Department of Environmental Services
City & County of Honolulu

Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan Phase 1 Area

Oahu, Hawaii

Final Environmental Assessment/ Environmental Impact Statement Preparation Notice (FEA/EISPN)

July 2010

AECOM

Final Environmental Assessment/ Environmental Impact Statement Preparation Notice

Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan

Phase 1 Area

Oahu, Hawaii

Prepared for:

Department of Environmental Services
City and County of Honolulu

Prepared by:

AECOM
1001 Bishop Street, Suite 1600
Honolulu, HI 96813

AECOM

July 2010

EXECUTIVE SUMMARY

The City and County of Honolulu (CITY) Department of Environmental Services (ENV) is in the process of preparing the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan (Honouliuli Fac Plan), which is an update to the *West Mamala Bay Facilities Plan* (2001) for the Honouliuli Sewershed. The Honouliuli Sewershed encompasses the areas from which current wastewater flows into the Honouliuli Wastewater Treatment Plant (Honouliuli WWTP) including Halawa, Aiea, Pearl City, Waipio, Waikele, Waipahu, Ewa, Kapolei and Mililani. The U.S. Navy facilities at Pearl Harbor and Campbell Industrial Park are excluded, as their wastewater flows into private wastewater treatment plants (WWTPs).

This project will focus on upgrades to and/or expansion of the major conveyance system to the Honouliuli WWTP, which has been referred to as the East Interceptor in the *West Mamala Bay Facilities Plan,* and the Honouliuli WWTP (collectively referred to as the Phase I Area in this Final Environmental Assessment/ Environmental Impact Statement Preparation Notice (FEA/EISPN)). The Phase I Area facilities include the Halawa, Waimalu, Pearl City and Waipahu Wastewater Pump Stations (WWPSs) and the Honouliuli WWTP.

The *West Mamala Bay Facilities Plan* will be updated with a focus on emerging technology for constructing Gravity Sewer Tunnel (GST) systems for conveyance and storage of wastewater flows. The planning effort will go further into the development of design concepts for the Preliminary Engineering Report (PER) aimed at minimizing sanitary sewer overflows, to comply with regulatory mandates from the State of Hawaii Department of Health (DOH), and the United States Environmental Protection Agency (EPA) and to meet the future needs for wastewater management.

Recommendations from the *West Mamala Bay Facilities Plan*, *Sewer Rehabilitation and Infiltration & Inflow Minimization Study* (*I/I Study*), and *Final Sewer Infiltration and Inflow Plan* (*Final Sewer I/I Plan*) will be reviewed and updated. The alternatives being considered and assessed in this FEA/EISPN include, but are not limited to:

- Additional gravity sewers (relief sewers)
- Peak flow storage tanks at pump stations
- Increased and additional pump station force mains
- Pump station capacity expansions, modifications, and relocations
- GST to replace some pump stations and provide peak flow storage
- Upgrade and expansion of the wastewater treatment plant to secondary treatment

The project planning period includes:

- 2030 population projection for upgrade and expansion of existing facilities
- 150 year life for the GST and corresponding population projection
- 30 year design life for pump stations and force mains
- 20 year life for mechanical equipment
- Year 2040 for the economic analysis

The Phase II Area includes the remainder of the collection system in the Honouliuli Sewershed. The *I/I Study* and *Final Sewer I/I Plan* have identified deficiencies and recommended Capital Improvement Program (CIP) projects to address these deficiencies in the Honouliuli Sewershed. In addition, there is an ongoing *Sewer I/I Assessment and Rehabilitation Project* which may identify additional deficiencies and recommend additional CIP projects. Proposed projects within

the Phase II Area are not included/assessed in this FEA/ESIPN and will be the subject of future reviews.

Implementation of this project triggers the Hawaii Revised Statutes (HRS) Chapter 343, the Environmental Impact Statement (EIS) law because of the use of county lands or funds, possible use of land classified as a conservation district by the state land use commission, possible work within the shoreline setback and it involves upgrading the wastewater treatment at the Honouliuli WWTP. The decision to prepare an EIS was made because some potential impacts to the environment associated with construction and operation of the proposed facilities may be significant. Federal funding is not anticipated for this project. However, the potential need for federal action will be evaluated in the EIS to determine if National Environmental Policy Act (NEPA) compliance is required.

The proposing and accepting agency for this project is ENV. This FEA/EISPN will be submitted to the Office of Environmental Quality Control (OEQC) for publication in the *Environmental Notice* and will be available to the public in addition to various Federal, State and CITY agencies. The intent of this FEA/EISPN is to notify interested parties of the facilities plan update and the potential impacts and mitigation measures for these alternatives and to solicit comments from stakeholders including government agencies, community organizations, private businesses and the general public.

Following the FEA/EISPN, a draft Environmental Impact Statement (DEIS) and Final Environmental Impact Statement (FEIS) will be prepared to assess the overall environmental impacts of the recommended alternative. The DEIS and FEIS will be prepared in compliance with the HRS Chapter 343. As part of the environmental process, there will be a 45-day review and comment period and informational meetings after the publication of the DEIS. An FEIS will be prepared after the comment period. The environmental process is estimated to take approximately two years.

This FEA/EISPN identifies and discloses potential environmental impacts the alternative(s) may have on:

- Climate
- Physical Environment
- Topography and Geology
- Soils
- Hydrological Conditions
- Ground Water
- Surface Water
- Coastal Water
- Flood Hazard
- Natural Hazards
- Earthquakes
- Hurricanes
- Tsunamis
- Air Quality
- Noise
- Biological Resources
- Flora
- Fauna
- Wetlands

- Archaeological, Historic and Cultural Resources
- Visual Aesthetics
- Socio-Economic Environment
- Population
- Industrial Activities
- Public Infrastructure and Utilities
- Traffic
- Water
- Wastewater
- Solid Waste Disposal
- Electrical and Communications
- Gas
- Public Services
- Schools
- Parks and Recreational Areas

In the process of preparing this FEA/EISPN, various stakeholders and residents were consulted and notified of this project from meetings and pre-assessment letters. Following this FEA/EISPN, additional meetings will be held to answer any questions the public may have or comments on the FEA/EISPN. The locations of these meetings will be accessible to the public including people with disabilities.

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PROJECT SUMMARY

Project Name:	Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Phase I Area
Proposing Agency:	City and County of Honolulu (CITY) – Department of Environmental Services (ENV)
Accepting Authority	City and County of Honolulu – Department of Environmental Services
Tax Map Keys (TMKs)	Honouliuli Wastewater Treatment Plant (Honouliuli WWTP): 9-1-013:007 Wastewater Pump Stations (WWPS): Ewa Beach WWPS: 9-1-009:112, Ewa Gentry WWPS: 9-1-103:001, Halawa WWPS: 9-9-003:062, Kunia WWPS: 9-4-049:047, Makakilo City WWPS: 9-2-017:001, Mililani WWPS: 9-4-141:086, Pacific Palisades WWPS: 9-7-091:071, Pearl City WWPS: 9-7-016:028, Waiawa Industrial Park WWPS: 9-6-004:005, Waimalu WWPS 9-8-007:008, Waipahu WWPS: 9-3-002:009, Waipio WWPS: 9-5-001:033, West Beach Resort #1 WWPS: 9-1-057:028, West Beach Resort #2 WWPS: 9-1-057:022 West Loch Estates WWPS: 9-1-017:006, and West Loch Fairways WWPS: 9-1-063:113 Alternatives: Honouliuli WWTP Expansion Site: 9-1-069:003 Halawa WWPS New WWPS Site: 9-9-003:061 Pearl City WWPS Relocation Site: 9-7-016:001 or 9-7-017:002 Waimalu WWPS Storage Site: 9-8-007:008 Waimalu WWPS New WWPS Site: 9-8-007:008 Waipahu WWPS New WWPS Site: 9-3-002:009
Location	Ewa, Central and a portion of the Primary Urban Center Districts, Oahu, Hawaii
Project Area	The Honouliuli Sewershed includes areas with current wastewater flows to the Honouliuli Wastewater Treatment Plant as well as potential future flows from areas including but not limited to Halawa, Aiea, Pearl City, Waipio, Waikele, Waipahu, Ewa, Kapolei, and Mililani. This project will focus on the Phase I Area, which consists of the major conveyance system including the Halawa, Waimalu, Pearl City and Waipahu WWPSs to the Honouliuli WWTP (referred to as the East Interceptor in the *West Mamala Bay Facilities Plan*) and the Honouliuli WWTP. In this final environmental assessment/environmental impact statement preparation notice (FEA/EISPN) the project area includes the Phase I Area and the area along the proposed gravity sewer tunnel (GST) alignments, additional force main alignments, and relief sewer.
Project Description	The City and County of Honolulu is updating their *West Mamala Bay Facilities Plan.* The evaluation of major conveyance facilities and the Honouliuli WWTP is addressed in Phase I. This FEA/EISPN for Phase I is intended to inform the public and various stakeholders of potential environmental impacts the project may have on the environment and of the upcoming preparation of an environmental impact statement (EIS) which will be prepared in accordance with the Hawaii Revised Statutes Chapter 343. This project proposes to upgrade and/or expand the existing Honouliuli major collection and treatment systems. Alternatives for the collection system includes 1) no action, 2) upgrade and modification of existing collection system including relief sewers, storage tanks for wet weather flows at various WWPSs, replacement WWPSs and/or constructing a third force main for the Pearl City and/or Waipahu force mains and 3) constructing a GST system for conveyance and storage to replace the existing conveyance facilities. The treatment system will be evaluated to develop alternatives for expansion of the Honouliuli WWTP to meet future hydraulic demands.
Existing Uses	Existing land uses in the Project Area include residential, commercial, industrial, harbor and agricultural.

