by the State, EPA and the City. The installation of the relief pipe will provide adequate capacity to meet 1995 requirements for a peak wet weather event as well as meet 2020 peak flows. The project will improve the existing wastewater system; therefore, no mitigation measures are required.

4.8.3 Drainage System

The proposed project is located along Date Street. There are six drainage systems within the project area. One system, collecting runoff from Coolidge Street to University Avenue discharges into Ala Naio (drainage) canal. A second system intercepts runoff between Lukepane Avenue and Kapi'olani Boulevard and conveys it via 18 inch and 36 inch pipes to the Mānoa-Pālolo (drainage) canal. The remaining four systems convey runoff from Pumehana Street to Coolidge Street; and from University Avenue to Kapi'olani Boulevard to the Ala Wai Canal. One hundred percent of the project area is covered by impervious surfaces. There will be no net increase in storm water runoff generated due to an increase in impervious surface area.

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Potential Impacts and Mitigation Measures

Storm water runoff has the potential to increase the non-point source pollutant load into the Mānoa-Pālolo Channel (Mānoa Stream and Pālolo Stream), the Ala Wai Canal/Harbor, and eventually the Pacific Ocean. Mānoa Stream, Pālolo Stream and the Ala Wai Canal/Harbor have been listed as impaired for the following pollutants by the Hawai'i State Department of Health's, *2006 State of Hawai'i Water Quality Monitoring and Assessment Report*, as approved by US Environmental Protection Agency, Region 9, February 7, 2008.

Table 4-1
Impaired Water Bodies Potentially Impacted by Proposed Construction Activities

Name of Water Body	Contaminants detected in Water Samples
Mānoa Stream	Nutrients, turbidity, dieldrin, total chlordane
Pālolo Stream	Suspended solids, trash
Ala Wai Canal and Harbor	Chlorophyll a, nitrogen, total phosphorus, turbidity, fecal coliform, enterococci, metals, suspended solids, organochlorine, pesticides, lead

While Total Maximum Daily Load (TMDL)s have only been established for nutrient loadings (nitrogen 200 ug/L, phosphorus 25 ug/L) for the Ala Wai Canal, no TMDLs have been established for Mānoa or Pālolo Streams. Establishment of TMDLs for the remainder of the pollutants in the Ala Wai, Pālolo, and Mānoa Streams has not been scheduled. Additionally, the remaining pollutants have been given a TMDL development priority code of "low." While contaminants such as chlordane have been detected in samples from Mānoa Stream, the source is not known, as use was widespread throughout the state.

The proposed project will result in the disturbance of over one (1) acre of land area. Therefore, a National Pollutant Discharge Elimination System (NPDES) permit will be required. Best Management Practices (BMP) will be implemented to prevent pollution and protect the environment. Temporary erosion control measures will be installed prior to any demolition and/or construction activities. Structural BMPs to control silt and sediment will be utilized where necessary at drain inlets and along the banks of the Ala Naio and Mānoa-Pālolo canals.

4.8.4 Energy and Communications Systems

There are existing underground electrical, gas, cable, telephone, fiber optic, and US Signal Corps lines along Date Street.

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Potential Impacts and Mitigation Measures

The network of underground utilities could be impacted particularly in the vicinity of the relief pipe and bypass pipe construction areas. The project engineers have coordinated with the various utility companies as well as the United States Army to insure service interruption is minimized during construction, and all necessary safety precautions are met.

4.8.5 Solid Waste

The existing sewage conveyance system does not generate any solid waste.

Potential Impacts and Mitigation Measures

Solid waste will be generated during rehabilitation and reconstruction activities. To reduce the quantity of waste generated by this project, several in situ technologies will be employed. The utilization of CIPP technology will reduce the amount of waste generated during rehabilitation activities. The existing pipe will be utilized to provide structural support as the new pipe is cured in place. The existing pipe will remain below ground and will not require disposal. The pipe jacking technology will reduce waste generated by employing a closed loop spoils recovery system. Solid waste disposal will be in accordance with the guidelines set forth by the City's Department of Environmental Services.

Upon completion of the project, there will be no net increase in solid waste disposal.

4.9 PUBLIC SERVICES AND FACILITIES

Police Protection

The site is located within Honolulu Police Department District 7.

Fire Protection

The McCully Fire Station is located at 2425 Date Street and is adjacent to the project area.

Health Care Services

Kapi'olani Medical Center, which includes emergency services, is located at 1319 Punahou Street, is less than a mile from the project area.

Recreational Facilities

Recreational facilities near the proposed project include as Crane Park, Ala Wai Golf Course, McCully Park, Mō'ili'ili Park, and Old Stadium Park.

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Schools

There are several public and private schools for children (pre-K through 12th grade) located near the proposed project areas. The nearest public schools are:

- King William Lunalilo Elementary School, located less than 500 feet away from the terminus of the project area on Pumehana Street.
- Kaimukī High School, located mauka of Date Street between the Mānoa -Pālolo Drainage canal and Olokele Avenue

The following schools are located within 1000 feet from the proposed project area:

- Ala Wai Elementary School
- 'Iolani School
- Angels at Play Preschool

The following schools are located between 1000 feet and 2600 feet of the project area:

- Washington Intermediate School
- Prince Kūhiō Elementary School
- The Early School Preschool
- Mō'ili'ili Hogwanji Preschool
- KCAA, Mother Rice Preschool

The University of Hawai'i, Mānoa campus is located within one mile of the proposed project.

Potential Impacts and Mitigation Measures

The City does not anticipate the proposed project will generate an increased demand on existing public services as the proposed project involves the rehabilitation of the sewage conveyance system. The project, designed to fulfill a portion of the 1995 Consent Decree, will increase capacity of the existing system to meet 1995 requirements for peak wet weather capacity. The system improvements are designed to provide adequate capacity, and will not provide excess capacity that would stimulate growth, and therefore increased demand on public services.

5.0 LAND USE CONFORMANCE

State and City and County of Honolulu land use plans, policies, required permits and approvals relevant to the Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction are described below.

5.1 STATE OF HAWAII

5.1.1 State Land Use Law, Chapter 205, Hawai'i Revised Statutes

The State Land Use Law (Chapter 205, HRS), establishes the State Land Use Commission (LUC) and authorizes this body to designate all lands in the State into one of four districts: Urban, Rural, Agricultural, or Conservation. These districts are defined and mapped by the State Land Use Commission in order to ensure compatibility with neighboring land uses and protection of public health.

The Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project is located within the State Urban District (Figure 11).

5.1.2 Coastal Zone Management Act, Chapter 205A, Hawai'i Revised Statutes

The Coastal Zone Management Area, as defined in Chapter 205A, HRS, includes all the lands of the State. Therefore, the proposed Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project lies within the Coastal Zone Management Area.

The Coastal Zone Management (CZM) Program aims to provide recreational opportunities, protect historic resources, protect scenic and open space resources, protect coastal ecosystems, provide facilities for economic development, reduce hazards, and manage development. Program objectives and applicability to the proposed Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project are discussed below:

RECREATIONAL RESOURCES

Objective: Provide coastal recreational opportunities accessible to the public.

Policy A: Improve coordination and funding of coastal recreational planning and management; and

Policy B: Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

- (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

- (ii) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;
- (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
- (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
- (v) Ensuring public recreational uses of County, State, and Federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;
- (vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;
- (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and
- (viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and County authorities; and crediting such dedication against the requirements of section 46-6.

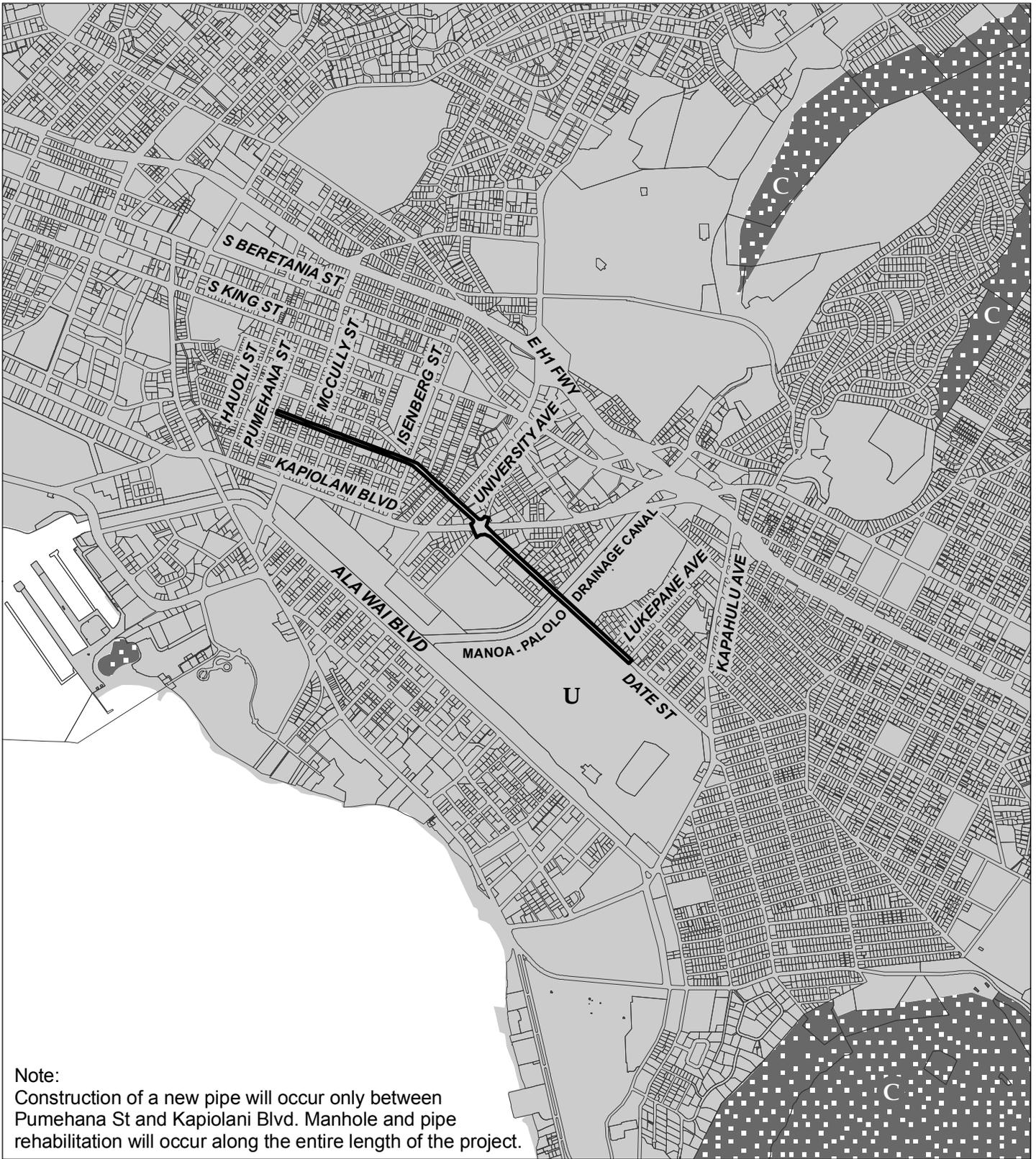
Discussion: The proposed Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction will be located inland, away from the shoreline (approximately one-half mile from the nearest coastline); therefore, it is anticipated that there will be no effect on existing coastal recreational resources. The project is located approximately 0.3 miles from the Ala Wai Canal. The project as proposed is located within the Date Street right-of-way and should not impact the recreational resources associated with the Ala Wai Canal, an inland waterway.

HISTORIC RESOURCES

Objective: Protect, preserve and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policy A: Identify and analyze significant archaeological resources;

Policy B: Maximize information retention through preservation of remains and artifacts or salvage operations; and



Note:
 Construction of a new pipe will occur only between
 Pumehana St and Kapiolani Blvd. Manhole and pipe
 rehabilitation will occur along the entire length of the project.

LEGEND

-  U: Urban District
-  C: Conservation District
-  Project Site

FIGURE 11
 State Land Use District
**Moiliili-Kapahuhu Sewer
 Rehabilitation/ Reconstruction**

CLIENT ISLAND OF OAHU

NORTH LINEAL SCALE (FEET)

 0 500 1,000 2,000 4,000


 PBR HAWAII
 & ASSOCIATES, INC.
 AUGUST 2009

Source: State Land Use Commission (GIS, 2009)
 Disclaimer: This graphic has been prepared for general planning purposes only.

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MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Policy C: Support State goals for protection, restoration, interpretation, and display of historic resources.

Discussion: Due to the extensive disturbance this site has experienced for development and subsequent redevelopment, it is unlikely that subsurface archaeological or cultural resources are present. Should any archaeological or cultural remains be encountered during construction, all work in the immediate vicinity of the find will cease and the State Historic Preservation Division will be contacted for establishment of appropriate mitigation in accordance with Chapter 6E, Hawai'i Revised Statutes.