State Land Use	State land uses in the Project Area include Urban, Agricultural and Conservation Districts.
Zoning	Zoning in the Project Area includes apartment, agriculture, business, Federal and military preservation, industrial, resort, preservation, residential and mixed districts.
Flood Insurance Rate Map	Portions of the Project Area are in the flood zone.
Special Management Area	A portion of the Project Area is in the special management area.
Permits Required	Clearances and permits needed from the various Federal, State and City and County of Honolulu agencies include but are not limited to the following. **Federal:** U.S. Army Corps of Engineers Department of the Army Permit (CWA Section 404; Rivers and Harbors Act Section 10) U.S. Coast Guard USCG Section 9 Permit Applicability Guidance U.S. Environmental Protection Agency NPDES Form 2A – Discharge of Municipal Wastewater from New and Existing Publicly Owned Treatment Works) U.S. Fish and Wildlife Service Section 7 Review **State of Hawaii:** Department of Business, Economic Development and Tourism, Office of Planning Coastal Zone Management Consistency Determination Department of Health (DOH) Air Pollution Control Permits (Covered Source Permit and/or Noncovered Source Permit) Construction Plan Review and Approval Noise Variance Permit NPDES NOI Form C – Storm Water Discharges Associated with Construction Activities NPDES NOI Form F – Discharges Associated with Hydrotesting Waters NPDES NOI Form G – Discharges Associated with Construction Activity Dewatering Section 401 Water Quality Certificate Department of Land and Natural Resources Historic Preservation Division Chapter 6E, HRS Historic Preservation Review Department of Transportation (DOT) Highways – Permit to Perform Work Within State Highways Harbors – Work within the Energy Corridor **City and County of Honolulu (CITY):** Board of Water Supply (BWS) Water and Water System Requirements Construction Plan Review and Approval Department of Environmental Services EIS Approval Department of Planning and Permitting (DPP) Building Permit Construction Plan Review and Approval Development Plan Public Facilities Map Amendment Dewatering Permit

	Electrical Permit Grading and Erosion Control Plan Review Grading, Grubbing, and Stockpiling Permit Plumbing Permit Shoreline Setback Variance Sidewalk/Driveway Work Permit Special Management Area Use Permit (Major) Street Usage Permit **Other:** Utility Companies Utility Service Requirements Permit Regarding Work on Utility Lines
Determination	Project may result in significant impacts to the environment; therefore, an Environmental Impact Statement is required
EIS Preparer	AECOM 1001 Bishop Street, Suite 1600 Honolulu, Hawaii 96813 Contact: Lambert Yamashita

ACRONYMS AND ABBREVIATIONS

AC	Asbestos Cement
ADWF	Average Daily Dry Weather Flow
ALISH	Agricultural Lands of Importance to the State of Hawaii
BMP	Best Management Practice
BOD	Biological Oxygen Demand
BWS	Board of Water Supply
CAB	Clean Air Branch
CC	Concrete Cylinder
CDP	Census-Designated Place
CEPT	Chemically Enhanced Primary Treatment
CI	Cast Iron
CIP	Capital Improvement Program
CITY	City and County of Honolulu
CLSM	Controlled Low Strength Material
DAR	Division of Aquatic Resources
DBEDT	Department of Business, Economic Development and Tourism
DEIS	Draft Environmental Impact Statement
DFM	Department of Facility Maintenance
DI	Ductile Iron
DLNR	Department of Land and Natural Resources
DOH	Department of Health
DOT	Department of Transportation
DPP	Department of Planning and Permitting
DWI	Dry Weather Infiltration
FEA/EISPN	Final Environmental Assessment/ Environmental Impact Statement Preparation Notice
EIS	Environmental Impact Statement
ENV	Department of Environmental Services
EPA	U.S. Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
Final Sewer I/I Plan	Final Sewer Infiltration and Inflow Plan
FIRM	Flood Insurance Rate Map
GIS	Geographical Informational System
GST	Gravity Sewer Tunnel
HAR	Hawaii Administrative Rules
HECO	Hawaii Electric Company, Inc.
HFD	Honolulu Fire Department
HHCTCP	Honolulu High-Capacity Transit Corridor Project
Honouliuli WWTP	Honouliuli Wastewater Treatment Plant
HOLIS	Honolulu Land Information System
Honouliuli Fac Plan	Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan
HPD	Honolulu Police Department
HRS	Hawaii Revised Statues
HWRF	Honouliuli Water Recycling Facility
I/I	Infiltration and Inflow
I/I Study	Sewer Rehabilitation and Infiltration & Inflow Minimization Study, Volumes 1 to 9

IWS	Individual Wastewater System
LCA	Land Commission Award
LUC	Land Use Commission
LUO	Land Use Ordinance
MBR	Membrane Bioreactor
mgd	Million Gallons Per Day
MSL	Mean Sea Level
NEPA	National Environmental Policy Act
NH_3	Ammonia
NOAA	National Ocean and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
OEQC	Office of Environmental Quality Control
O&M	Operation and Maintenance
PER	Preliminary Engineering Report
PF	Peak Flow
Project	Honouliuli/Waipahu/Pearl City Facilities Plan, Phase I Area
PVC	Polyvinyl Chloride
PWWF	Peak Wet Weather Flow
RC	Reinforced Concrete
RDI/I	Rainfall Dependent Inflow and Infiltration
SFAS	Sewer Flow Analysis System
SHPD	State Historic Preservation Division
SMA	Special Management Area
SSO	Sanitary Sewer Overflow
State	State of Hawaii
TA	Tributary Area
TIAR	Traffic Impact Analysis Report
TC	Terra Cotta
TDH	Total Discharge Head
TF/SC	Trickling Filter/Solids Contact
TKN	Total Kjeldahl Nitrogen
TMK	Tax Map Key
TP	Total Phosphorus
TSS	Total Suspended Solids
UBC	Uniform Building Code
VC	Vitrified Clay
VFD	Variable Frequency Drive
VOC	Volatile Organic Compounds
Wastewater Design Standards	Design Standards of the Department of Wastewater Management, Volume 1 (1993) and Design Standards of the Division of Wastewater Management, Volume 2 (1984)
WWPS	Wastewater Pump Station
WWPTF	Wastewater Preliminary Treatment Facility
WWTP	Wastewater Treatment Plant

1.0 INTRODUCTION

1.1 PROJECT OVERVIEW

The City and County of Honolulu (CITY), Department of Environmental Services (ENV) is conducting a planning and engineering study for improvements to the Honouliuli Sewershed wastewater conveyance and treatment facilities that would be required to meet service demands to the year 2030 and beyond. The CITY is undertaking the study to ensure that public investment in essential wastewater infrastructure is directed toward system improvements that provide the greatest benefit to current and future users.

The Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan (Honouliuli Fac Plan) is an update to the existing *West Mamala Bay Facilities Plan* with the added consideration of the emerging technology for constructing gravity sewer tunnel (GST) systems for conveyance and storage of wastewater flows. The updating process involves reviewing and evaluating the alternatives and recommendations of the *West Mamala Bay Facilities Plan* to assist in identifying alternatives for the current Honouliuli Fac Plan. The update will provide engineering details for upgrading the sanitary sewer system served by the Honouliuli WWTP.

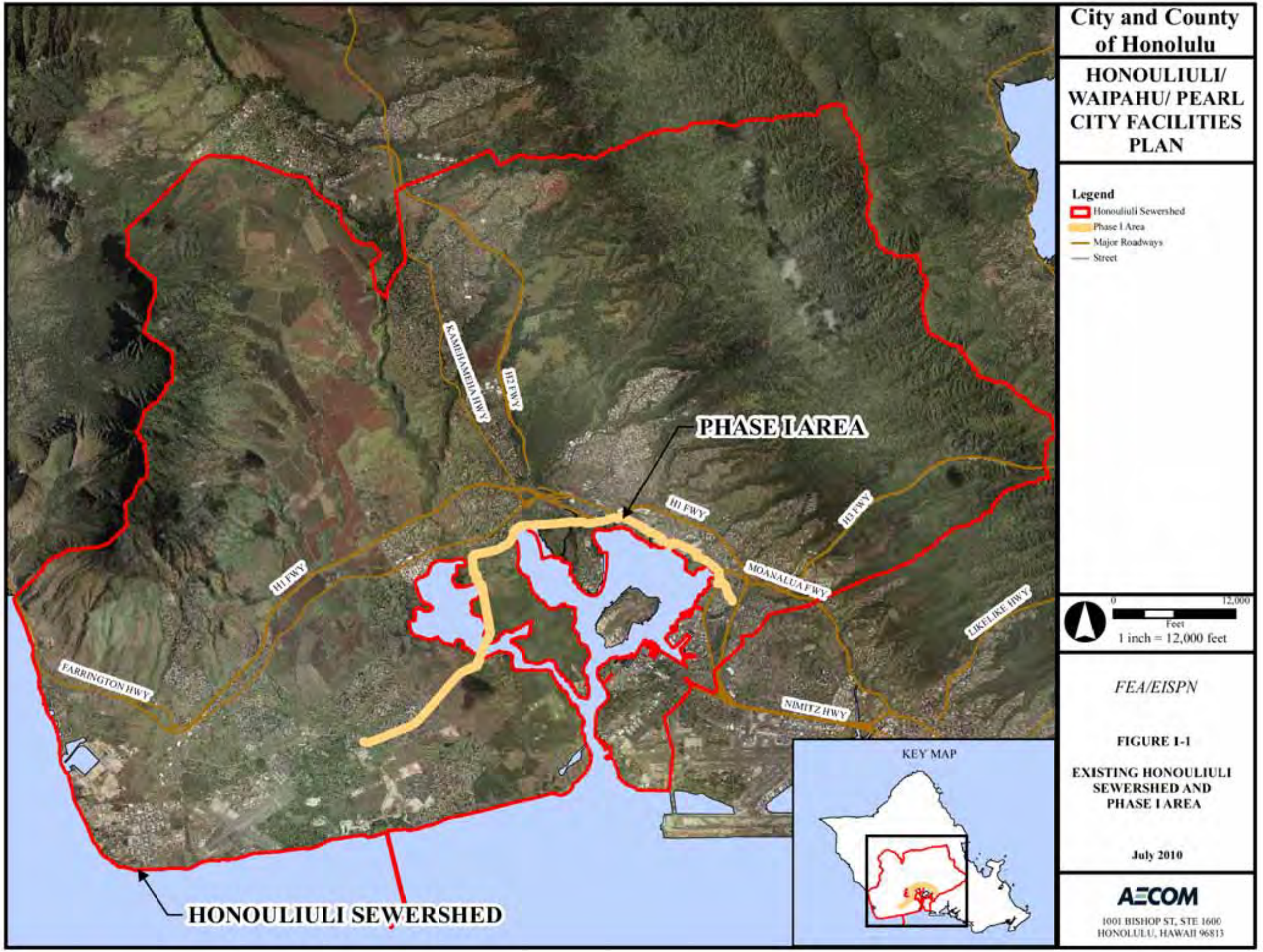
This Final Environmental Assessment/Environmental Impact Statement Preparation Notice (FEA/EISPN) focuses on alternatives for improvements and upgrades to the Phase I Area of the Honouliuli Sewershed, which includes the main conveyance system from Halawa WWPS to Waimalu WWPS to Pearl City WWPS to Waipahu WWPS and finally to the Honouliuli WWTP (referred to as the East Interceptor in the *West Mamala Bay Facilities* Plan, completed in 2001) and the Honouliuli WWTP. The Phase I Area is illustrated in **Figure 1-1.**

The Phase II Area includes the remainder of the collection system in the Honouliuli Sewershed. The *I/I Study* and *Final Sewer I/I Plan* have identified needs and recommended Capital Improvement Program (CIP) projects to address these needs in the Honouliuli Sewershed. In addition, there is an ongoing *Sewer I/I Assessment and Rehabilitation Project* which may identify additional needs and recommend additional CIP projects. Proposed projects within the Phase II Area are not included/assessed in this FEA/EISPN and will be the subject of future reviews.

Various alternatives will be identified to provide adequate conveyance and treatment of wastewater in the Phase I Area to minimize sanitary sewer overflows (SSOs), to comply with regulatory mandates from the State of Hawaii Department of Health (DOH) and the United States Environmental Protection Agency (EPA), and to meet the future needs for wastewater management.

1.2 BACKGROUND

The entire Honouliuli Sewershed service area extends from West Beach to Halawa and includes areas from which current wastewater flows to Honouliuli Wastewater Treatment Plant (Honouliuli WWTP) as well as potential future flows from areas including but not limited to Halawa, Aiea, Pearl City, Waipio, Waikele, Waipahu, Ewa, Kapolei and Mililani. Excluded are the U.S. Navy facilities at Pearl Harbor (served by the Navy's Fort Kamehameha WWTP) and the Campbell Industrial Park (served by a private wastewater system). The Honouliuli wastewater collection and treatment systems are essential public facilities that currently serve a population of approximately 335,000 residents. The Honouliuli Sewershed consists of facilities including the Honouliuli WWTP, the Honouliuli Influent Pump Station (IPS) and 16 CITY



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Honouliuli Sewershed
- Phase I Area
- Major Roadways
- Street

0 12,000 Feet

1 inch = 12,000 feet

FEA/EISPN

FIGURE 1-1

EXISTING HONOULIULI SEWERSHED AND PHASE I AREA

July 2010

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HONOLULU, HAWAII 96813

operated wastewater pump stations (WWPSs), as well as a collection and conveyance system consisting of sewer gravity mains and force mains (FMs). The Honouliuli Sewershed is illustrated in **Figure 1-1.** As previously indicated, the proposed project only affects the Phase I Area of the sewershed.

The current facilities plan for the Honouliuli Sewershed is the *West Mamala Bay Facilities Plan*, which was completed in 2001. Alternatives for upgrading the system to address various deficient components, replacing the system and reducing the number of WWPSs to accommodate existing and future capacity and address corrosion and structural deficiencies, and construct flow equalization facilities to capture and store storm flows that would feed the flow back into the system at a rate that could be accommodated, and expanding the plant to address deficiencies in plant capacity were included in the *West Mamala Bay Facilities Plan*. Estimated construction costs were presented in the *West Mamala Bay Facilities Plan* for the alternatives; however, no backup information regarding size, depth, construction methods, or contracting methods were included.

In addition to the *West Mamala Bay Facilities Plan*, the *Final Sewer Infiltration and Inflow Plan* (*Final Sewer I/I Plan*) was completed in 1999 in compliance with requirements of a Consent Decree (Civ. No. 94-00765 DAE dated May 15, 1995) between the CITY, the State DOH, and the EPA. The *Final Sewer I/I Plan* established infiltration and inflow rates for each wastewater services basin and provided a key basis for developing design flows throughout the region. The *Final Sewer I/I Plan* summarizes the work done in the *Sewer Rehabilitation and Infiltration & Inflow Minimization Study* (*I/I Study*), and describes the 20-year Rehabilitation Program that the CITY has been implementing over the past 10 years (see **Table 1-1** for summary).

The 20-year Rehabilitation Program presented in the *Final Sewer I/I Plan* contains a prioritized list of conceptual CIP projects developed to address structural and hydraulic deficiencies identified by the *I/I Study*. The *Final Sewer I/I Plan* recommended 28 CIP projects in the Honouliuli Sewershed. The CITY is currently half way through the 20-year program and is re-evaluating the conceptual CIP projects prioritized to be implemented in the next 10 years.

Table 1-1. Twenty Year Rehabilitation CIP Project Summary

CIP ID	Project Name	Phase
HN-CS-01	Fort Weaver Road Reconstructed Sewer	Phase II
HN-CS-02	Kamehameha Highway Trunk Sewer Reconstruction, Mililani	Phase II
HN-CS-03	Fort Weaver Road Manhole and Pipe Rehabilitation, Ewa	Phase II
HN-CS-04	Renton Road Sewer and Manhole Rehabilitation	Phase II
HN-CS-05A	Pearl City Manhole and Pipe Rehabilitation	Phase II
HN-CS-05B	Waipahu Manhole and Pipe Rehabilitation	Phase II
HN-CS-05C	Ewa Manhole Rehabilitation	Phase II
HN-CS-06	Honouliuli Relief Sewers	Phase II
HN-CS-07	Waimalu Wastewater System Relief	Phase I
HN-CS-08	Pearl City Trunk Sewer Relief	Phase I
HN-CS-09	Pacific Palisades Sewer Relief	Phase II
HN-CS-10A	Honouliuli Sewer Rehabilitation - 7D01A	Phase I
HN-CS-10B	Honouliuli Sewer Rehabilitation - 7D01C	Phase II
HN-CS-10C	Honouliuli Sewer Rehabilitation - 7F05	Phase I
HN-CS-11	Halawa Relief Sewers	Phase II
HN-CS-12	Aiea Relief Sewer	Phase II
HN-CS-13	Waimalu Sewer Replacement	Phase I
HN-CS-14	Waipahu Sewer Replacement	Phase II
HN-CS-15	Pearl City Relief Sewer	Phase II
HN-CS-16	Mililani Relief Sewer	Phase II
HN-CS-17	Waipio Relief Sewer	Phase II
HN-CS-18	Aiea Heights Relief Sewers	Phase II
HN-PS-01	Waipio WWPS Upgrade	Phase II
HN-PS-02	Ewa Beach WWPS Upgrade	Phase II
HN-PS-03	Waipahu WWPS Upgrade	Phase I
HN-PS-04	Pearl City WWPS Relief	Phase I
HN-TP-01	Honouliuli WWTP Upgrade	Phase I
HN-TP-02	Mililani WWPTF Upgrade	Phase II

Source: *Final Sewer Infiltration and Inflow Plan* (1999)

The CITY has just completed an update to the Critical Sewer Structural Condition Assessment Program by conducting condition assessments of the large diameter sewers (generally gravity sewer mains fifteen inches in diameter and greater) to determine the potential need for additional structural upgrade projects to be implemented in the next ten years. In addition, the CITY is currently conducting an update to the Wet Weather Infiltration and Inflow (WW I/I) Program, which includes the *Sewer I/I Assessment and Rehabilitation Project Update* to re-assess the conceptual CIP projects presented in the *Final Sewer I/I Plan* developed to address hydraulic deficiencies in the wastewater system. In conjunction with the Critical Sewer Structural Condition Assessment Program Update and the WW I/I Program Update, the CITY has conducted a holistic review of the wastewater CIP program to evaluate the application of infrastructure engineered to ensure longer service lives and to blend into the surrounding

neighborhood. GSTs are one of the infrastructure solutions that have been applied in other municipalities to achieve these objectives. Application of a GST to the Honouliuli Sewershed allows for elimination of several WWPSs and FMs, provides gravity flow to the Honouliuli WWTP, and offers additional storage capacity for the system.