SCENIC AND OPEN SPACE RESOURCES

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

Policy A: Identify valued scenic resources in the coastal zone management area;

Policy B: Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

Policy C: Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

Policy D: Encourage those developments which are not coastal dependent to locate in inland areas.

Discussion: The proposed Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project will be located inland, away from the shoreline. Additionally, Best Management Practices (BMPs) will be employed during construction to reduce erosion of soils and fugitive dust during construction, particularly in the vicinity of the Ala Nāio and Mānoa-Pālolo Canals. It is anticipated that there will be no effect on the quality of the coastal scenic resources.

COASTAL ECOSYSTEMS

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

Policy A: Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

Policy B: Improve the technical basis for natural resource management;

Policy C: Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Policy D: Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

Policy E: Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Discussion: Best Management Practices (BMPs) will be employed during construction to reduce erosion of soils and fugitive dust during construction. Controlling runoff particularly will ensure that the construction will not increase inputs of sediment into Mānoa-Pālolo, Ala Naio and Ala Wai canals. Historically, catastrophic pipe failures in the Waikīkī ahupua'a have resulted in temporary reduction in water quality impacting the coastal ecosystem. The project as proposed should reduce the potential for catastrophic pipe failures along Date Street caused by heavy rainfall. It is anticipated that over the long term there will be no deleterious effect on the quality of the coastal ecosystems.

ECONOMIC USES

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

Policy A: Concentrate coastal dependent development in appropriate areas;

Policy B: Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

Policy C: Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

- (i) Use of presently designated locations is not feasible;
- (ii) Adverse environmental effects are minimized; and
- (iii) The development is important to the State's economy.

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION

DEPARTMENT OF DESIGN AND CONSTRUCTION DRAFT ENVIRONMENTAL ASSESSMENT

Discussion: The Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project does not directly impact the State economy. However, improvement to the wastewater treatment system allows for better segregation of sewage, and associated pathogens, from the population. This can improve the health of the population, indirectly improving the State economy. An adequately functioning, well maintained sewer system will require fewer service and traffic disruptions for repairs ensuring the economic well-being of this urban neighborhood. The project will have a positive impact on the local economy temporarily by providing jobs for contractors and construction workers.

COASTAL HAZARDS

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

Policy A: Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and non-point source pollution hazards;

Policy B: Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and non-point source pollution hazards;

Policy C: Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

Policy D: Prevent coastal flooding from inland projects.

Discussion: The proposed Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction will be located entirely underground. This virtually negates any potential detriment to the quality of coastal ecosystems as a result of the project. During construction, Best Management Practices (BMPs) will be employed to reduce non-point source pollution caused by the erosion of soils and fugitive dust; particularly in the vicinity of the Ala Naio and Mānoa-Pālolo Canals.

MANAGING DEVELOPMENT

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

Policy A: Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

Policy B: Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Policy C: Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Discussion: As with all construction projects that cause soil disturbance, there is the potential for the creation of non-point source pollution. The project will include both structural and non-structural controls to reduce the impact on the Ala Naio and Mānoa-Pālolo canals and ultimately the Ala Wai Canal and the Pacific Ocean. Due to the project's inland location, it should not be considered a "significant coastal development." Its benign location relative to the coastline should not require an involved public participation process concerning coastal effects, although this EA provides an opportunity for input.

PUBLIC PARTICIPATION

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

Policy A: Promote public involvement in coastal zone management processes;

Policy B: Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and

Policy C: Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion: This Environmental Assessment provides a means for public input.

BEACH PROTECTION

Objective: Protect beaches for public use and recreation.

Policy A: Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

Policy B: Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

Policy C: Minimize the construction of public erosion-protection structures seaward of the shoreline.

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Discussion: The proposed Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project is separated from the ocean by the Ala Wai Canal and Waikiki. Due to the distance from the shoreline, no adverse impact to area beaches is anticipated.

MARINE RESOURCES

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

Policy A: Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

Policy B: Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

Policy C: Assert and articulate the interests of the State as a partner with Federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

Policy D: Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

Policy E: Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion: The proposed Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project is separated from the ocean by the Ala Wai Canal and Waikiki. Due to the distance from the shoreline, no adverse impact to area beaches is anticipated. The project as proposed should reduce the potential for catastrophic pipe failures along Date Street caused by heavy rainfall, furthering the City's commitment to protect the environment and public health, as well as meeting the 1995 Consent Decree.

5.1.3 Hawai'i State Planning Act, Chapter 226, Hawai'i Revised Statutes

The Hawai'i State Plan, Chapter 226 HRS (2007) provides guidelines for the future growth of the State of Hawai'i. The Hawai'i State Plan identifies goals, objectives, policies, and priorities for allocating the State's resources, including public funds, services, human resources, land, energy, and water. The plan was enacted to achieve "a desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people." Chapter 226 HRS (2007).

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION

DEPARTMENT OF DESIGN AND CONSTRUCTION DRAFT ENVIRONMENTAL ASSESSMENT

Discussion: Planning objectives outlined in Chapter 226 support the proposed Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project. Section 226-13 sets forth goals relating to improvement of land, air and water quality. Section 226-15 sets forth goals relating to provisioning of adequate sewerage facilities. Section 226-20 sets forth goals to ensure environmentally healthful and sanitary conditions. The proposed project is consistent with the State's goals to for an environment, characterized by beauty, cleanliness and stable natural systems.

5.2 CITY AND COUNTY OF HONOLULU PLANS

5.2.1 O'ahu General Plan

The O'ahu General Plan is the policy document for the long-range development of the Island of O'ahu. The O'ahu General Plan is a statement of general conditions to be sought in the 20 year planning horizon and policies to help direct attainment of the plan's objectives.

Specific General Plan goals and policies applicable to the proposed Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project are discussed below.

Transportation and Utilities

Objective B – To meet the needs of the people of O'ahu for an adequate supply of water and for environmentally sound systems of waste disposal

- (5) Provide safe, efficient, and environmentally sensitive waste-collection and waste-disposal services

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

- (1) Maintain existing utility systems in order to avoid major breakdowns.
- (2) Provide improvements to utilities in existing neighborhoods to reduce substandard conditions.

Discussion: The Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction is located within the City and County of Honolulu's Primary Urban Center (Figure 12). The Date Street wastewater conveyance system has been determined to of inadequate capacity and prone to failure due to sever corrosion. The project supports these policies by improving the wastewater conveyance system along Date Street.

5.2.2 Primary Urban Center Development Plan

The City and County of Honolulu has adopted the Primary Urban Center Development Plan as one of eight community-oriented plans to guide public policy, investment and decision making through the 2025 planning horizon. The document contains policies specific to Honolulu's primary urban center. These policies are then implemented through ordinances such as the Land Use Ordinance (zoning code).

The Primary Urban Center Development Plan includes a policy to, "Implement wastewater collection system improvements to provide adequate service and sound facilities to existing neighborhoods..."(Section 4.2.2).

Discussion: The proposed project is designed to improve the existing wastewater collection system to ensure adequate service to neighborhoods in Mō'ili'ili and Kapahulu.

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

5.2.3 Land Use Ordinance

The Land Use Ordinance implements the goals and objectives of the O'ahu General Plan and the Primary Urban Center Development Plan. All lands within the City and County of Honolulu are zoned into specific districts. According to the Department of Planning and Permitting, the project site is zoned A-1 Low Density Apartment; A-2 Medium Density Apartment; A-3 High Density Apartment (Figure 13). According to Sec. 21-3.70 of the Land Use Ordinance (LUO):

- A-1 *The intent of the A-1 low density apartment district is to provide areas for low density, multifamily dwellings. It may be applied as a buffer between residential districts and other more intense, noncompatible districts. It would be applicable throughout the city.*

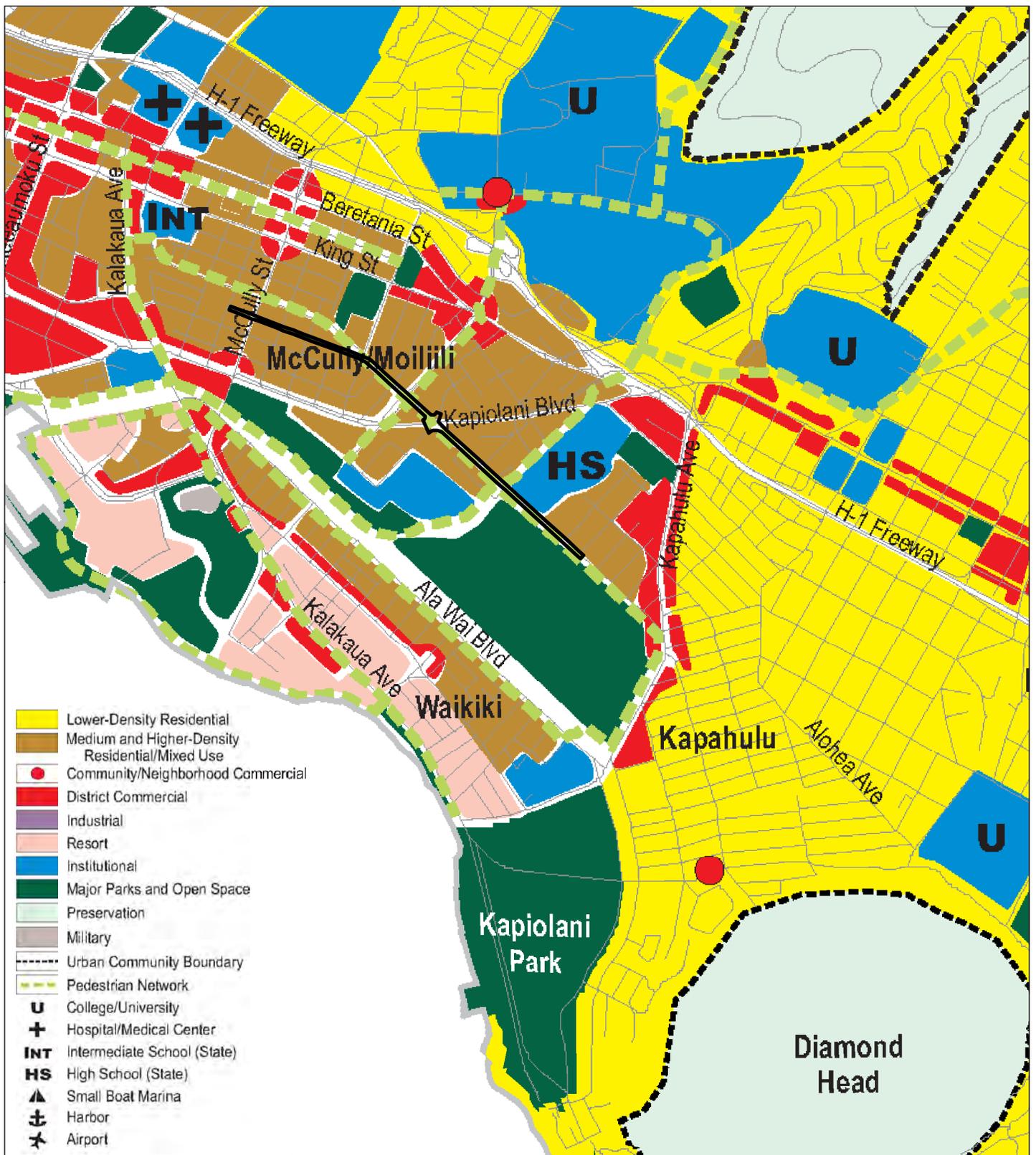
- A-2 *The intent of the A-2 medium density apartment district is to provide areas for medium density, multifamily dwellings. It is intended primarily for concentrated urban areas where public services are centrally located and infrastructure capacities are adequate.*

- A-3 *The intent of the A-3 high density apartment district is to provide areas for high density, high-rise, multifamily dwellings. It is intended for central urban core areas where public services and large infrastructure capacities are present.*

According to the LUO Master Use Table (Table 21-3), utility installations are permitted in all zoning districts regulated by the City and County of Honolulu under conditional use permit-minor or permitted used subject to the standards in Article 5.

The project is also located within a Special Land Use District, Flood Hazard District and has been described in section 3.5, Natural Hazards.

Discussion: The Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction is consistent with the purposes of the A-1, A-2, A-3 land use districts. The project will support the existing residential communities by ensuring adequate conveyance of sewage to the Sand Island facility for treatment and ultimate disposal.



LEGEND

Project Site

Note:

Construction of a new pipe will occur only between Pumehana St and Kapiolani Blvd. Manhole and pipe rehabilitation will occur along the entire length of the project.

Source: City and County of Honolulu (2004)

Disclaimer: This graphic has been prepared for general planning purposes only.

FIGURE 12

Primary Urban Center Development Plan

Moiliili-Kapahulu Sewer Rehabilitation/ Reconstruction

CLIENT

ISLAND OF OAHU

NORTH

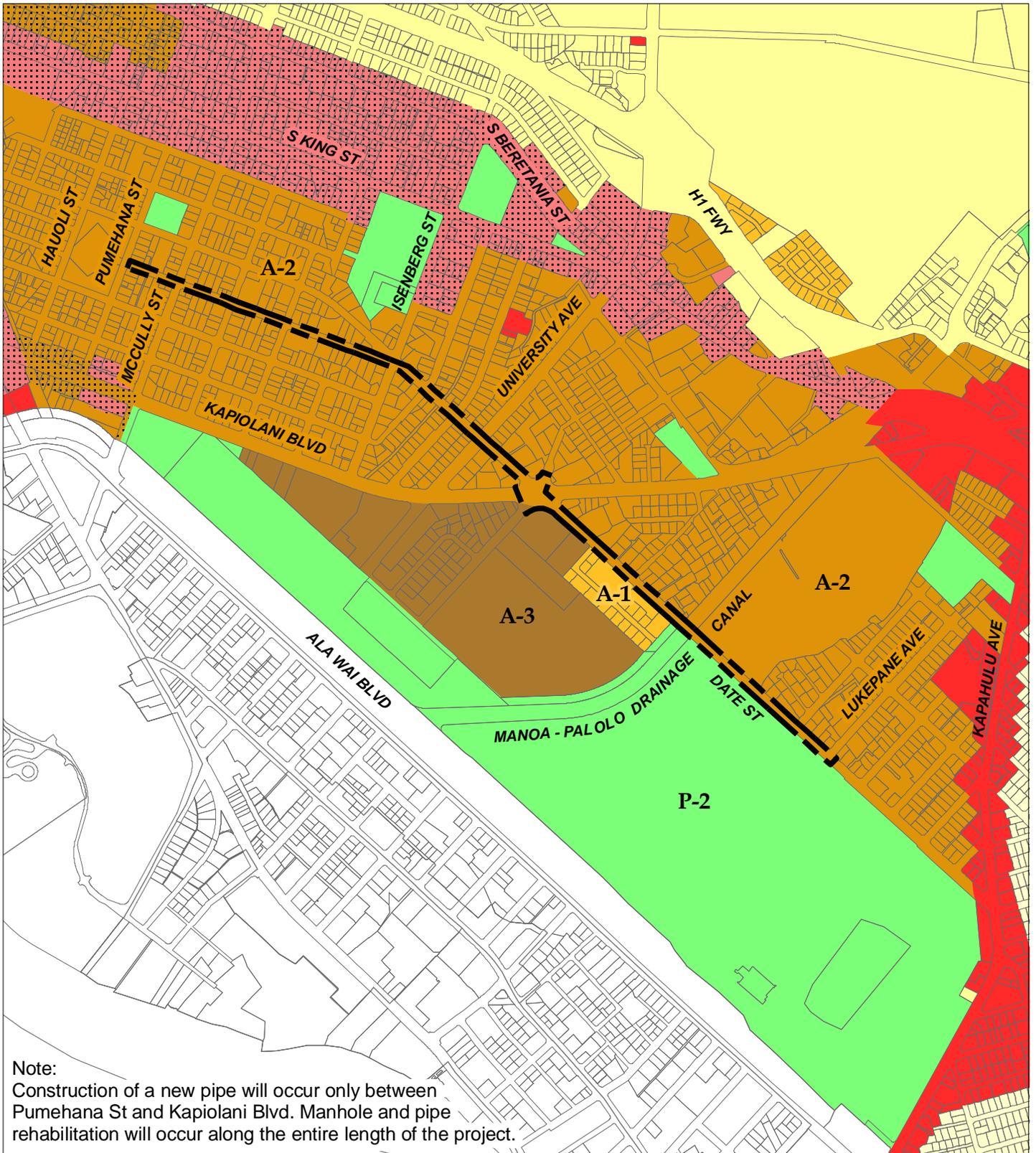
LINEAL SCALE (FEET)

0 500 1,000 2,000 4,000



AUGUST 2009

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Note:
 Construction of a new pipe will occur only between Pumehana St and Kapiolani Blvd. Manhole and pipe rehabilitation will occur along the entire length of the project.

LEGEND

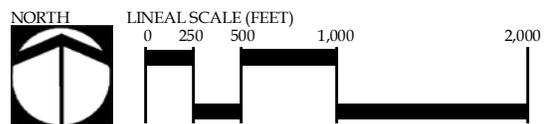
 R-3.5 Residential	 B-1 Business
 R-5 Residential	 B-2 Business
 A-1 Apartment	 BMX-3 Business Mix
 A-2 Apartment	 P-2 Preservation
 A-3 Apartment	 Others
 AMX-2 Apartment Mix	 Project Site

FIGURE 13

City and County of Honolulu Zoning Map

Moiliili-Kapahulu Sewer Rehabilitation / Reconstruction

CLIENT ISLAND OF OAHU



Source: City and County of Honolulu (2008)
 Disclaimer: This graphic has been prepared for general planning purposes only.



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MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

5.3 LIST OF REQUIRED PERMITS AND APPROVALS

Required permits and approvals are outlined in Table 5-1, below.

Table 5-1
Required Permits and Approvals

AGENCY	PERMIT/APPROVAL
FEDERAL	
Department of the Army	<ul style="list-style-type: none"> • Section 10 permit, Rivers and Harbor Act of 1899
STATE OF HAWAI'I	
Department of Health	<ul style="list-style-type: none"> • NPDES
Department of Land and Natural Resources, Historic Preservation Division	<ul style="list-style-type: none"> • Section 6E, Hawai'i Revised Statutes (HRS) Review
CITY AND COUNTY OF HONOLULU	
Department of Planning and Permitting	<ul style="list-style-type: none"> • Building Permit
Department of Planning and Permitting	<ul style="list-style-type: none"> • Plan Review Use permit
Department of Planning and Permitting	<ul style="list-style-type: none"> • Grading Permit
Department of Environmental Services	<ul style="list-style-type: none"> • Noise Permit for Construction Activities
Department of Planning and Permitting	<ul style="list-style-type: none"> • Construction Dewatering Permit
Department of Planning and Permitting	<ul style="list-style-type: none"> • Permit to Excavate Public Right of Way
Department of Transportation Services	<ul style="list-style-type: none"> • Street Usage Permit
Department of Planning and Permitting	<ul style="list-style-type: none"> • Construction within a Flood Hazard District approval
	<ul style="list-style-type: none"> •

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

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6.0 ALTERNATIVES

In compliance with the provisions of Section 11-200-17(f), HAR relating to Environmental Impact Statements, an environmental assessment must discuss potential alternatives to the proposed action.

The alternatives considered include:

6.1 NO ACTION

The no-action alternative results in no change to the existing waste water conveyance system in the Mō'ili'ili-Kapahulu area. Under this alternative, the City would not reconstruct the existing sewer lines, repair manholes or construct a relief line. Seepage and blockage would cause continued environmental degradation and potential overflow conditions along the existing sewer lines on Date Street between Pumehana Street and Lukepane Avenue. The 37 manholes would continue to degrade eventually creating unsafe conditions for sewer maintenance technicians. The relief line would not be constructed limiting the City's ability to divert sewage from the main line during repair and emergency situations. The system would continue to operate at maximum capacity without the ability to convey current peak flow conditions with necessary safeguards safely. The no-action alternative would not satisfy the Consent Decree agreed upon by the EPA, State and City. This alternative would however limit potential impacts to the Ala Naio and Mānoa-Kapahulu drainage canals during construction.

6.2 ALTERNATIVES

As noted in Section 4.1.1 of this Environmental Assessment, the main objectives of the Mō'ili'ili-Kapahulu Sewer Rehabilitation/Reconstruction project is to provide adequate capacity to convey current and future peak sewage flow from the Mō'ili'ili and Kapahulu area and to meet the requirements of the civil enforcement consent decree settlement.

The rehabilitation of the sewage conveyance system will have a positive impact upon the communities of Mō'ili'ili, Kapahulu, and the State as a whole by reducing the potential of system failures resulting in sewage overflows.

Since the start of the project, several alternatives were explored and tested for feasibility and are compiled below. The evaluation of alternatives took into consideration four criteria, long-term improvement, constructability, and inconvenience to the public and cost. A rating matrix was developed to assist in the evaluation of each alternative. Each criterion was rated one through ten, with one being the worst and 10 being the best. A description of the alternatives along with their ratings is described in detail below:

6.2.1 ALTERNATIVES for Reconstruction of Existing Conveyance Lines

Alternative 1-A, CIPP Lining: In this alternative, cured-in-place-pipe (CIPP) technology is utilized to reconstruct the existing sewer conveyance pipes. The existing sewer pipes will be accessed through existing permanent access point (manholes), flushed and temporarily isolated from the existing conveyance system. Sewage within the lateral pipes will temporarily be diverted during the CIPP installation and curing process. This can be done utilizing diversions from existing manholes. Once the pipe is cleaned and isolated, a resin-saturated tube is inserted, expanded and cured using water or steam to create a jointless, tight-fitting pipe within the existing pipe. Ground disturbance is minimized with CIPP because most activities occur within the existing pipe. Some sewer lateral diversions may require the use of temporary diversion pipes that cannot be connected at existing manhole locations. Ground disturbance will occur when temporary diversions cannot be connected at existing manholes. Reconnection to conveyance system is done by robotic cutting devices or manually. This system ranked very high in all four criteria. The jointless installation improves the current system by reduce the number seams the primary location for leaks. Because this technology will be done in situ, many impacts are reduced. The technology will require less excavation than any of the other alternatives. This will result in less nuisance dust and fewer traffic impacts. The construction time is short compared to other methods reducing inconvenience to the public. While most impacts are reduced by this method, flows will need to be bypassed resulting in increased noise levels from generators utilized for pumping.

Alternative 1-B: Open Trench: In this alternative, a new trench would be excavated parallel to the existing sewer. New pipe would be installed for the entire length of the project. Existing manholes would be rechannelized and connected to the new pipe. The advantages to this alternative include, contractor familiarity with the methodology, use of the existing sewer line for bypass, and the ability to increase the capacity of the sewer line, eliminating the need for a relief line while accommodating existing and future flows. Alternative 1-B received the highest rating for system improvement. The PVC pipe is extremely resistant to deterioration and would replace rather than rehabilitate the existing pipe. In addition, because this method is done in an open trench, the installation can be inspected resulting in the detection of more defects and better grade control than other methods. However, of the technologies assessed this method will have the greatest short term impacts to the community and the environment. Open trench activity will require greater sedimentation and erosion control. In addition, the rehabilitation portion of the project will cross two stream channels, requiring alternate construction methods to ensure the protection of the stream. This method will also generate more dust, noise, and impact traffic and other underground utilities more than the other three alternatives.

Alternative 1-C: Pipe Bursting: This alternative rehabilitates and increases the capacity of the existing conveyance system. A pipe bursting hammer is pulled through the existing pipe breaking it into pieces that are forced into the surrounding soil. A new pipe is pulled

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

behind the bursting hammer, replacing the shattered pipe. The advantage of this method is the ability to increase hydraulic conductivity using an in situ technology. There are less traffic impacts than the use of the traditional open-trench technology. Excavation of insertion pits will still be required. There are several disadvantages to this methodology. Pipe bursting received very low scores for public inconvenience due to the loud noise and vibration associated with the hammer technology. Disturbance of surrounding utilities and surrounding structures is possible. Ground heaving is also possible. The relief pipe would still be required, but could not be built until after the pipe-bursting activities are completed limiting the relief pipes utility as a bypass pipe.

Alternative 1-D: Segmented Sliplining: This alternative similar to CIPP, inserts a malleable smaller diameter pipe inside the existing pipe. The liner pipe utilized will be dependent on the size of the existing pipe. Existing pipes 24-inches or larger will be lined with a centrifugally cast, glass-fiber reinforced polymer mortar (CCFRPM) pipe. Smaller diameter pipes will be lined with Poly-vinyl Chloride (PVC) pipes. This method requires the excavation of an access pit that is utilized to insert pipe segments into the existing pipe. Additional excavation will be required to reconnect laterals. This method received the highest rating for cost and the lowest for site improvement. This method would significantly reduce hydraulic capacity, and would not be seamless. There is a higher potential for infiltration at joint seams than other seamless technologies. This method would inconvenience the public less than open trench and pipe bursting. However, due to the requirement for excavations at each lateral connection and at each access pit point this method would inconvenience the general public more than CIPP.

Of the four technologies assessed for relief pipe construction, CIPP lining received the highest score (8.75) in the assessment of cost, system improvement, constructability and public inconvenience. The combined scores for Open Trench, Pipe Bursting, and Segmented Sliplining were between 2.95 and 6.1. The results of the assessment are summarized in Table 6-1.