The 16 CITY-operated WWPSs in the Honouliuli Sewershed include:

- Ewa Beach WWPS
- Ewa Gentry WWPS
- Halawa WWPS
- Kunia WWPS
- Makakilo City WWPS
- Mililani WWPS
- Pacific Palisades WWPS
- Pearl City WWPS
- Waiawa Industrial Park WWPS
- Waimalu WWPS
- Waipahu WWPS
- Waipio WWPS
- West Beach Resort #1 WWPS
- West Beach Resort #2 WWPS:
- West Loch Estates WWPS
- West Loch Fairways WWPS

The CITY has identified a subset of the sewershed, the Phase I Area, where the use of GST system would have a higher likelihood of being feasible compared to the outlying areas of the collection system. The WWPSs in the Phase I Area include:

- Halawa WWPS
- Pearl City WWPS
- Waimalu WWPS
- Waipahu WWPS

A detailed description of the existing Phase I Area wastewater system is included in **Section 2**.

Alternatives considered for upgrading and expanding the conveyance facilities and the Honouliuli WWTP (both hydraulic expansion and expansion to full secondary treatment), based on GST and non-GST systems, are the focus of this FEA/EISPN, and the subsequent Draft Environmental Impact Statement (DEIS) and Final Environmental Impact Statement (FEIS) that will be prepared for this project.

1.3 PURPOSE AND NEED

This project is being undertaken to address the following needs:

- Protect public health and safety through the development and maintenance of municipal wastewater conveyance and treatment facilities
- Evaluate alternative wastewater conveyance systems to ensure recommended improvements provide the greatest benefit to current and future users.
- Evaluate alternatives to upgrade the sanitary sewer system served by the Honouliuli WWTP to address future flows over the planning period
- Implement certain requirements of federal and state permits and mandates.

The purpose of this project is to evaluate the previous studies and reports conducted in the Honouliuli Sewershed and to identify alternatives for improvements and upgrades to the Phase I Area facilities.

This project will focus on improving the main Phase I Area from Halawa WWPS to Waimalu WWPS to Pearl City WWPS to Waipahu WWPS and finally to the Honouliuli WWTP, as well as providing hydraulic and treatment upgrades to the Honouliuli WWTP. The objective of this project is to minimize SSOs in the Phase I Area, comply with regulatory mandates from the State DOH and EPA and to provide a basis to meet future needs for wastewater management.

1.4 PROJECT DESCRIPTION

The major components of the facilities plan are the collection, treatment and disposal systems. This project will focus on the Phase I Area collection and treatment systems. The proposed project involves conducting a thorough engineering assessment of the current system and determining the most appropriate systems and technology to meet current and future needs. Final recommendations may include one or more of the evaluated alternatives as well as a blended solution of two or more alternatives.

Alternatives being considered include but are not limited to:

- Additional gravity sewers (relief sewers)
- Peak flow storage tanks at pump stations
- Additional pump station force mains
- Pump station capacity expansions, modifications, and relocations
- GST to replace some pump stations and provide peak flow storage
- Upgrade and expansion of the wastewater treatment plant to secondary treatment

The project planning period includes:

- 2030 population projection for upgrade and expansion of existing facilities
- 150 year life for the GST and corresponding population projection
- 30 year design life for pump stations and force mains
- 20 year life for mechanical equipment
- Year 2040 for the economic analysis

1.5 ENVIRONMENTAL PROCESS

In accordance with the Hawaii Revised Statutes (HRS) Chapter 343, an Environmental Assessment (EA) and/or Environmental Impact Statement (EIS) is required since the project involves the following actions:

- Propose the use of county lands or funds
- Propose any use within any land classified as a conservation district by the state land use commission under chapter 205
- Propose any use within a shoreline area as defined in section 205A-41
- Propose any wastewater facility, except an individual wastewater system or a wastewater facility serving fewer than fifty single-family dwellings or the equivalent
- Propose any waste-to-energy facility

Federal funding is not anticipated for this project. However, the potential need for federal action will be evaluated in the EIS to determine if National Environmental Policy Act (NEPA) compliance is required.

The proposing and accepting agency for this project is the CITY ENV. This FEA/EISPN will be submitted to the Office of Environmental Quality Control (OEQC) for publication in the *Environmental Notice* and will be available to various Federal, State and CITY agencies. The intent of this FEA/EISPN is to notify interested parties of the project and the potential impacts and mitigation measures for these alternatives and to solicit comments from stakeholders including government agencies, community organizations, private businesses and the general public.

Following the FEA/EISPN, a DEIS and FEIS will be prepared to assess the overall environmental impacts of the recommended alternative. The DEIS and FEIS will be prepared in compliance with the HRS Chapter 343. As part of the environmental process, there will be a 45-day review and comment period and informational meetings after the DEIS is published. A FEIS will be prepared after the comment period. The environmental process is estimated to take approximately two years.

2.0 EXISTING FACILITIES

2.1 COLLECTION SYSTEM

2.1.1 Entire Honouliuli Sewershed

The Honouliuli Sewershed collection system, which encompasses the Phase I Area, is comprised of a network of gravity lines, force mains, wastewater preliminary treatment facility (WWPTF) and wastewater pump stations (WWPSs) that collect and convey wastewater to the Honouliuli WWTP for treatment.

The entire sewershed collection system includes the following elements:

- 53,000 service connections
- 2,610,000 linear feet of gravity sewer ranging from 6- to 84-inch diameter
- 95,000 linear feet of force main ranging from 6- to 48-inch diameter
- 16 WWPSs owned and operated by the CITY, excluding the Honouliuli WWTP Influent WWPS

Table 2-1 and **Table 2-2** describe the existing gravity sewers in the Honouliuli Basin and **Figure 2-1** shows the collection system tributary areas (TAs) and the flow schematic.

Table 2-1. Summary of Gravity Sewers Pipe Sizes for the Honouliuli Basin

Diameter (in)	Number of Reaches	Total Length (ft)	% by Length
6	726	94,709	4
8	10,229	1,692,502	65
10	938	160,498	6
12	876	157,458	6
14	6	1,936	< 1
15	620	115,543	4
16	8	14,965	1
18	338	67,387	3
20	7	11,727	< 1
21	193	41,462	2
24	279	57,369	2
27	77	14,190	1
30	204	62,272	2
33	18	5,468	< 1
36	135	42,645	2
42	88	41,421	2
48	11	12,931	< 1
60	1	201	< 1
84	26	12,290	< 1
Total	14,782	2,606,687	100

Source: Department of Planning and Permitting, Honolulu Land Information System (HoLIS), 4/12/2010

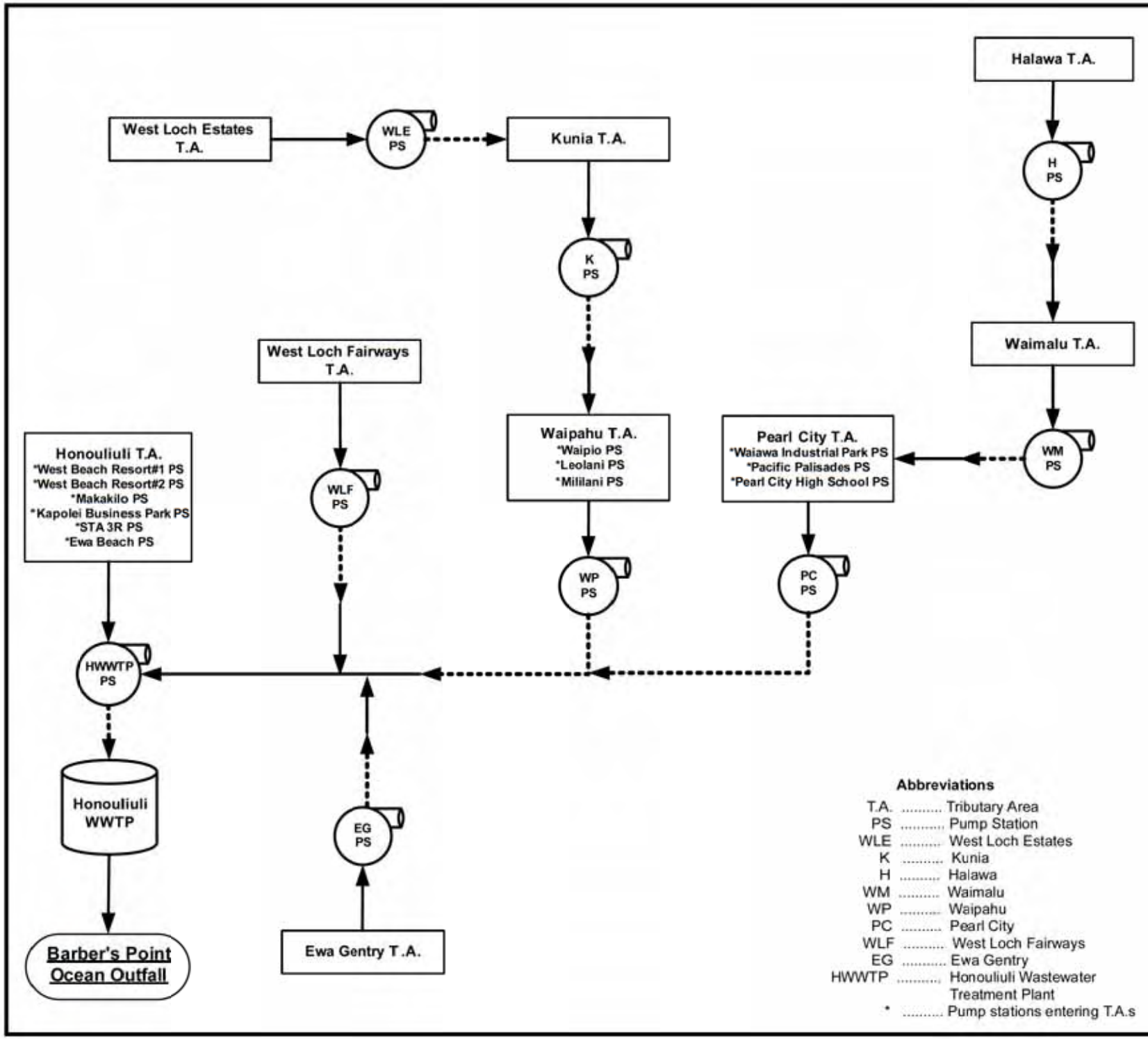
West Loch Estates T.A.
WLE PS
Kunia T.A.
Halawa T.A.
H PS
K PS
West Loch Fairways T.A.
Waimalu T.A.
Honouliuli T.A.
*West Beach Resort#1 PS
*West Beach Resort#2 PS
*Makakilo PS
*Kapolei Business Park PS
*STA 3R PS
*Ewa Beach PS
WLF PS
Waipahu T.A.
*Waipio PS
*Leolani PS
*Mililani PS
Pearl City T.A.
*Waiawa Industrial Park PS
*Pacific Palisades PS
*Pearl City High School PS
WM PS
WP PS
PC PS
HWWTP PS
Honouliuli WWTP
EG PS
Barber's Point Ocean Outfall
Ewa Gentry T.A.
Abbreviations
T.A. ..... Tributary Area
PS ..... Pump Station
WLE ..... West Loch Estates
K ..... Kunia
H ..... Halawa
WM ..... Waimalu
WP ..... Waipahu
PC ..... Pearl City
WLF ..... West Loch Fairways
EG ..... Ewa Gentry
HWWTP ..... Honouliuli Wastewater Treatment Plant
* ..... Pump stations entering T.A.s
City and County of Honolulu
HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN
Legend
T.A.
Tributary Area
PS
Wastewater Pump Station
Force Main Flow
Gravity Flow
WWTP
Wastewater Treatment Plant
Ocean Outfall
FEA/EISPN
FIGURE 2-1
COLLECTION SYSTEM FLOW SCHEMATIC
July 2010
AECOM
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Table 2-2. Summary of Pipe Material for Gravity Sewers in the Honouliuli Basin