Table 6-1 Rating Matrix for Reconstruction of Existing Conveyance Line Alternatives

Rating criteria (criteria weight)	Estimated Cost 35%	System Improvement 30%	Constructability 20%	Public Inconvenience 10%	Total Score
Alternative 1-A: (Preferred) Cured-In-Place Pipe (CIPP) Lining	9	7	10	10	8.75
Alternative 1-B: Open Trench	2	10	2	1	4.25
Alternative 1-C: Pipe Bursting	1	7	1	2	2.95
Alternative 1-D: Segmented Sliplining	10	1	7	6	6.1

6.2.2 ALTERNATIVES Technologies Considered for Relief Pipe Construction

Relief Pipe Alternative 2-A, Microtunneling: In this alternative, underground pipes are installed by jacking the pipe behind a laser-guided microtunnel boring machine (MBTM). The system simultaneously installs the pipe as the spoils are excavated and removed. Open trenches would be limited driving and receiving shafts large enough to accommodate the MBTM jacking frame and pipe segments. This alternative was the least disruptive to traffic. It would require less temporary support of existing laterals and utilities than the preferred alternative. Additionally, this technology can be used at the Ala Naio channel crossing, eliminating the need of a separate construction methods at Ala Naio. Drilling fluids and spoils are captured in a closed-loop system limiting impact to the surrounding environment. While this method does limit open trench work, it works best in long straight stretches of pipe. An alignment change at three locations along Date Street will require the use of alternate technology due to inadequate space for driving and/or receiving shafts. The rating for constructability was low due to the large number of underground utilities, and limited number of local contractors with experience in the method. The constructability rating was further reduced because it has not been successfully used for tunneling through coral. The use of MBTM also limits observation of below grade activities, potentially impacting unknown cultural resources or artifacts. Microtunneling did not rate as high for site improvement as the preferred method because of reduced inspection capability of the pipe exterior after installation. Finally, while cost should never be the only factor in the technology choice, microtunneling is estimated to cost nearly four times as much as the preferred alternative.

Relief Pipe Alternative 2-B, Horizontal Directional Drilling (HDD): In this alternative, pipes are installed utilizing a steerable soil drilling system. Open trenches would be limited to the launching pit and at each manhole location. This system installs in a shorter time than the other alternatives, but will cause significant traffic disruption during pipe fusing activities. HDD will require the use of drilling fluids that can migrate laterally and vertically potentially impacting the surrounding environment. Additionally, some of the pipe installation will occur below the water table, which may increase migration of drilling fluids out of the construction area. Hard coral may also pose problem for this drilling method. Similar to microtunneling, visual inspection of substrate is limited. This may impact unknown below grade cultural and archaeological resources. This method earned the lowest rating for system improvement because it is unreliable when installing pipe with tight grade control tolerances, and post installation inspections of the line exterior is limited.

Relief Pipe Alternative 2-C, Open Trench with Pipe Jacking: In this alternative, a majority of the relief line will be installed utilizing traditional open trench technology. To provide adequate protection to Ala Naio Drainage Canal, open trench activities will stop a minimum of 10 feet from the canal wall. A tunneling technology called pipe jacking that simultaneously excavates and installs the sewer pipe will be used to install the relief pipe

MŌ'ILI'ILI-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

under the bottom of the canal bed so there will be no impediments to drainage in Ala Naio. The pipe jack technology incorporates a closed loop system to remove spoils a safe distance away from the channel to ensure no spoils are discharged to the area surrounding the pipe, eliminating inadvertent deposition of fill into the channel corridor. Additionally, the relief pipe will be installed nine feet below the bottom of the stream bed, to insure no impact to the hydraulic conductivity of the canal.

Of the three technologies assessed for relief pipe construction, Open Trench with Pipe Jacking received the highest score (8.65) in the assessment of cost, system improvement, constructability and public inconvenience. The combined scores for Microtunneling and Horizontal Directional Drilling were 4.85 and 4.5 respectively. The results of the assessment are summarized in Table 6-2.

Table 6-2 Rating Matrix for Construction Alternatives for Relief Pipe

Rating criteria (criteria weight)	Estimated Cost 35%	System Improvement 30%	Constructability 20%	Public Inconvenience 10%	Total Score
Alternative 2-A: Microtunneling	1	8	3	10	4.85
Alternative 2-B: Horizontal Directional Drilling	8	1	1	10	4.5
Alternative 2-C: (Preferred) <i>Open Trench with pipe jacking</i>	10	10	10	1	8.65

6.2.3 ALTERNATIVE Technologies Assessed for Manhole Rehabilitation

Alternative 3-A, 100% Solids Epoxy Coating System: Construction activities for manhole rehabilitation will include cleaning manholes, repair of invert/bench and walls followed by an epoxy coating to protect against corrosion. This system rated very high for system improvement, constructability and minimizing public inconvenience. The use of epoxy coating provides good corrosion resistance while improving the structural integrity of coated surface. The technology has been successfully utilized by in other manhole rehabilitation projects with very short duration impacts to traffic. Construction time is minimized because the coating can be applied to damp surfaces and cures underwater. This method does not generate excessive noise, dust or odors. This technology received a low rating for cost because it was nearly double that of the Cementious Coating system.

Alternative 3-B, Cementious Coating System: Construction activities for manhole rehabilitation will include cleaning manholes, repair of invert/bench and walls. The manhole surfaces are cleaned, sprayed with a cementious grout mixture and troweled smooth. The advantages to using this system are that it is the least expensive and the easiest/least complicated application procedure. Of the alternatives assessed, it also was

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

determined to impact traffic less than the other two methods. This method does not generate excessive noise, dust or odors. This technology received the lowest rating for system improvement. Cementitious coatings are only moderately resistant to corrosion, are porous and have a short expected lifespan. Frequent maintenance of this system will also be required.

Alternative 3-C, Glass Fiber-Reinforced Polyester (FRP) Manhole Liner: Construction activities for manhole rehabilitation will include excavation around existing manhole and removal of the cone. The liner is cut to fit and installed using a quickset or non-shrink grout with annular space filled with a flowable Portland cement. The advantage to this seamless construction technology is that it is the most resistant to corrosion, and has a very long life expectancy resulting in very high rating for system improvement. The method received the lowest rating for the remaining three criteria due to high estimated cost, the need for traffic diversion during rehabilitation activities, and during product curing (minimum of 2 days per manhole), increased dust and noise when compared to other technologies, and the need for very precise installation to withstand traffic load.

Of the three technologies assessed for relief pipe construction, Epoxy Coating received the highest score (7.8) in the assessment of cost, system improvement, constructability and public inconvenience. The combined scores for Cementitious Coating and FRP Manhole Liner were 6.9 and 3.7 respectively. The results of the assessment are summarized in Table 6-3.

Table 6-3 Rating Matrix for Construction Alternatives for Manhole Rehabilitation

Rating criteria (criteria weight)	Estimated Cost 35%	System Improvement 30%	Constructability 20%	Public Inconvenience 10%	Overall Score
Alternative 3-A: (Preferred) 100% Solids Epoxy Coating System	5	9	10	9	7.8
Alternative 3-B: Cementitious Coating System	10	1	8	10	6.9
Alternative 3-C: FRP Manhole Liner	1	10	1	1	3.7

Upon review of all alternatives, it was determined that Alternatives 1-A, 2-C, and 3-A would best satisfy the projects need to rehabilitate the sewer conveyance system based on the technology rating criteria of system improvement, constructability, public inconvenience and cost. The use 1-A, 2-C, and 3-A will limit open trench work to areas requiring visual inspection, provide necessary protection of waterways while utilizing proven technologies with high success rate in areas of similar site conditions. Impact to waterways, dust and noise generation will be reduced when compared to the alternatives.

7.0 FINDINGS, SUPPORTING REASONS, AND ANTICIPATED DETERMINATION

To determine whether the Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction may have a significant impact on the physical and human environment, all phases and expected consequences of the proposed project have been evaluated, including potential primary, secondary, short-range, long-range, and cumulative impacts. Based on this evaluation, the Approving Agency (The City and County of Honolulu, Department of Design and Construction) is expected to issue a Finding of No Significant Impact (FONSI) for the Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project. The supporting rationale for this anticipated finding is presented in this chapter.

7.1 PROBABLE IMPACT, INCLUDING CUMULATIVE IMPACTS

Cumulative impacts are impacts on the environment that result from the action when added to other past, present, and foreseeable future actions by other agencies or persons. As discussed throughout this document, this project is being proposed to address the requirements of the Consent Decree agreed upon by City, State and Federal officials. The long-term cumulative impact of this project include improved hydraulic conductivity of the wastewater conveyance system along Date Street, and reduction of risk associated with inflow and infiltration particularly during peak wet weather events. The anticipated cumulative impacts are beneficial.

Socio-economic impacts resulting from the proposed projects are anticipated to be beneficial. Wastewater pipe failures can expose the population to numerous pathogens. Construction of this project will reduce the risk of catastrophic pipe failure by rehabilitating existing pipes and increasing capacity where it is currently deemed inadequate, ultimately protecting the health of the population.

7.2 SIGNIFICANCE CRITERIA

Based upon the previous information presented in this document the proposed permitting and construction of the Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction will likely have no significant environmental impacts. This determination is based upon the Significance Criteria outlined in Chapter 343, HRS, as amended and Title 11 Chapter 200 HAR 1996, discussed below.

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

The project is located within the existing Date Street right of way, and will augment the existing utilities already in place. Based on the highly developed nature of the site, it is unlikely that any natural or cultural resources will be affected, lost or destroyed.

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

(2) *Curtails the range of beneficial uses of the environment;*

The Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction will not curtail the range of beneficial uses of the environment as the site is currently developed.

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

The Environmental Policies enumerated in Chapter 344, HRS promote conservation of natural resources, and an enhanced quality of life for all citizens. The proposed Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction will not significantly impact natural resources due to the fact that the site is already located within a developed road right-of-way.

(4) *Substantially affects the economic or social welfare of the community or State;*

The Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction will not substantially affect economic or social welfare directly. However, improvement to wastewater collection can improve public health, indirectly affecting the State economy.

(5) *Substantially affects public health;*

The project as proposed substantially affects public health through the improvement of the wastewater conveyance system in McCully, Mō'ili'ili and Kapahulu neighborhoods. These improvements benefit the public health by reducing the population's exposure to pathogens by safely transporting sewage.

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

The City anticipates no increase in population as a result of the Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction. The project is proposed to address needs at the current and planned enrollment levels.

(7) *Involves a substantial degradation of environmental quality;*

No substantial environmental degradation is anticipated. The preferred alternative was chosen to reduce the impact on the environment by limiting the amount of open-trench activities. The Mō'ili'ili-Kapahulu Sewer Rehabilitation Reconstruction project is designed to fulfill Consent Decree requirement for the wastewater conveyance system along Date Street. Fulfillment of the Consent Decree will improve environmental quality. The old sewer pipes are not as efficient at conveying sewer from domestic and industrial sources to waste water treatment facility for processing. Materials deposited onto the interior walls of the pipe impede flow and sometimes cause complete blockage. Pipes installed in sections eventually leak at the seams. These leaks can allow sewage to be released to the

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

environment, and water to infiltrate into the pipes during heavy rains potentially causing sewage overflow. By rehabilitating the existing sewer lines along Date Street, the proposed project will reduce the environmental impact of the existing sewer system by reducing leaks and improving flow. The installation of a relief line between Pumehana Street and Kapi'olani Boulevard will improve capacity to meet the current needs of the area and allow the City to respond quickly to upset conditions in the Mō'ili'ili, McCully areas by transferring the sewage load between the relief and main lines to allow for repairs. Quick response to upset conditions will reduce the risk of accidental release or backflow of untreated sewage from this segment of the system.

(8) *Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for larger actions;*

The proposed project may result in the disturbance of over one (1) acre of land area. Therefore, a National Pollutant Discharge Elimination System (NPDES) permit will be required. Best Management Practices (BMP) will be implemented to prevent pollution and protect the environment. Temporary erosion control measures will be installed prior to any demolition and/or construction activities. Structural BMPs to include silt fence at the downstream perimeter of the project site and sediment control filters at drain inlets. BMPs will be developed to mitigate impacts associated with stream crossing activities at the Ala Naio and the Mānoa-Pālolo canals.

The proposed action will not have any substantial negative secondary impacts on the environment. The Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction project is consistent with the City's General Plan and will not generate any additional actions having a cumulative effect on the environment.

(9) *Substantially affects a rare, threatened or endangered species or its habitat;*

The Mō'ili'ili-Kapahulu Rehabilitation project and Reconstruction is located within an existing public right-of-way. The site contains no habitat for rare, threatened or endangered plant or animal species listed by the U.S. Fish and Wildlife Service.

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

Air Quality: No State or Federal air quality standards will be violated during or after the renovation of Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction.

Water Quality: No State or Federal water quality standards will be violated during or after the renovation of Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction.

Ambient Noise Levels: Construction activities for the development of the property will inevitably create temporary noise impacts. The City's contractors may employ mitigation measures to minimize those temporary noise impacts including the use of mufflers and implementing construction curfew periods. Pursuant to Chapter 11-46,

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

Hawai'i Administrative Rules, the project activities will comply with all community noise controls. Operational noise generated will be properly permitted and insulated.

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

A portion of the project is located within the flood plain. However, due to the subterranean nature of the project, no substantial impacts are anticipated. Additionally, the project will reduce the risk of accidental release or backflow of untreated sewage from this segment of the conveyance system particularly during peak wet weather events (heavy rain). As such, the project will benefit the environmentally sensitive flood plains by ensuring adequate segregation of sewage from the environment.

- (12) ***Substantially affects scenic vistas and view planes identified in County or State plans or studies; or,***

No view planes or scenic vistas identified by the State or County will be impacted by proposed project as all final structures will be located entirely underground.

- (13) ***Requires substantial energy consumption.***

The proposed project will not substantially change the energy consumption, necessary to convey wastewater to the Sand Island treatment facility.

7.3 ANTICIPATED DETERMINATION

On the basis of impacts and mitigation measures examined in this document and analyzed under the above criteria, it is anticipated that the Mō'ili'ili-Kapahulu Rehabilitation and Reconstruction will not have a significant effect on the physical or human environments. Pursuant to Chapter 343, HRS, the approving agency, the City's Department of Design and Construction anticipates a Finding of No Significant Impact (FONSI).

MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION / RECONSTRUCTION
DEPARTMENT OF DESIGN AND CONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT

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Appendix A

Pre-consultation Comment Letters and Responses

LINDA LINGIE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

July 22, 2009

PBR Hawaii & Associates, Inc.
1001 Bishop Street
ASB Tower Suite 650
Honolulu, Hawaii 96813

Attention: Ms. Malia M. Cox

Ladies and Gentlemen:

Subject: Pre-Consultation for Proposed Mo'ilili-Kapahulu Sewer Rehabilitation-Reconstruction

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

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

Sincerely,

Charlene E. Uroste
for Morris M. Atta
Administrator

LINDA LINGIE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

July 2, 2009

MEMORANDUM

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

FROM: *for* Morris M. Atta *Charlene*
SUBJECT: Pre-Consultation for the Proposed Mo'ilili-Kapahulu Sewer Rehabilitation-Reconstruction
LOCATION: Island of Oahu
APPLICANT: PBR Hawaii & Associates, Inc. on behalf of Department of Design & Construction

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by July 20, 2009.

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

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *Carla T. O'Brien*
Date: 7/14/09

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ENGINEERING DIVISION

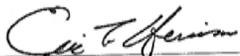
LD/MorrisAtta

Ref.: PreCon Moiliili Kapahulu Sewer Rehab
Oahu-702

COMMENTS

- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- (X) Please take note that based on the map that you provided the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zones X, AO, AE and AE Floodway (AEF). The National Flood Insurance Program does not regulate activities under Zone X, however, it does regulate developments within Zones AO, AE and AEF as indicated in bold letters below.
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- (X) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.
- Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:
- (X) Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
- () Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
- () Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
- () Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.
- () The applicant should include water demands and infrastructure required to meet project needs. Please note that projects within State lands requiring water service from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.
- () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.
- (X) **Additional Comments: Because portion this project is being conducted in a flood zone designated as AEF, strict adherence to the NFIP regulations, specifically 44CFR §60.3(d)(3), must be followed.**
- () Other: _____

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

Signed: 
ERIC T. HIRANO, CHIEF ENGINEER

Date: 7/14/09



September 23, 2009

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Executive Vice-President

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Principal

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1787 With Pk Loop, Suite 4
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2878

Mr. Eric T. Hirano, Chief Engineer
State of Hawaii
Department of Land and Natural Resources
Engineering Division
P.O. Box 621
Honolulu, Hawaii 96809

Attn: Ms. Suzie S. Agraan

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC) MŌ'IL'I-LI-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT

Dear Ms. Agraan

Thank you for your letter dated July 14, 2009 (your reference number PreCon Mō'ili'i Kapahulu Sewer Rehab Oahu-702). We offer the following response to your comments.

We acknowledge your assessment that the project is located in zones X, AO, AE and AEF as designated on the Flood Insurance Rate Map (FIRM). Details regarding the projects compliance with the rules and regulations of the National Flood Insurance Program (NFIP), as well as the more restrictive local flood ordinances described in Chapter 21, Article 9, Special District Regulation of the Revised Ordinance of Honolulu will be detailed within the Draft Environmental Assessment. The project proponent will request review and approval of project elements within the *Floodway District, Flood Fringe District, and General Floodplain District* from the Department of Planning and Permitting prior to the start of construction.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you have any questions regarding this project, please do not hesitate to contact me at (808) 521-5631.

Sincerely,



Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of Honolulu, Department of Design and Construction
Katherine Kealoha, Office of Environmental Quality Control

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LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 2, 2009

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

MEMORANDUM

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division - Oahu District

From: TO: *Handwritten arrow pointing from 'From' to 'TO'*

TO: ~~FROM~~ *Morris M. Atta*
 SUBJECT: Pre-Consultation for the Proposed Mo'ili'ili-Kapahulu Sewer Rehabilitation-Reconstruction
 LOCATION: Island of Oahu
 APPLICANT: PBR Hawaii & Associates, Inc. on behalf of Department of Design & Construction

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by July 20, 2009.

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

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*
Date: 7/17/09



September 23, 2009

PRINCIPALS

THOMAS S. WITTEN, ASLA
President

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Executive Vice-President

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Mr. Morris Atta
State of Hawaii
Department of Land and Natural Resources
Land Division
1151 Punchbowl Street, Room 220
Honolulu, Hawaii 96813

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC) MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Atta;

Thank you for the letter dated July 17, 2009. We acknowledge your review of the project and that the Land Division-Oahu District has no Objections to the project.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you need any additional information or have any questions regarding this project, please do not hesitate to contact me at (808) 521-5631

Sincerely,

Malia M. Cox

Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of Honolulu, Department of Design and Construction
Katherine Kealoha, Office of Environmental Quality Control

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LINDA LINGLE
GOVERNOR OF HAWAII



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

RECEIVED
LAND DIVISION

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 2, 2009

2009 JUL 2 9 AM 46
STATE OF HAWAII
DEPARTMENT OF LAND &
NATURAL RESOURCES
LAND DIVISION

RECEIVED
COMMISSION ON WATER
RESOURCE MANAGEMENT
2009 JUL -6 AM 9:17

MEMORANDUM

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

FROM: Morris M. Atta
SUBJECT: Pre-Consultation for the Proposed Mo'ili'ili-Kapahulu Sewer Rehabilitation-Reconstruction
LOCATION: Island of Oahu
APPLICANT: PBR Hawaii & Associates, Inc. on behalf of Department of Design & Construction

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by July 20, 2009.

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

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: Edwin T. Sakoda
Date: 7.7.09



September 23, 2009

PRINCIPALS

THOMAS S. WITTEN, ASLA
President

R. STAN DUNCAN, ASLA
Executive Vice-President

RUSSELL Y. L. CHUNG, FASLA
Executive Vice-President

VINCENT SHIGERUNI
Vice-President

GRANT T. MURAKAMI, AICP
Principal

CHAIRMAN EMERITUS

W. FRANK BRANDT, FASLA
Chairman Emeritus

ASSOCIATES

TOM SCHNELL, AICP
Senior Associate

RAYMOND T. HIGA, ASLA
Senior Associate

KEVIN K. NISHIKAWA, ASLA
Associate

KIMI MIKAMI YUEN, LEED-AP
Associate

SCOTT ALIKA ABRIGO
Associate

SCOTT MURAKAMI, ASLA, LEED-AP
Associate

DACHENG DONG, LEED-AP
Associate

HONOLULU OFFICE

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Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadming@pbrhawaii.com

HILO OFFICE

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Hilo, Hawaii 96720-4262
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Fax: (808) 961-4989

WAILUKU OFFICE

1787 Whi Pa Loop, Suite 4
Wailuku, Hawaii 96793-1271
Tel: (808) 242-2878

Laura H. Thielen, Chairperson
State of Hawai'i
Department of Land and Natural Resources
Commission on Water Resource Management (CWRM)
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

Attn: Edwin T Sakoda

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC) MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Sakoda;

Thank you for the response dated July 7, 2009. We acknowledge your review of the project and that the CWRM has no comments at this time.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you need any additional information or have any questions regarding this project, please do not hesitate to contact me at (808) 521-5631

Sincerely,
Malia M Cox
Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of Honolulu, Department of Design and Construction
Katherine Kealoha, Office of Environmental Quality Control

O:\Job26\2609.01 Moiliili-Kapahulu Sewer EA\Correspondence\Preconsult\ltrs mailed out\BL-03 Preconsult responses.doc



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT
FORT SHAFTER, HAWAII 96858-5440

August 4, 2009

Regulatory Branch

POH-2009-00227

Malia M. Cox
PBR Hawaii & Associates, Inc.
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, HI 96813-3484

Dear Ms. Cox:

This is in response to your June 29, 2009 letter, submitted on behalf of the City and County of Honolulu requesting a Department of the Army (DA) Jurisdictional Determination (JD) for the proposed Mo'ili'ili-Kapahulu Sewer Rehabilitation-Reconstruction along Date Street over the Ala Nao and Manoa-Palolo Drainage Canals located in Honolulu, Oahu, Hawaii.

Your proposed project was reviewed pursuant to Section 10 of the Rivers and Harbors Act of 1899 (Section 10) and Section 404 of the Clean Water Act (Section 404). Section 10 requires that a DA permit be obtained for certain structures or work in, above or below a navigable waters of the United States (U.S.), prior to conducting the work (33 U.S.C. 403). Navigable waters of the U.S. are those waters subject to the ebb and flow of the tide shoreward to the mean high water mark, and/or other waters identified as navigable by the Honolulu District. In addition, a Section 10 permit is required for structures or work outside this limit if they affect the course, location, or condition of the waterbody as to its navigable capacity.

Section 404 requires that a DA permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including wetlands, prior to conducting the work (33 U.S.C. 1344). For regulatory purposes, the U.S. Army Corps of Engineers (Corps) defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The area of Corps jurisdiction under Section 404 extends to the Mean Higher High Tide Line (MHHTL) or to the Ordinary High Water Mark (OHWM) for navigable waters other than the Pacific Ocean, and to the upland boundary of any adjacent wetlands. Projects involving discharges typically include placement of fill material for homes and landscaping, impoundments, causeways, road fills, dams and dikes, riprap, groins, breakwaters, revetments, beach nourishment, and utilities. Section 404 also regulates discharges of dredged material incidental to certain activities such as grading, mechanized landclearing, ditching or other excavation activity, and the installation of certain pile-supported structures.

- 2 -

The Ala Nao and Manoa-Palolo Canals are both considered navigable waters of the U.S. and therefore a Section 10 permit is required for any work in, under, or above each canal.

If you anticipate discharging any dredged or fill material in the association with the sewer reconstruction crossings of these canals, you will need to apply for and receive authorization from the Corps prior to starting such work. Likewise, any construction or other work waterward of the MHHTL will require prior Corps authorization. You may access our website at: <http://www.poh.usace.army.mil/EC-R/EC-R.htm> to download copies of the DA permit application materials that you will need to complete and submit to us in order to request authorization to perform any activities falling under the Corps' jurisdiction. As described in the application materials, you will need to include plan and cross-section view drawings of your proposed work in 8 1/2 x 11 inch format.

Our assertion of jurisdiction is based on our documentation that the proposed work will be waterward of the line on the shore reached by the OHWM or MHHTL of the drainage canals, which are subject to the ebb and flow of the tide of the Pacific Ocean, a navigable water of the United States.

This letter contains an approved JD for the property in question. If you object to this determination, you may request an Administrative Appeal under Corps regulations at 33 Code of Federal Regulations (CFR) Part 331. We have enclosed a Notification of Appeal Process and Request For Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the Corps' Pacific Ocean Division office at following address:

Thom Lichte, Appeals Review Officer
U.S. Army Corps of Engineers
Pacific Ocean Division, ATTN: CEPOD-PDC
Building 525
Fort Shafter, HI 96858-5440

In order for an RFA to be accepted by the Corps, the Corps must determine that the RFA is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division office within 60 days of the date of the RFA sheet. If you decide to submit an NAP/RFA form, it must be received at the above address by October 3, 2009. It is not necessary to submit an NAP/RFA form to the Division office if you do not object to the determination in this letter. You may contact Mr. Lichte at (808) 438-0397.

This jurisdiction determination is valid for a period of five (5) years from the date of this letter unless new information warrants revision of the delineation before the expiration date.

Thank you for giving us the opportunity to review this proposal and for your cooperation with our regulatory program. Please be advised you can provide comments on your experience with the Honolulu District Regulatory Branch by accessing our web-based customer survey form at <http://per2.nwp.usace.army.mil/survey.html>.

Should you have any questions, please contact Mr. Robert Deroche of this office at the above address or telephone 808-438-2039 (FAX: 808-438-4060) or by E-Mail at robert.d.deroche2@usacc.army.mil. Please refer to File No. POH-2009-00227 in all future communications with this office regarding this or other projects at this location.