Pipe Material	Number of Reaches	Total Length (ft)	Average Age of Pipes (yr)	% by Length
ACP - Asbestos Cement Pipe	1	2,020	40	< 1
CIP - Cast Iron Pipe	44	22,748	44	< 1
DIP - Ductile Iron Pipe	54	68,004	29	3
HDPE - High Density Polyethylene	2	538	11	< 1
PVC - Polyvinyl Chloride Pipe	631	115,165	15	4
RCP - Reinforced Concrete Pipe	1,000	228,776	33	9
TCP - Terra Cotta Pipe	28	3,402	56	< 1
VCP - Vitrified clay pipe	12,934	2,150,820	32	83
UNK - Pipe Diameter ≤ 8 inches	88	15,210	41	1
Total	14,782	2,606,687	33	100

Source: Department of Planning and Permitting, Honolulu Land Information System (HoLIS), 4/12/2010

2.1.2 Phase I Area

The Phase I Area conveyance facilities include the Halawa, Waimalu, Pearl City and Waipahu WWPSs. **Figure 2-2** shows the locations of the Phase I facilities.

2.1.2.1 Halawa WWPS

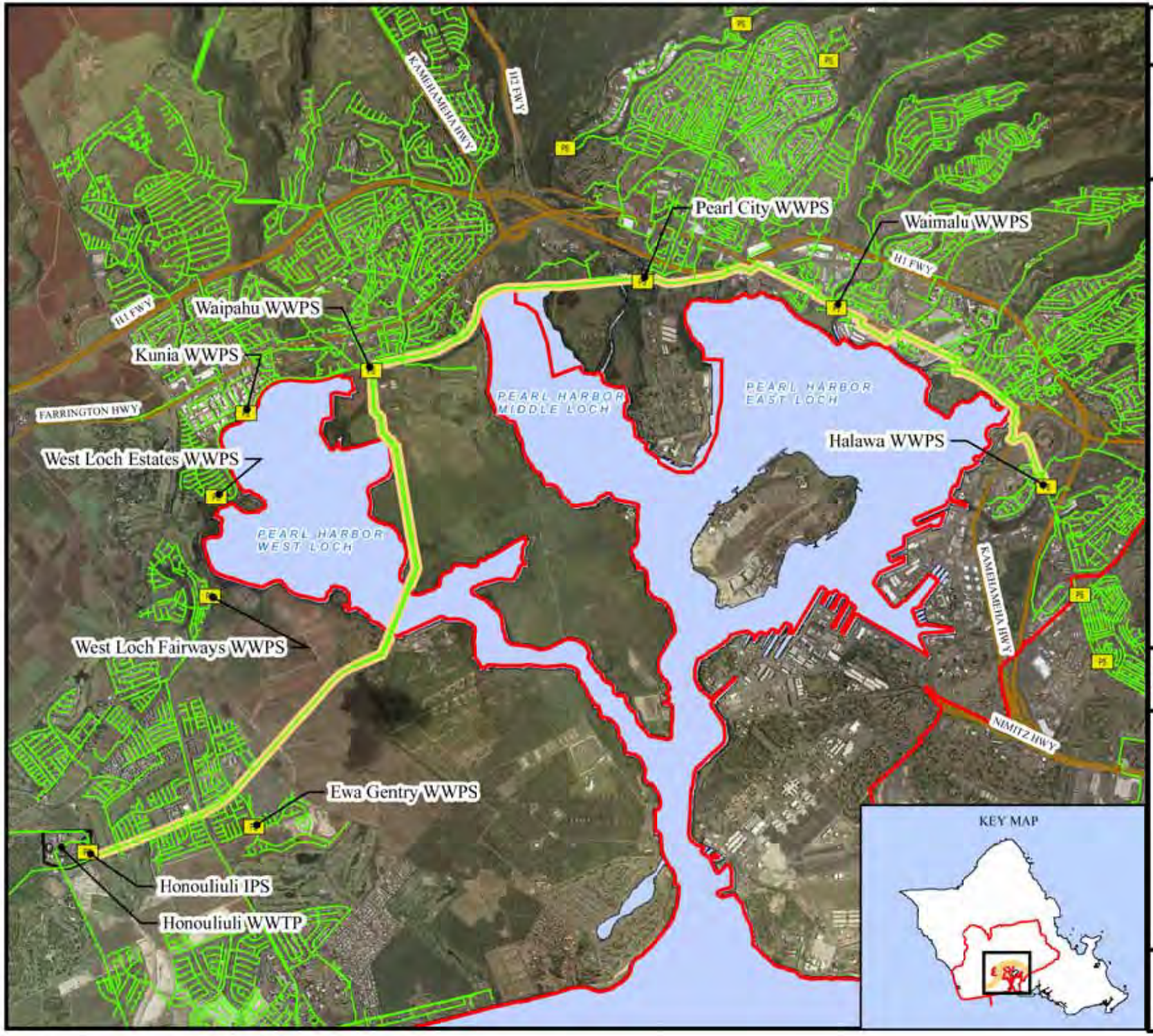
The Halawa Tributary flows are all collected at the Halawa WWPS. The Halawa WWPS is located on an approximately 0.3-acre site at 99-560 Salt Lake Boulevard, adjacent to Halawa Stream and the lower portion of the Aloha Stadium parking lot. The WWPS has been in service since 1970, and serves the Halawa TA. Two gravity sewers enter the WWPS: an 18-inch from the southeast and a 24-inch from the northwest. The Halawa WWPS discharges flow to the Waimalu WWPS tributary system

2.1.2.2 Waimalu WWPS

The Waimalu WWPS is located at 245 Kamehameha Highway in the northeast corner of the 21.4-acre Neal Blaisdell Park. The WWPS has been in service since 1968. The WWPS serves the Waimalu TA in addition to receiving flows from the Halawa WWPS. Three gravity sewers enter the WWPS: a 6-inch lateral from the comfort station in the park, an 18-inch from the northwest and a 42-inch from the southeast. The Waimalu WWPS discharges flow to the Pearl City WWPs tributary system.

2.1.2.3 Pearl City WWPS

The Pearl City WWPS is located on an approximately 0.7-acre site at 790 Lehua Avenue, adjacent to undeveloped land owned by the Federal government. The WWPS has been in service since 1966. The WWPS receives gravity flow from the local Pearl City TA, along with pumped flows from the Halawa, Waimalu and Waiawa TAs as well as the Pearl City High School WWPS. Three trunk sewers are located near the WWPS: a 24-inch sewer from the west, a 42-inch sewer from the east and an 18-inch sewer from the north that enters the 42-inch sewer prior to entering the WWPS. The Pearl City WWPS currently discharges into a shared force main system that also serves the Waipahu WWPS. The force main conveys flows to the 84-inch sewer tributary to the Honouliuli WWTP IPS.