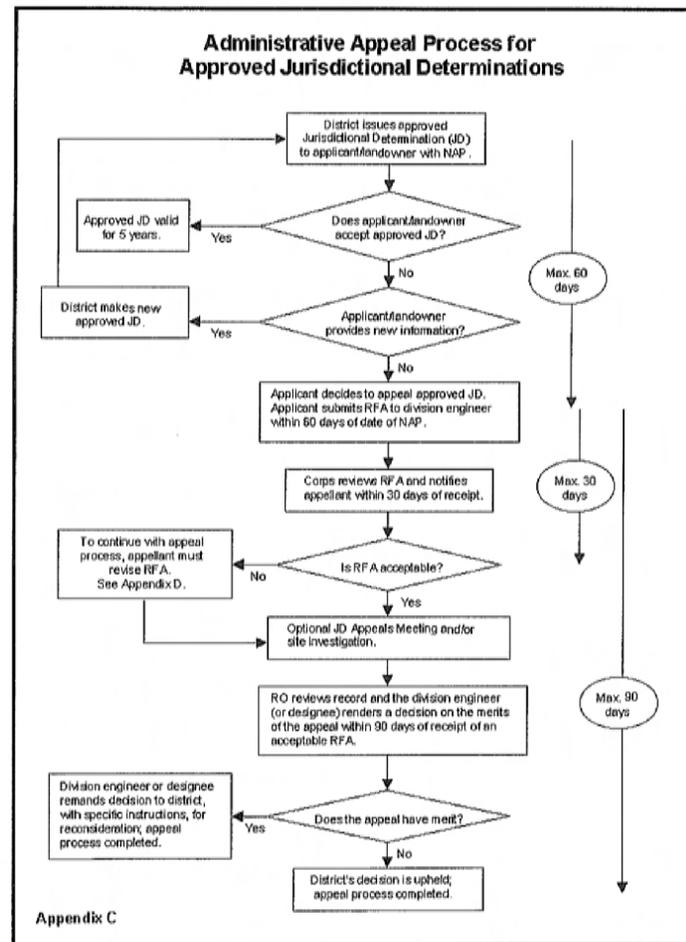
Sincerely,



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

Enclosures

Flowchart
RFA Document



NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: PBR Hawaii & Associates, Inc.	File Number: POH-2009-00227	Date: August 4, 2009
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
XX	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E
<p>SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/ceewo/reg or Corps regulations at 33 CFR Part 331.</p> <p>A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.</p> <ul style="list-style-type: none"> ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit. OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below. <p>B: PROFFERED PERMIT: You may accept or appeal the permit.</p> <ul style="list-style-type: none"> ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit. APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice. <p>C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.</p>		

<p>D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.</p> <ul style="list-style-type: none"> ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD. APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice. 					
<p>E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.</p>					
<p>SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT</p> <p>REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)</p> <p>ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.</p> <p>POINT OF CONTACT FOR QUESTIONS OR INFORMATION:</p> <table border="1"> <tr> <td> <p>If you have questions regarding this decision and/or the appeal process you may contact:</p> <p>Robert D. Deroche U.S. Army Corps of Engineers Honolulu District, Attn: CEPOH-EC-R Building 230 Ft. Shafter, Hawaii 96858-5440</p> <p>Tel (808) 438-2039</p> </td> <td> <p>If you only have questions regarding the appeal process you may also contact:</p> <p>Thom Lichte, Appeal Review Officer Pacific Ocean Division ATTN: CEPOD-PDC Building 525 Fort Shafter, HI 96858-5440</p> <p>Tel. (808) 438-0397</p> </td> </tr> </table>			<p>If you have questions regarding this decision and/or the appeal process you may contact:</p> <p>Robert D. Deroche U.S. Army Corps of Engineers Honolulu District, Attn: CEPOH-EC-R Building 230 Ft. Shafter, Hawaii 96858-5440</p> <p>Tel (808) 438-2039</p>	<p>If you only have questions regarding the appeal process you may also contact:</p> <p>Thom Lichte, Appeal Review Officer Pacific Ocean Division ATTN: CEPOD-PDC Building 525 Fort Shafter, HI 96858-5440</p> <p>Tel. (808) 438-0397</p>	
<p>If you have questions regarding this decision and/or the appeal process you may contact:</p> <p>Robert D. Deroche U.S. Army Corps of Engineers Honolulu District, Attn: CEPOH-EC-R Building 230 Ft. Shafter, Hawaii 96858-5440</p> <p>Tel (808) 438-2039</p>	<p>If you only have questions regarding the appeal process you may also contact:</p> <p>Thom Lichte, Appeal Review Officer Pacific Ocean Division ATTN: CEPOD-PDC Building 525 Fort Shafter, HI 96858-5440</p> <p>Tel. (808) 438-0397</p>				
<p>RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.</p> <table border="1"> <tr> <td> <p>_____</p> <p>Signature of appellant or agent.</p> </td> <td>Date:</td> <td>Telephone number:</td> </tr> </table>			<p>_____</p> <p>Signature of appellant or agent.</p>	Date:	Telephone number:
<p>_____</p> <p>Signature of appellant or agent.</p>	Date:	Telephone number:			

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): August 4, 2009

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: CEPOH-EC-R Mo'ili'ili-Kapahulu Suwer Rehabilitation-Reconstruction POH-2009-00227

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Date Street

State: Hawaii County/parish/borough: Oahu City: Waikiki
Center coordinates of site (lat/long in degree decimal format): Lat. 21.28477° N, Long. 157.82051° W
Universal Transverse Mercator:

Name of nearest waterbody: Manoa-Palolo Drainage Canal

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Ala Wai Canal (Pacific Ocean)

Name of watershed or Hydrologic Unit Code (HUC): 20060000

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date: August 4, 2009

Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: 50 linear feet: 50 width (ft) and/or acres.

Wetlands: acres.

c. Limits (boundaries) of jurisdiction based on: Established by mean (average) high waters.

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):³

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain:

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW: Ala Wai Canal.

Summarize rationale supporting determination: The Ala Wai Canal is a navigable tributary of the Pacific Ocean used by recreational boaters. The ebb and flow of the tide of the ocean extends up the Manoa-Palolo Drainage Canal.

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: Pick List

Drainage area: Pick List

Average annual rainfall: inches

Average annual snowfall: inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through Pick List tributaries before entering TNW.

Project waters are Pick List river miles from TNW.

Project waters are Pick List river miles from RPW.

Project waters are Pick List aerial (straight) miles from TNW.

Project waters are Pick List aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW⁵:

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known:

(b) **General Tributary Characteristics (check all that apply):**

Tributary is: Natural
 Artificial (man-made). Explain:
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet
Average depth: feet
Average side slopes: Pick List.

Primary tributary substrate composition (check all that apply):

Silts Sands Concrete
 Cobbles Gravel Muck
 Bedrock Vegetation. Type/% cover:
 Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: Pick List

Tributary gradient (approximate average slope): %

(c) **Flow:**

Tributary provides for: Pick List

Estimate average number of flow events in review area/year: Pick List

Describe flow regime:

Other information on duration and volume:

Surface flow is: Pick List. Characteristics:

Subsurface flow: Pick List. Explain findings:

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks
 OHWM⁶ (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list):

Discontinuous OHWM.⁷ Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

High Tide Line indicated by: Mean High Water Mark indicated by:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.
 tidal gauges
 other (list):

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

(iv) **Biological Characteristics. Channel supports (check all that apply):**

Riparian corridor. Characteristics (type, average width):
 Wetland fringe. Characteristics:
 Habitat for:
 Federally Listed species. Explain findings:
 Fish/spawn areas. Explain findings:
 Other environmentally-sensitive species. Explain findings:
 Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) **General Wetland Characteristics:**

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) **General Flow Relationship with Non-TNW:**

Flow is: Pick List. Explain:

Surface flow is: Pick List

Characteristics:

Subsurface flow: Pick List. Explain findings:

Dye (or other) test performed:

(c) **Wetland Adjacency Determination with Non-TNW:**

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain:

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) **Proximity (Relationship) to TNW**

Project wetlands are Pick List river miles from TNW.

Project waters are Pick List aerial (straight) miles from TNW.

Flow is from: Pick List.

Estimate approximate location of wetland as within the Pick List floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

Riparian buffer. Characteristics (type, average width):

Vegetation type/percent cover. Explain:

Habitat for:

Federally Listed species. Explain findings:

Fish/spawn areas. Explain findings:

Other environmentally-sensitive species. Explain findings:

Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: Pick List

Approximately () acres in total are being considered in the cumulative analysis.

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
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Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
 TNWs: linear feet width (ft), Or, acres.
 Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
 Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 - Other non-wetland waters: acres.
- Identify type(s) of waters:

3. Non-RPWs⁸ that flow directly or indirectly into TNWs.

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 - Other non-wetland waters: acres.
- Identify type(s) of waters:

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
- Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:
- Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or
- Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- which are or could be used for industrial purposes by industries in interstate commerce.
- Interstate isolated waters. Explain:
- Other factors. Explain:

Identify water body and summarize rationale supporting determination:

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following *Rapanos*.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): August 4, 2009

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: CEPOH-EC-R Mo'ili'i-Kapahulu Sewer Rehabilitation-Reconstruction POH-2009-00227

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Date Street

State: Hawaii County/parish/borough: Oahu City: Waikiki
Center coordinates of site (lat/long in degree decimal format): Lat. 21.2894° N, Long. 157.8257° W
Universal Transverse Mercator:

Name of nearest waterbody: Ala Nao Drainage Canal

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Ala Wai Canal (Pacific Ocean)
Name of watershed or Hydrologic Unit Code (HUC): 20060000

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date: August 4, 2009

Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: 50 linear feet: 50 width (ft) and/or acres.

Wetlands: acres.

c. Limits (boundaries) of jurisdiction based on: Established by mean (average) high waters.

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):³

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain:

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

Provide estimates for jurisdictional waters in the review area (check all that apply):

Tributary waters: linear feet width (ft).

Other non-wetland waters: acres.

Identify type(s) of waters:

Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.

Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.

Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).

Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:

Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

Non-wetland waters (i.e., rivers, streams): linear feet width (ft).

Lakes/ponds: acres.

Other non-wetland waters: acres. List type of aquatic resource:

Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).

Lakes/ponds: acres.

Other non-wetland waters: acres. List type of aquatic resource:

Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

Data sheets prepared/submitted by or on behalf of the applicant/consultant.

Office concurs with data sheets/delineation report.

Office does not concur with data sheets/delineation report.

Data sheets prepared by the Corps:

Corps navigable waters' study:

U.S. Geological Survey Hydrologic Atlas:

USGS NHD data.

USGS 8 and 12 digit HUC maps.

U.S. Geological Survey map(s). Cite scale & quad name: Waikiki.

USDA Natural Resources Conservation Service Soil Survey. Citation:

National wetlands inventory map(s). Cite name:

State/Local wetland inventory map(s):

FEMA/FIRM maps:

100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)

Photographs: Aerial (Name & Date): Google Photographs.

or Other (Name & Date):

Previous determination(s). File no. and date of response letter:

Applicable/supporting case law:

Applicable/supporting scientific literature:

Other information (please specify): Personal knowledge of site.

B. ADDITIONAL COMMENTS TO SUPPORT JD:

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: Ala Wai Canal.

Summarize rationale supporting determination: The Ala Wai Canal is a navigable tributary of the Pacific Ocean used by recreational boaters. The ebb and flow of the tide of the ocean extends up the Ala Nalo Drainage Canal.

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

- (i) **General Area Conditions:**
Watershed size: Pick List
Drainage area: Pick List
Average annual rainfall: inches
Average annual snowfall: inches

- (ii) **Physical Characteristics:**
(a) **Relationship with TNW:**
 Tributary flows directly into TNW.
 Tributary flows through Pick List tributaries before entering TNW.

Project waters are Pick List river miles from TNW.
Project waters are Pick List river miles from RPW.
Project waters are Pick List aerial (straight) miles from TNW.
Project waters are Pick List aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW⁵:

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known:

(b) **General Tributary Characteristics (check all that apply):**

- Tributary is: Natural
 Artificial (man-made). Explain:
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet
Average depth: feet
Average side slopes: Pick List .