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Honouliuli Sewershed
- Honouliuli WWTP
- PS Pump Station
- Force Main
- Sewer Gravity Line
- Phase I Area
- Major Roadways

0 4,800 Feet

1 inch = 5,000 feet

FEA/EISPN

FIGURE 2-2

EXISTING PHASE I AREA FACILITIES

July 2010

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2.1.2.4 Waipahu WWPS

The Waipahu WWPS is located at 93-065 Waipahu Depot Road near the Waipahu Convenience Center (CITY refuse and recycling center), the Honolulu Fire Department Vehicle Maintenance Facility and Ke Kula Makai (Honolulu Police Academy). The WWPS is located on two sites that total approximately 58 acres and has been in service since 1963. The WWPS receives gravity flow from the local Waipahu TA, along with pumped flows from the Kunia WWPS, Waipio WWPS, Leolani WWPS, and the Mililani WWPS. Four sewer lines (a 27-inch from the east, an 8-inch from the south, a 36-inch from the west and a 42-inch from the north) combine into a 42-inch sewer prior to entering the Waipahu WWPS. The Waipahu WWPS currently discharges into a combined force main system that also serves the Pearl City WWPS. The force main conveys flows to the 84-inch sewer tributary to the Honouliuli WWTP IPS.

2.1.2.5 Honouliuli IPS

The Honouliuli WWTP Influent Pump Station (IPS) is located on the Honouliuli WWTP site at 91-1000 Geiger Road, adjacent to the Coral Creek Golf Course. The IPS receives gravity flow from local tributary areas in the vicinity of the Honouliuli WWTP, as well as flows discharged from the West Beach Resort #1 WWPS, West Beach Resort #2 WWPS, Makakilo WWPS, Kapolei Business Park WWPS, STA 3R WWPS, Ewa Beach WWPS, Waipahu WWPS and Pearl City WWPS. Four sewer lines (a 30-inch sewer and a 48-inch sewer from the north, an 84-inch trunk from the east and a 21-inch sewer from the west) combine into an 84-inch sewer prior to entering the IPS. The Honouliuli WWTP IPS discharges into the Honouliuli WWTP for treatment. Under the GST alternatives, the flows from the Waipahu and Pearl City WWPSs will be diverted to the GST at upstream drop shafts along the GST, while the remaining flows tributary to the IPS will be diverted to the GST at a drop shaft located adjacent to the Honouliuli WWTP site.

2.1.2.6 Summary of Phase I Area Wastewater Infrastructure

Figure 2-3 summarizes the Phase I Area WWPS capacities and characteristics and **Table 2-4** summarizes the diameter, lengths and materials of the force mains in the Phase I Area.

Table 2-3. Existing Phase I Area WWPS Capacities and Characteristics

Tributary Pump Station	No. of Existing Pumps	Additional Pump Spaces	Pump Capacity (GPM)	Firm WWPS Capacity (MGD)	Max. WWPS Capacity (MGD)	Comments
Halawa	3	0	3,150	11.1	11.20	From Source 1
Waimalu	3	1	7,638	19.3	24.62	From Source 1
Pearl City	4	0	8,400	34.7*	55.8**	Modification: Installed new variable speed drives in 2005. Pearl City WWPS and Waipahu WWPS are an interconnected pumping system sharing a common force main. * Denotes minimum Firm Capacity based on 3 pumps running at 100% capacity at both WWPSs. **Denotes Max Capacity based on 4 pumps running at 100% capacity with no pumps running at Waipahu WWPS.
Waipahu	4	0	9,120	56.2*	84.3**	Modification: All pumps replaced in 2005. Pearl City WWPS and Waipahu WWPS are an interconnected pumping system sharing a common force main. * Denotes minimum Firm Capacity based on 3 pumps running at 100% capacity at both WWPSs. **Denotes Max Capacity based on 4 pumps running at 100% capacity with no pumps running at Pearl City WWPS.
Honouliuli Influent	6	0	13,900 / 25,000	116.00	152.00	From Source 2, Four (4) 13,900 gpm (20 MGD) variable speed, Two (2) 25,000 (36 MGD) diesel.

Sources: 1.Spill Reduction Action Plan Engineering Report, Transport & Treatment Alternatives & Cost Studies, Appendix F, Volume V of V, Nov. 1995

2.West Mamala Bay Facilities Plan, Final Plan Report, City and County of Honolulu, Wilson Okamoto & Associates and Brown and Caldwell Consultants, December 2001

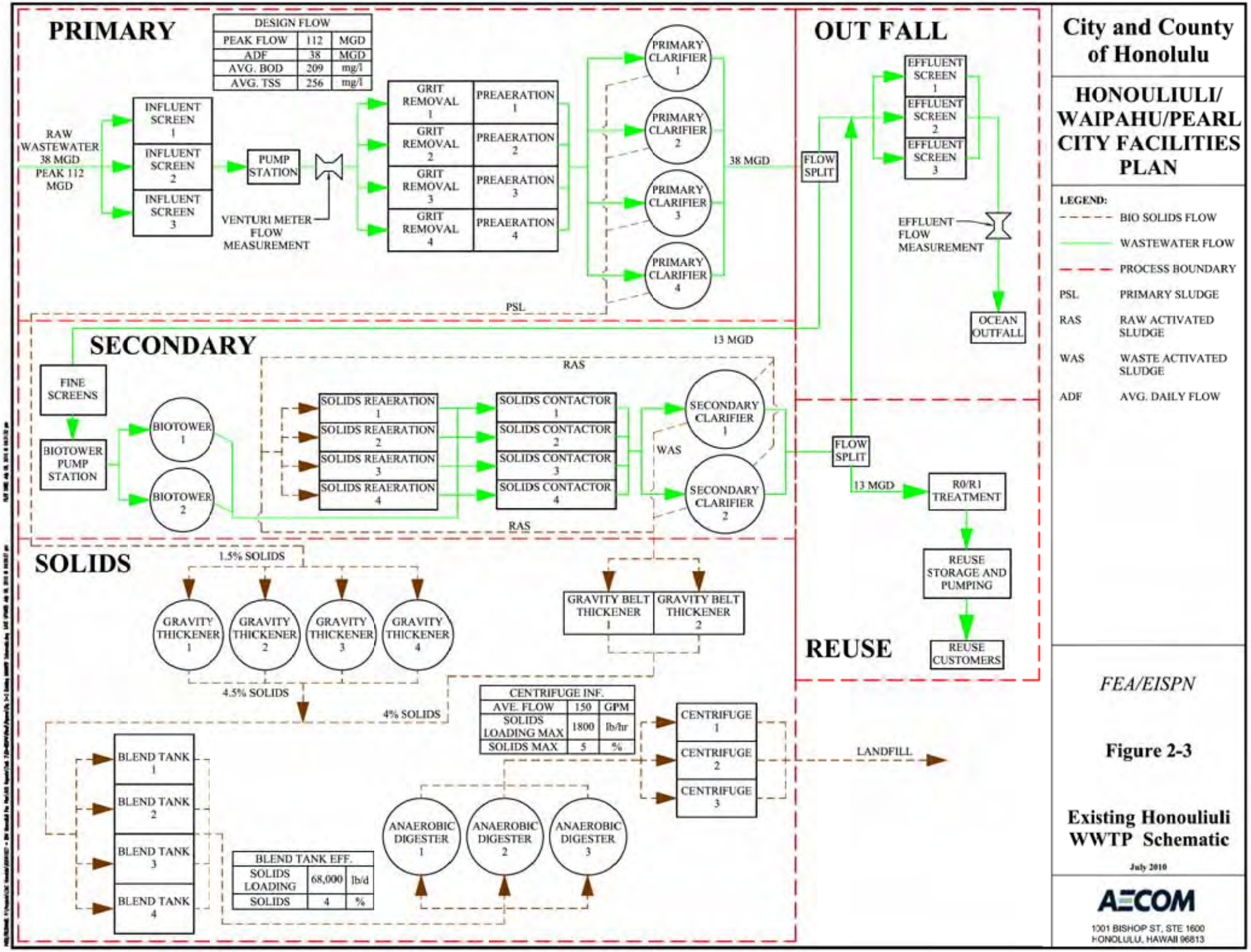
Table 2-4. Existing Phase I Area Force Mains

Force Main	Major Component				Additional Components				Total Length (ft)
	Diameter (in)	Length (ft)	Material	Installed	Diameter (in)	Length (ft)	Material	Installed	
Halawa	21	2,020	ACP	9/20/1970	20	76	CIP	9/20/1970	2,095
Waimalu	30	2,756	CIP	11/12/1964	Na	Na	Na	Na	2,756
Pearl City - South	36	7,099	DIP	4/30/1980	36	49	DIP	1/1/1983	11,558
					30	4,379	DIP	4/30/1980	
					30	31	DIP	1/1/1983	
Pearl City - North	36	7,112	DIP	4/30/1980	42	4,379	DIP	4/30/1980	11,522
					36	17	DIP	1/1/1983	
					30	14	DIP	1/1/1983	
Waipahu - East	42	8,414	CCP*	9/9/1981	48	1,860	RCP	12/17/1982	12,768
					42	22	DIP	5/11/1979	
					42	2,176	DIP	12/17/1982	
					36	96	DIP	5/11/1972	
					36	9	DIP	9/9/1981	
					36	9	DIP	12/17/1982	
					36	61	CIP	5/11/1979	
					24	121	CIP	5/11/1979	
Waipahu - West	48	8,414	CCP*	9/9/1981	48	1,860	RCP	12/17/1982	12,634
					48	23	DIP	5/11/1979	
					42	2,176	DIP	12/17/1982	
					36	82	DIP	5/11/1979	
					36	9	DIP	12/17/1982	
					36	9	DIP	9/9/1981	
					36	61	CIP	5/11/1979	

Sources: 1.Adapted from Fukunaga and Associates, Inc., City and County of Honolulu *Force Main Condition Assessment Program*, October 2004.
2.Department of Planning and Permitting, Honolulu Land Information System (HoLIS), 4/12/2010
*CCP = Concrete Cylinder Pipe

2.2 TREATMENT SYSTEM

The Honouliuli WWTP has an existing liquid stream capacity of 38 mgd and a solids capacity of 27 mgd (limiting factor); however, new anaerobic digesters will increase the solids capacity to match the liquid capacity. Currently, the Honouliuli WWTP treats approximately 26 mgd. Alternatives will be evaluated to expand the future treatment on a conceptual level and for handling PWWF. The existing Honouliuli WWTP schematic and site plan are shown in **Figure 2-3** and **Figure 2-4**. **Table 2-5** summarizes the existing processes at the Honouliuli WWTP.



City and County of Honolulu

HONOULIULI/ WAIPAHU/PEARL CITY FACILITIES PLAN

LEGEND:

- - - -	BIO SOLIDS FLOW
———	WASTEWATER FLOW
– – –	PROCESS BOUNDARY
PSL	PRIMARY SLUDGE
RAS	RAW ACTIVATED SLUDGE
WAS	WASTE ACTIVATED SLUDGE
ADF	AVG. DAILY FLOW

FEA/EISPN

Figure 2-3

Existing Honouliuli WWTP Schematic

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City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

TMK Parcel

0 250 Feet

1 inch = 250 feet

FEA/EISPN

FIGURE 2-4

EXISTING HONOULIULI WWTP SITE PLAN

July 2010

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HONOLULU, HAWAII 96813

Table 2-5. Existing Honouliuli WWTP Process Units

Process Unit	Number of units	Dimensions				Hydraulic Data
		Length (ft)	Width (ft)	Diameter (ft)	Sidewater Depth (ft)	Volume Per Unit (gal)
Influent Screens	3	—	5	—	3.6	—
Influent Pump Station: Six extended-shaft centrifugal pumps, four 20-mgd, variable-speed electric, two 36-mgd diesel driven: 92'x11' wet well.						
Aerated Grit Chamber	4	60	20	—	13.5	123,510
Preaeration Tanks	4	150	20	—	13.5	325,380
Primary Clarifiers	4	—	—	145	10	1,230,230
Biotower Pump Station: Eight vertical turbine, constant speed pumps (four for each biotower; two 6.5 mgd and two 3.25 mgd capacity pumps)						
Biotowers	2	—	—	100	20	—
Sludge Reaeration Tanks	4	24	8	—	12	17,234
Solids Contactor	4	105	8	—	12	75,398
Secondary Clarifiers	2	—	—	100	16	940,000
Effluent Screens	4	—	5.5	—	7.5	—
Barbers Point Deep Ocean Outfall: 8,760 feet into the ocean to a diffuser section; 1,750 feet in length, approximately 200 feet below surface						
Gravity Thickener	4	—	—	40	10	94,000
Gravity Belt Thickeners	2	—	6.5	—	—	—
Blend Tanks	4	20	20	—	16	48,830
Anaerobic Digesters	3	—	—	90	30	1,427,670
Centrifuges	3	Sludge feed rate = 150gpm at 2% solids each, maximum solids loading = 1800 lb/hr				

2.3 DISPOSAL SYSTEM

Effluent from the preliminary treatment system is disposed of principally by deep ocean outfall. Provisions for water reclamation and reuse of a portion of the effluent have been made. The Honouliuli WWTP provides secondary treated effluent to the Honouliuli Water Recycling Facility (HWRF) adjoining the plant site, which is operated and maintained independently by the semi-autonomous CITY Board of Water Supply (BWS). The water reclamation processes include sand filtration, reverse osmosis, and ultraviolet disinfection.

The effluent disposal system will not be evaluated as part of this project.

Solids residues from the Honouliuli WWTP are disposed of at the Waimanalo Gulch Landfill in Kahe Valley, Kapolei. It is anticipated that these methods of disposal will continue until alternative plans are developed for ultimate disposal. It should be noted that the solids loading to the WWTP comes from the Honouliuli WWTP, in addition to the Wahiawa and Paalaa Kai WWTPs, which are trucked to the Honouliuli WWTP for further processing and disposal.

The treatment level of liquid flows to the WWTP and the solids handling processes in the existing design will be evaluated in an effort to reduce solids production, thereby reducing disposal to the landfill.

3.0 PROPOSED ACTION AND ALTERNATIVES

The proposed action is to upgrade and/or expand the existing Honouliuli major collection and treatment systems in the Phase I Area. A number of alternatives are being evaluated to successfully achieve the project goal. This section describes a combination of alternatives evaluated in the *West Mamala Bay Facilities Plan* and the *I/I Study,* and other conceptual alternatives for the collection and treatment of wastewater at Honouliuli WWTP. The following also describes the approach implemented to develop additional alternatives. Engineering analyses are ongoing and more detailed descriptions will be forthcoming. According to the State Department of Land and Natural Resources (DLNR) Land Division, Oahu District, some actions may require a land disposition from the Land Board, e.g. set aside or easement. "No Action" alternatives are being evaluated for each component.

3.1 POPULATION, FLOW AND WASTE LOADS

To determine system capacity requirements within the planning period, population and flow projections have been developed for the year 2007, year 2030 and year 2150. Based on the range of data available at the start of the analysis and model preparation, the year 2007 was chosen as the current design year. Year 2030 and the corresponding population estimate is key to the evaluation and comparison of alternatives related to the treatment plant, pumping stations, force mains, and wastewater storage tanks. Population projections to year 2150, also referred to as the "tunnel life" scenario, are in reference to the possibility of implementation of a GST and related facilities that are expected to have a useful life of up to 150 years. Population projections are provided in **Table 3-1**.

Table 3-1. Tributary Areas and Population Projections[1]

Tributary	2007[1]		2030		2150	
	Area (Acres)	Population	Area (Acres)	Population	Area (Acres)	Population
Halawa	1,697	22,912	1,697	34,271	1,697	33,555
Waimalu[2]	2,686	40,321	2,686	41,786	2,686	85,698
Pearl City[2]	2,691	43,920	2,691	44,972	5,045	79,238
Waipahu	6,407	99,484	6,830	108,411	7,492	219,784
Kunia[3]	967	25,959	2,077	32,298	2,077	27,217
West Loch Estates[3]	84	2,199	84	2,158	261	6,724
West Loch Fairways[4]	144	6,210	144	6,432	354	11,509
Ewa Gentry[4]	141	4,998	141	9,814	141	6,692
Honouliuli IPS[5]	6,849	88,840	12,617	152,692	14,206	210,555
Total	**21,666**	**334,843**	**28,967**	**432,834**	**33,959**	**680,972**

Source: Honouliuli Fac Plan Work Task 4.A – Design Flows and Waste Load Determination Technical Memorandum

1. 2007 population = 2000 population + (7/30) x (2030 population - 2000 population)
2. Pearl City and Waimalu equivalent populations have been adjusted to correspond with adjustments in tributary area
3. The area and population for the Kunia and West Loch Estates WWPS are tributary to the Waipahu WWPS
4. The area and population for the West Loch Fairways and Ewa Gentry WWPS are tributary to the Honouliuli IPS
5. For completeness, the remaining area and population associated with the Honouliuli IPS are provided

3.2 Flow Components and Projections

The hydraulic performance of the system under a variety of hydrologic (rainfall) conditions was modeled to assist in evaluating alternatives. Design flows were created for the model that consist of dry weather flows and wet weather flows. These design flows take into account factors that would affect flow, such as the year and population.

3.3 Modeling Process

As part of the collection system evaluation, a computer model was developed and calibrated to mimic the hydraulic performance of the CITY system under a variety of hydrologic conditions.

3.3.1 Software Description

InfoWorks CS (from MWH Soft and Wallingford Software) was selected to model the collection system. InfoWorks CS is a fully dynamic, hydrologic and hydraulic modeling program. The software combines a relational database with geographical analysis that integrates asset planning with detailed modeling. InfoWorks CS incorporates interactive views of data using geographical plan views, cross sections, spreadsheet and time varying graphical data. A 3-D terrain view allows visual presentation of above ground terrain and the impact of localized sewer problems.

3.3.2 Model Creation and Configuration

The initial base for the model was the CITY geographical informational system (GIS) sewer database provided by the CITY Department of Design and Construction (DDC) and also available on the CITY Department of Planning (DPP) Honolulu Land Information System (HoLIS) website. This database was updated in 2009 with recent data from the ongoing CITY projects. This information included the three dimensional layout and characteristics of the collection system assets such as gravity sewers, manholes, pump stations, tributary boundaries and force mains.

3.3.3 Model Calibration Process

Although the CITY is currently in the process of conducting a system wide flow and rainfall monitoring program insufficient data from that program was available to use at the time of calibration. As such the meter data from the *Final Sewer I/I Plan* was used with corresponding rain event information. Where available, data from ongoing CITY projects were used for verification.

The hydraulic model was calibrated using a three step process. First, the dry weather flow in the system was calibrated to meter data for a dry weather period from the flow monitoring records. Second, a wet weather calibration was performed using corresponding rainfall and flow monitoring data. The analysis period contained several moderate sized storms. And finally, model parameters were adjusted to match wet weather flows and major discrepancies were resolved.

3.3.4 Dry Weather Flows

For the purpose of modeling and flow estimation, the base dry weather flows are composed of several key elements: Sanitary Flow, Sanitary Peak Flows, and Dry Weather Infiltration.

- Sanitary Base Flow is specific to the adjusted equivalent population projections and corresponding per capita flow rates. In addition, the Sanitary Flow Peaking Factor (PF) was determined to be 2.0 from flow monitoring efforts as part of the *Final Sewer I/I Plan* (Fukunaga and Associates, Inc, 1999).
- Sanitary Peak Flow is calculated by multiplying the Sanitary Flow by the Sanitary Flow PF.