Primary tributary substrate composition (check all that apply):

- | | | |
|--|--|-----------------------------------|
| <input type="checkbox"/> Silts | <input type="checkbox"/> Sands | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles | <input type="checkbox"/> Gravel | <input type="checkbox"/> Muck |
| <input type="checkbox"/> Bedrock | <input type="checkbox"/> Vegetation. Type/% cover: | |
| <input type="checkbox"/> Other. Explain: | | |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: Pick List

Tributary gradient (approximate average slope): %

(c) **Flow:**

Tributary provides for: Pick List

Estimate average number of flow events in review area/year: Pick List

Describe flow regime:

Other information on duration and volume:

Surface flow is: Pick List . Characteristics:

Subsurface flow: Pick List . Explain findings:

- Dye (or other) test performed:

Tributary has (check all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Bed and banks | |
| <input type="checkbox"/> OHWM ⁶ (check all indicators that apply): | |
| <input type="checkbox"/> clear, natural line impressed on the bank | <input type="checkbox"/> the presence of litter and debris |
| <input type="checkbox"/> changes in the character of soil | <input type="checkbox"/> destruction of terrestrial vegetation |
| <input type="checkbox"/> shelving | <input type="checkbox"/> the presence of wrack line |
| <input type="checkbox"/> vegetation matted down, bent, or absent | <input type="checkbox"/> sediment sorting |
| <input type="checkbox"/> leaf litter disturbed or washed away | <input type="checkbox"/> scour |
| <input type="checkbox"/> sediment deposition | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining | <input type="checkbox"/> abrupt change in plant community |
| <input type="checkbox"/> other (list): | |
| <input type="checkbox"/> Discontinuous OHWM. ⁷ Explain: | |

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

- | | |
|--|--|
| <input checked="" type="checkbox"/> High Tide Line indicated by: | <input checked="" type="checkbox"/> Mean High Water Mark indicated by: |
| <input type="checkbox"/> oil or scum line along shore objects | <input type="checkbox"/> survey to available datum; |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings; |
| <input type="checkbox"/> physical markings/characteristics | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges | |
| <input type="checkbox"/> other (list): | |

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

⁶ A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷ Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

- Wetland size: acres
- Wetland type. Explain:
- Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: Pick List. Explain:

Surface flow is: Pick List

Characteristics:

Subsurface flow: Pick List. Explain findings:

- Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

- Directly abutting
- Not directly abutting
 - Discrete wetland hydrologic connection. Explain:
 - Ecological connection. Explain:
 - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are Pick List river miles from TNW.

Project waters are Pick List aerial (straight) miles from TNW.

Flow is from: Pick List.

Estimate approximate location of wetland as within the Pick List floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: Pick List

Approximately () acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
-----------------------	-----------------	-----------------------	-----------------

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area:

- TNWs: linear feet width (ft), Or, acres.
- Wetlands adjacent to TNWs: acres.

2. RPWs that flow directly or indirectly into TNWs.

- Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
- Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters:

3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters:

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:
 Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.⁹**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
 Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰**

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 which are or could be used for industrial purposes by industries in interstate commerce.
 Interstate isolated waters. Explain:
 Other factors. Explain:

Identify water body and summarize rationale supporting determination:

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters:
 Wetlands: acres.

F. **NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
 Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
 Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
 Lakes/ponds: acres.
 Other non-wetland waters: acres. List type of aquatic resource:
 Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
 Lakes/ponds: acres.
 Other non-wetland waters: acres. List type of aquatic resource:
 Wetlands: acres.

SECTION IV: DATA SOURCES.

A. **SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant.
 Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 Office concurs with data sheets/delineation report.
 Office does not concur with data sheets/delineation report.
 Data sheets prepared by the Corps.
 Corps navigable waters' study:
 U.S. Geological Survey Hydrologic Atlas.
 USGS NHD data.
 USGS 8 and 12 digit HUC maps.
 U.S. Geological Survey map(s). Cite scale & quad name: Waikiki.
 USDA Natural Resources Conservation Service Soil Survey. Citation:
 National wetlands inventory map(s). Cite name:
 State/Local wetland inventory map(s):
 FEMA/FIRM maps:
 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
 Photographs: Aerial (Name & Date): Google Photographs.
or Other (Name & Date):
 Previous determination(s). File no. and date of response letter:
 Applicable/supporting case law:
 Applicable/supporting scientific literature:
 Other information (please specify): Personal knowledge of site.

B. **ADDITIONAL COMMENTS TO SUPPORT JD:**



September 23, 2009

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DACHENG DONG, LEED-AP
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Mr. George P. Young, P.E.
Chief, Regulatory Branch
Department of the Army
Regulatory Branch-CEPOH-EC-R
Building 230
Fort Shafter, Hawaii 96858-5440

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC) MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Young,

Thank you for your letter dated August 4, 2009 (reference number POH-2009-00227). We understand that the letter includes an approved Jurisdictional Determination for the property in question that is valid for five years, and if we object to this determination, we may request and appeal. We offer the following response to your comments.

We acknowledge your assessment that both the Ala Naio and Mānoa-Pālolo canals are considered navigable waters of the US and a Department of the Army permit is required pursuant to Section 10 of the Rivers and Harbors Act of 1899.

We acknowledge your assessment that discharge of dredged or fill material in association with the sewer reconstruction crossing of these canals will require authorization from the Department of the Army.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you have any questions regarding this project, please do not hesitate to contact me at (808) 521-5631.

Sincerely,

Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of Honolulu, Department of Design and Construction
Katherine Kealoha, Office of Environmental Quality Control

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DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov



July 24, 2009

MUFI HANNEMANN
MAYOR

CRAIG I. NISHIMURA, P.E.
DIRECTOR

COLLINS D. LAM, P.E.
DEPUTY DIRECTOR

Ms. Malia M. Cox
PBR Hawaii
ASB Tower, Suite 650
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Ms. Cox:

Subject: Pre-Consultation for the Proposed City and County Of Honolulu,
Department of Design and Construction (DDC) Moiliili- Kapahulu
Sewer Rehabilitation- Reconstruction, Honolulu Island of Oahu
Draft Environmental Assessment

Thank you for inviting us to review the above Draft Environmental Assessment
(DEA). The Department of Design and Construction does not have any comments to
offer at this time.

Should you have any questions, please contact Craig Nishimura, Director, at
768-8480.

Very truly yours,


Craig I. Nishimura, P.E.
Director

CN.pg(321566)



September 23, 2009

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Mr. Craig Nishimura, Director
City and County of Honolulu
Department of Design & Construction
650 South King Street
Honolulu, Hawaii 96813

**SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND
COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND
CONSTRUCTION (DDC) MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION-
RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT
ENVIRONMENTAL ASSESSMENT**

Dear Mr. Nishimura;

Thank you for your letter dated July 24, 2009 (your reference number CN.pg
(321566)). We acknowledge your assessment that the Department of Design
and Construction has no comments regarding the proposed project at this time.

Thank you again for your participation in the preparation of the upcoming
Environmental Assessment. If you have any questions regarding this project,
please do not hesitate to contact me at (808) 521-5631.

Sincerely,



Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of
Honolulu, Department of Design and Construction
Katherine Kealoha, Office of Environmental Quality Control

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DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

660 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 523-4730 • Internet: www.honolulu.gov

MUFI HANNEMANN
MAYOR



WAYNE YOSHIOKA
DIRECTOR

SHARON ANN THOM
DEPUTY DIRECTOR

July 22, 2009

TP7/09-321733R

Ms. Malia M. Cox
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cox:

Subject: Moiliili-Kapahulu Sewer Rehabilitation Pre-Assessment Consultation

This responds to your letter of June 29, 2009, requesting consultation and comments in preparing an Environmental Assessment for the subject project.

Since the project will affect bus routes, bus stops, and para-transit operations, the Contractor shall notify the Department of Transportation Services, Public Transit Division at 768-8396 and Oahu Transit Services, Inc. (bus operations: 848-4578 or 848-6016 and para-transit operations: 454-5041 or 454-5020) of the scope of work, location, proposed closure of any street, traffic lane, sidewalk, or bus stop and duration of project at least two weeks prior to construction.

We recommend that the draft environmental assessment include a traffic plan for construction that should include provisions for detours if there will be road closures as well as access to private driveways. We suggest that trench work be scheduled to have minimal impact on traffic (i.e. at night) and that traffic control plans be provided. Prior to any street or construction work, the applicant must obtain a street usage permit from this department.

Very truly yours,

WAYNE Y. YOSHIOKA
Director

cc: Office of Environmental Quality Control



September 23, 2009

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Mr. Wayne Yoshioka, Director
City and County of Honolulu
Department of Transportation Services
650 South King Street, 3rd Floor
Honolulu, Hawaii 96813

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC) MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Yoshioka;

Thank you for your letter dated July 22, 2009 (your reference number TP7/09-321733R). We acknowledge your assessment that the project will affect bus routes, bus stops and para-transit operations. The project proponent will coordinate with the Public Transit Division and O'ahu Transit Services, Inc regarding street, traffic lane, sidewalk or bus stop closures at least two weeks prior to construction.

We further acknowledge your recommendation to include a construction traffic plan in the Draft Environmental Assessment. The Draft Environmental Assessment will include provisions to minimize impacts to traffic and private driveway access. The project proponent will limit detours and conduct trench work activities in such a manner to minimize public inconvenience.

The project proponent will obtain all required usage permits from the Department of Transportation Services prior to beginning construction activities.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you have any questions regarding this project, please do not hesitate to contact me at (808) 521-5631.

Sincerely,

Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of Honolulu, Department of Design and Construction
Katherine Kealoha, Office of Environmental Quality Control

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HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

MUFI HANNEMANN
MAYOR



July 17, 2009

Ms. Malia Cox
Environmental Planner
PBR Hawaii & Associates, Inc.
American Savings Bank Tower
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cox:

Subject: Draft Environmental Assessment
Moiiliili-Kapahulu Sewer Rehabilitation-Reconstruction
Honolulu, Oahu, Hawaii

In response to your letter dated June 29, 2009, regarding the above-mentioned subject, the Honolulu Fire Department reviewed the material provided and determined that there would be no significant impact to services provided by the fire department.

Should you have any questions, please call Battalion Chief Socrates Bratakos of our Fire Prevention Bureau at 723-7151.

Sincerely,

KENNETH G. SILVA
Fire Chief

KGS/SY:bh

KENNETH G. SILVA
FIRE CHIEF

ALVIN K. TOMITA
DEPUTY FIRE CHIEF



September 23, 2009

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Associate

DACHENG DONG, LEED-AP
Associate

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Tel: (808) 242-2878

Mr. Kenneth G. Silva, Fire Chief
City and County of Honolulu
Fire Department
636 South Street
Honolulu, Hawaii 96813

Attn: Battalion Chief Socrates Bratakos

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC) MŌ'IL'I'ILI-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT

Dear Chief Bratakos:

Thank you for the letter dated July 17, 2009 (your reference number KGS/SY:bh). We acknowledge your assessment that the project should have no significant impact on the services provided by the Fire Department.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you need any additional information or have any questions regarding this project, please do not hesitate to contact me at (808) 521-5631.

Sincerely,

Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of Honolulu, Department of Design and Construction
Katherine Kealoha, Office of Environmental Quality Control

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POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET - HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 • INTERNET: www.honolulu-pd.org



July 7, 2009

BOISSE P. CORREA
CHIEF

PAUL D. PUTZUEH
KARLA A. GODSEY
DEPUTY CHIEFS

MOSI HANNELMANN
MAYOR

OUR REFERENCE BS-DK

Ms. Malia Cox
Environmental Planner
PBR Hawaii & Associates, Inc.
ASB Tower, Suite 650
1001 Bishop Street
Honolulu, Hawaii 96813-3484

Dear Ms. Cox:

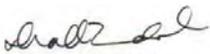
This is in response to your letter of June 29, 2009, requesting comments on a Pre-Consultation, Draft Environmental Assessment, for the proposed City Department of Design and Construction's Moiliili-Kapahulu Sewer Rehabilitation-Reconstruction project.

This project should have no adverse impact on the facilities or operations of the Honolulu Police Department.

If there are any questions, please call Major Robert Green of District 7 at 529-3362 or Mr. Brandon Stone of the Executive Bureau at 529-3644.

Sincerely,

BOISSE P. CORREA
Chief of Police

By 
DEBORA A. TANDALL
Assistant Chief of Police
Support Services Bureau

Serving and Protecting With Aloha



September 23, 2009

PRINCIPALS

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SCOTT MURAKAMI, ASLA, LEED-AP
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Tel: (808) 242-2878

Mr. Boisse P. Correa, Police Chief
City and County of Honolulu
Police Department
801 South Beretania Street
Honolulu, Hawaii 96813

Attn: Major Robert Green

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC) MŌ'IL'I-MĪLI-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT

Dear Major Green;

Thank you for the letter dated July 7, 2009 (reference number BS-DK). We acknowledge your assessment that the project should have no significant impact on the facilities or operations of the Honolulu Police Department.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you need any additional information or have any questions regarding this project, please do not hesitate to contact me at (808) 521-5631.

Sincerely,

Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of Honolulu, Department of Design and Construction
Katherine Kealoha, Office of Environmental Quality Control

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PHONE (808) 594-1888



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

FAX (808) 594-1865

HRD09/4544

July 23, 2009

Malia Cox
PBR Hawaii & Associates, Inc.
1001 Bishop Street,
ABS Tower, Suite 650
Honolulu, Hawaii 96813-3484

RE: Request for pre-consultation comments on the proposed City and County sewer rehabilitation, Mō'ili'ili, O'ahu.

Aloha e Malia Cox,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated June 29, 2009. OHA has reviewed the project and offers the following comments.

OHA is naturally sad to hear that this necessary work was brought about in order to partially satisfy a consent decree due to federal and state violations of the Clean Water Act. In terms of the proposed work, we do see that there will be some ground disturbance and as such we ask that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division shall be contacted.

We do appreciate the use of the Hawaiian diacriticals in the place name as seen in the invitation to comment.

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold by phone at (808) 594-0263 or e-mail him at granta@oha.org.

'O wau iho nō me ka 'oia'i'o,

Clyde W. Nāmu'o
Administrator



September 23, 2009

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Executive Vice-President

RUSSELL Y. L. CHUNG, FASLA
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SCOTT ALIKA ABRIGO
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SCOTT MURAKAMI, ASLA, LEED-AP
Associate

DACHENG DONG, LEED-AP
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1787 Wili Pa Loop, Suite 4
Wailuku, Hawaii 96793-1271
Tel: (808) 242-2878

Mr. Clyde Nāmu'o
Administrator
Office Of Hawaiian Affairs
711 Kapi'olani Blvd., Suite 1250
Honolulu, Hawaii 96813

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC) MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Nāmu'o;

Thank you for the response dated July 23, 2009. We acknowledge your response with regard to the consent decree, and want to assure you that the City and County of Honolulu's Department of Environmental Services, Treatment and Disposal Division is committed to excellence with the vision, "Be internationally recognized as a leader in wastewater pumping and treatment. Be known for innovative and efficient approaches to the pumping and treatment of wastewater and for absolute dedication to protection of the environment and public health." This commitment is evident in the methods proposed in the project (utilizing trenchless technologies for rehabilitation activities, reducing ground disturbance).

We acknowledge your assessment that the project will require some ground disturbance. The project proponent has been in contact with the State Historic Preservation Division (SHPD), and will follow their recommendations as required. According to SHPD, it is unlikely that the proposed project will affect historic properties due to previous grubbing/grading and residential development/urbanization. However, should the inadvertent discovery of historic resources including iwi occur during construction, all work in the immediate area of the find will cease and SHPD will be notified.

Thank you for recognizing our commitment to the correct and accurate usage of ka 'ōlelo Hawai'i. We welcome your comments should you notice inconsistent or inaccurate usage of diacritical markings or the Hawaiian language in general.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you need any additional information or have any questions regarding this project, please do not hesitate to contact me at (808) 521-5631

MR. CLYDE NĀMU'Ō
SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF
DESIGN AND CONSTRUCTION (DDC) MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION,
HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT
September 23, 2009
Page 2

Sincerely,



Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of
Honolulu, Department of Design and Construction
Katherine Kealoha, Office of Environmental Quality Control

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

August 26, 2009

Ms. Malia Cox, Environmental Planner
PBR Hawaii
1001 Bishop Street, Suite 650
Honolulu, Hawaii'i 96813

LOG NO: 2009.3742
DOC NO: 0908NM48

Dear Ms. Cox:

**SUBJECT: National Historic Preservation Act – Section 106 Review –
Ward Avenue Realignment at Kapiolani Blvd (DOT)
Honolulu, O'ahu, Hawai'i
TMK: (1) 2-1-049: 80; 2-1-44: 32; 2-3-008: 001; 2-3-008: 002; 2-3-003: 73**

Thank you for the opportunity to review this construction project which we received on August 13, 2009.

We determine that there will be **no historic properties affected** by this project because:

- Intensive cultivation has altered the land
- Residential development/urbanization has altered the land
- Previous grubbing/grading has altered the land
- An accepted archaeological inventory survey (AIS) found no historic properties
- SHPD previously reviewed this project and mitigation has been completed
- Other: *There are no known historic properties in the area. We have concerns that the subsurface work without oversight on historic properties or burials. We recommend that with the condition of this permit that an archaeological monitor be present during all ground disturbing activities in order to mitigate any historic properties which may be adversely affected by this project.*

In the event that historic resources, including human skeletal remains, are identified during the construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance and please contact the State Historic Preservation Division at (808) 692-8015.

Aloha,

Nancy A. McMahon (Deputy SHPO)
Archaeology and Historic Preservation Manager

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

RUSSELL Y. TROUB
DIRECTOR

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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BOATING AND OCEAN RECREATION
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KAHOOLAWE ISLAND RESERVE COMMISSIONER
LAND
STATE PARKS



September 23, 2009

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Tel: (808) 242-2878

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

Attn: Ms. Nancy McMahon

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC) MŌ'ILĪLI-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT

Dear Ms. McMahon;

Thank you for the response dated July 15, 2009. We acknowledge your review that it is unlikely for proposed project to have an affect on historic properties due to previous grubbing/grading and residential development/urbanization. However, should the inadvertent discovery of historic resources and/or human skeletal remains occur during construction, all work in the immediate area of the find will cease and the State Historic Preservation Division (SHPD) will be notified.

To address the Division's concern regarding the lack of oversight during initial construction of the sewer line in the 1940's, an archaeological monitor will be present during ground disturbing activities.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you need any additional information or have any questions regarding this project, please do not hesitate to contact me at (808) 521-5631

Sincerely,

Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of Honolulu, Department of Design and Construction
Katherine Kealoha, Office of Environmental Quality Control

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DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

MUFI HANNEMANN
MAYOR



July 24, 2009

JEFFREY S. CUDIAMAT, P.E.
DIRECTOR AND CHIEF ENGINEER
GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 09-735

Ms. Malia M. Cox
PBR Hawaii and Associates, Inc.
1001 Bishop Street
ABS Tower, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cox:

Subject: Pre-Consultation for Draft Environmental Assessment (DEA)
for the Moiliili-Kapahulu Sewer Rehabilitation-Reconstruction

Thank you for the opportunity to provide comments on the subject DEA.

The City has the entire length of Date Street programmed to be resurfaced in early 2010. We request information regarding the construction schedule for the sewer rehabilitation-reconstruction project to determine its impact on the proposed roadway resurfacing.

We support the cured-in-place pipe (CIPP) lining method for rehabilitating existing sewer lines. To lessen the impact on project roadways, we request that open trench construction be kept to a minimum and utilize only where less destructive methods may not be feasible.

A problem inherent with open trench construction is adequate compaction of the backfill. Therefore, we request that flowable fill or Controlled Low Strength Material (CLSM) be evaluated and/or considered for use as backfill material in the DEA.

Should you have any questions, please call Charles Pignataro of the Division of Road Maintenance, at 768-3697.

Sincerely,

Jeffrey S. Cudiamat, P.E.
Director and Chief Engineer



September 23, 2009

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Mr. Jeffrey S. Cudiamat, P.E. Acting Director & Chief Engineer
City & County Of Honolulu
Dept of Facility Maintenance
1000 Uluohia Street, Suite 215
Kapolei, Hawaii 96707

Attn: Mr. Jeffrey S. Cudiamat

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC) MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Cudiamat:

Thank you for the response dated July 24, 2009. We appreciate you providing information regarding the city resurfacing program scheduled for 2010. Every effort will be made to complete the proposed project prior to the City's Date Street Resurfacing project. The project proponent has been notified and will coordinate with Mr. Charles Pignataro of the Division of Road Maintenance.

We acknowledge your request to utilize open trench construction only where less destructive methods may not be feasible. Several alternatives were evaluated and tested for feasibility by Akinaka and Associates, Ltd. The evaluation will be included in the Draft Environmental Assessment. Alternatives to open trench construction will be utilized where feasible.

We acknowledge your concern with regard to the compaction of the backfill. The use of Controlled Low Strength Material (CLSM or flowable fill) has the potential to provide adequate load bearing properties without compaction. The project proponent and their engineering team have been informed of your request to evaluate the use of flowable fill instead of traditional backfill. A discussion will be included in the Draft Environmental Assessment.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you need any additional information or have any questions regarding this project, please do not hesitate to contact me at (808) 521-5631

Sincerely,

Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of Honolulu,
Department of Design and Construction
Katherine Kealoha, Office of Environmental Quality Control

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McCULLY/MOILIILI NEIGHBORHOOD BOARD NO. 8

c/o NEIGHBORHOOD COMMISSION • 530 SOUTH KING STREET ROOM 408 • HONOLULU, HAWAII,
96813
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET: <http://www.honolulu.gov>

11 August 2009

PBR & Associates
1001 Bishop Street
ASB Tower, #650
Honolulu, HI 96813-3484

ATTN: Malia Cox, Environmental Planner

Dear Ms. Cox,

Mahalo for your letter of 29 June, re: *Pre-consultation ... Mo'ili'ili – Kapahulu Sewer Rehabilitation-Reconstruction*. I received this letter on 30 July. The delay is due to the letter being sent to the Neighborhood Board Office at Honolulu Hale. I gave you my home address when we spoke on the telephone.

With this information in hand, please note Neighborhood Board No. 8 missed your 24 July deadline for comments on projects, plans, etc. It was a pleasure speaking with you on 7 August and hearing that I can still submit comments and respond. Mahalo and let me begin.

At our 6 August neighborhood board meeting, the very first comment was by a Date-Laau resident seeing a conspiracy. Explanation: The 5.5 acres of Date-Laau was purchased, in June, by Iolani School. The leases for 250+ apt/condo owners/renters expire in December 2012 and Iolani is not going to renew these leases. Mayor Hannemann, being an Iolani graduate therefore worked up this project the benefit Iolani School. I'm just reporting what I heard.

As your letter mentioned, this project will impact two (2) major intersections and two (2) drainage/stream canals. It will also impact two (2) elementary schools – Lunaliilo & Ala Wai; Kaimuki High and Iolani Schools. The impact of this project on the schools needs to be looked at in terms of what we in the neighborhood call, "transient traffic". We define transient traffic as the extra vehicles entering into/exiting a specific area at specific times. For Lunaliilo Elem. School, at Pumehana, Fern & McCully, this would be 300 vehicles daily for school drop off (7:00 – 8:15 a.m.) and pick



Oahu's Neighborhood Board system – Established 1973

McCully-Mo'ili'ili Neighborhood Board No. 8
PBR Letter
Page 2

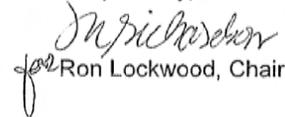
up (1:30 p.m. to 3:00 p.m.). Ala Wai Elem. School & Iolani School are adjacent, therefore Ala Wai's 250+ vehicles and Iolani's 900 vehicles should be counted together. Kaimuki High has 500 vehicles per day for transient traffic. While I have no traffic studies to confirm these numbers, I base this on school populations, G.E. exemptions, grade levels, staff size and students able to drive.

Other transient traffic needing consideration would include Wahine Volleyball, and UH Men's Basketball & Volleyball. These sporting events generate an additional 4,000 vehicles/ event along Kapiolani, University and Date Street. Iolani's Basketball Tournaments, basketball games & track & field also need further consideration.

These are our immediate / initial concerns on issues that may impact your project. Please note where this letter began, Iolani School now owns the 5.5 acres along the Date-Laau corridor. What their plans are in terms of expanding the campus, and when, you will need their input. If not already received from Iolani, please contact Glenn Ching (943 – 2209).

I would respectfully ask for future mail outs to please be sent to my home address: 918 University Avenue # B204, Honolulu, HI 96826

Respectfully,


for Ron Lockwood, Chair



September 23, 2009

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President

R. STAN DUNCAN, ASLA
Executive Vice-President

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Mr. Ron Lockwood
Neighborhood Board Chair
918 University Avenue, # B204
Honolulu, Hawaii 96826

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION (DDC) MŌ'ILĪ'ILĪ-KAPAHULU SEWER REHABILITATION-RECONSTRUCTION, HONOLULU, ISLAND OF O'AHU DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Lockwood;

Thank you for the response dated August 11, 2009. We appreciate you providing information regarding the concerns voiced by constituents during the August Neighborhood Board Meeting.

We have updated your mailing address as indicated in your letter. We apologize for the inconvenience caused by the pre-consultation letter being sent to the Neighborhood Board Office.

We acknowledge your concern regarding transient traffic generated by sporting events held at the University of Hawai'i (UH) and 'Iolani Schools; and as students and staff of Lunalilo Elementary, Ala Wai Elementary, Kaimuki High, and 'Iolani Schools arrive and leave their respective schools. The project proponent (DDC) has been advised to review the UH sporting events schedule as well as these school's schedules as the project schedule is being developed. When possible, DDC will limit activities during peak transient traffic periods.

We acknowledge your request that Glenn Ching of 'Iolani School be contacted. We will notify 'Iolani School of the proposed project.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you need any additional information or have any questions regarding this project, please do not hesitate to contact me at (808) 521-5631.

Sincerely,

Malia M. Cox
Environmental Planner

cc: Mr. Mathew Fujioka, Akinaka & Associates, Ltd
Mr. Jay Hamai, Assistant Chief of the Wastewater Division, City and County of Honolulu,
Department of Design and Construction
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