- Dry Weather Infiltration (DWI) is the ground water that makes its way into the wastewater collection system during dry weather periods. This DWI is typically a constant rate of flow during dry weather periods and is a factor of various aspects such as ground water levels, soil conditions, age/condition of sewers, etc. This flow would be specific to each tributary.

3.3.5 Wet Weather Flows

The influence on the wastewater collection system from rain events is the contributing additional flow factor for wet weather flows. Wet weather flows are composed of dry weather flows plus rainfall dependent I/I (RDI/I).

- R-Factor Analysis was used in previous modeling efforts by the CITY as part of the *Final Sewer I/I Plan* (Fukunaga and Associates, Inc, 1999) to summarize the effects of both inflow and infiltration into the wastewater collection system. This factor is established as a linear percentage of rainfall that falls in the collection system area entering the collection system.
- Model Rain Event will be considered the design rain event for planning purposes (2-yr, 6-hr storm event). This rain event was chosen based on the Force Majeure Report (Fukunaga and Associates, Inc, 1997), which states that 2-yr, 6-hr design storm has a recourrence frequency of 4 to 6 years.

3.4 Model Scenarios

Various model scenarios were evaluated as shown in **Table 3-2** and are described in the subsequent paragraphs.

Table 3-2. Description of Model Runs

Model Run	Description	Upstream Condition	Year
1	2-yr, 6-hr storm, free discharge at specified pump stations: Represents flow to tunnel or flow to pump stations from upstream areas to be equalized by tanks.	Existing	2007
2			2030
3			2150
4		Bottlenecks Relieved	2007
5			2030
6			2150

3.4.1 Model Runs 1 thru 6: 2-yr, 6-hr storm, Free Discharge at Specified Pump Stations

For the determination of drop shaft sizing and tunnel volume requirements for conveyance and storage, the "Free Discharge" scenario was used during the design wet weather event. This scenario replicates the instantaneous discharge of flow at the final collection point of a TA without passing the flows through a pump station and force main system as is the current condition. The removal of pump station and force main systems achieves three requirements necessary for proper analysis of flow rates and volumes to a tunnel system:

- Maximum wet weather flow rates that represent hydraulic requirements for tunnel drop shafts.
- Total flow volumes and peak flow rates requiring storage and/or conveyance during wet weather events that might have otherwise not been passed by the pump stations due to sanitary sewer overflows.
- Elimination of flows that would have otherwise been transferred to the subject TA from another tributary pump station.

3.5 BASIS OF DESIGN FLOWS

The design flows were developed using the Dry and Wet Weather Flow components described in **Section 3.3.3** and **Section 3.3.4**, respectively. The design flows are listed below:

- Average Daily Dry Weather Flow = Sanitary Base Flow + DWI
- Peak Daily Dry Weather Flow = (Sanitary Base Flow x PF) + DWI
- Average Daily Wet Weather Flow = Sanitary Base Flow + DWI + WWI/I Average Daily
- Peak Daily Wet Weather Flow = (Sanitary Base Flow x PF) + DWI + WWI/I Average Daily
- Peak Hourly Wet Weather Flow = (Sanitary Base Flow x PF) + DWI + WWI/I Peak Hourly

Design flows were created for three timeframes over the analysis period and tabulated in **Table 3-3**, **Table 3-4**, and **Table 3-5**. The tabulation of flows is based on analysis of unrestricted TA gravity flows (i.e. restrictions from pump stations and undersized sewers are removed in model runs where "bottlenecks removed" are indicated).

Table 3-3. Year 2007 Flows (Based on Model Run 4)

WWPS[1]	Base Sanitary Flow (mgd)	Dry Weather Infiltration (mgd)	Average Daily Dry Weather Flow[2] (mgd)	Sanitary Flow Peaking Factor	Peak Hourly Dry Weather Flow[3] (mgd)	Wet Weather I/I Average Daily Flow[4] (mgd)	Wet Weather I/I Peak Hourly Flow[5] (mgd)	Average Daily Wet Weather Flow[6] (mgd)	Peak Hourly Wet Weather Flow[7] (mgd)
Halawa	1.81	1.12	2.93	2.00	4.74	1.04	5.34	3.97	8.27
Waimalu	2.14	1.35	3.49	2.00	5.63	1.66	10.8	5.15	14.3
Pearl City	3.14	3.09	6.23	2.00	9.37	1.38	10.7	7.61	16.9
Waipahu	7.04	1.60	8.65	2.00	15.7	3.72	24.3	12.4	32.9
Kunia	1.04	0.34	1.38	2.00	2.43	0.20	2.06	1.58	3.44
West Loch Estates	0.25	0.12	0.36	2.00	0.61	0.03	0.34	0.39	0.70
West Loch Fairways	0.26	0.08	0.34	2.00	0.60	0.16	1.39	0.50	1.73
Honouliuli WWTP IPS	6.89	2.20	9.08	2.00	16.0	4.82	26.4	13.9	35.5
Totals[8]	22.6	9.90	32.5	–	55.1	13.0	81.3	45.5	105.0

Notes:

1. Flows based on free discharge conditions at each of the WWPSs listed in the table, and represent only flows from the specific WWPS tributary area. Specifically, flows at Waimalu WWPS do not include flows from Halawa WWPS; flows at Pearl City WWPS do not include flows from Waimalu WWPS; flows at Kunia do not include flows from West Loch Estates WWPS; flows at Waipahu do not include flows from Kunia WWPS; flows at Honouliuli WWTP IPS do not include flows from Pearl City, Waipahu, or West Loch Fairways WWPSs.
2. Average Daily Dry Weather Flow = Base Sanitary Flow + Dry Weather Infiltration.
3. Peak Hourly Dry Weather Flow = (Base Sanitary Flow X Peaking Factor) + Dry Weather Infiltration.
4. Wet Weather I/I Average Daily Flow = Average Daily Wet Weather Flow - Average Daily Dry Weather Flow.
5. Wet Weather I/I Peak Hourly Flow = Peak Hourly Wet Weather Flow - Average Daily Dry Weather Flow.
6. Average Daily Wet Weather Flow = Average flow from a 24-hour period starting with the start of rainfall for the 2-year, 6-hour storm, from the InfoWorks model.
7. Peak Hourly Wet Weather Flow = Peak hour flow from the 2-year, 6-hour storm, from the InfoWorks model.
8. Totals represent arithmetic sums of individual flow values. Actual peak flows at any point in the system depend on travel time and timing of peak flows from upstream tributary areas. For example, 105 mgd does not represent the expected maximum peak flow at the Honouliuli IPS due to variations in the timing of the individual peak flows at the upstream WWPSs.

Table 3-4. Year 2030 Flows (Based on Model Run 5)

WWPS[1]	Base Sanitary Flow (mgd)	Dry Weather Infiltration (mgd)	Average Daily Dry Weather Flow[2] (mgd)	Sanitary Flow Peaking Factor	Peak Hourly Dry Weather Flow[3] (mgd)	Wet Weather I/I Average Daily Flow[4] (mgd)	Wet Weather I/I Peak Hourly Flow[5] (mgd)	Average Daily Wet Weather Flow[6] (mgd)	Peak Hourly Wet Weather Flow[7] (mgd)
Halawa	2.70	1.12	3.82	2.00	6.52	1.2	6.06	5.02	9.88
Waimalu	2.16	1.35	3.51	2.00	5.67	1.89	12.3	5.4	15.8
Pearl City	3.39	3.09	6.48	2.00	9.87	1.56	12.4	8.04	18.9
Waipahu	7.68	1.60	9.28	2.00	17.0	4.32	28.7	13.6	38.0
Kunia	1.30	0.34	1.64	2.00	2.94	0.22	2.4	1.86	4.04
West Loch Estates	0.25	0.12	0.36	2.00	0.61	0.03	0.34	0.39	0.70
West Loch Fairways	0.27	0.08	0.35	2.00	0.62	0.18	1.56	0.53	1.91
Honouliuli WWTP IPS	12.4	2.20	14.5	2.00	26.90	5.60	39.1	20.1	53.6
Totals[8]	30.1	9.90	39.9	–	70.1	15.0	103.0	54.9	143.0

Notes:

1. Flows based on free discharge conditions at each of the WWPSs listed in the table, and represent only flows from the specific WWPS tributary area. Specifically, flows at Waimalu WWPS do not include flows from Halawa WWPS; flows at Pearl City WWPS do not include flows from Waimalu WWPS; flows at Kunia do not include flows from West Loch Estates WWPS; flows at Waipahu do not include flows from Kunia WWPS; flows at Honouliuli WWTP IPS do not include flows from Pearl City, Waipahu, or West Loch Fairways WWPSs.
2. Average Daily Dry Weather Flow = Base Sanitary Flow + Dry Weather Infiltration.
3. Peak Hourly Dry Weather Flow = (Base Sanitary Flow X Peaking Factor) + Dry Weather Infiltration.
4. Wet Weather I/I Average Daily Flow = Average Daily Wet Weather Flow - Average Daily Dry Weather Flow.
5. Wet Weather I/I Peak Hourly Flow = Peak Hourly Wet Weather Flow - Average Daily Dry Weather Flow.
6. Average Daily Wet Weather Flow = Average flow from a 24-hour period starting with the start of rainfall for the 2-year, 6-hour storm, from the InfoWorks model.
7. Peak Hourly Wet Weather Flow = Peak hour flow from the 2-year, 6-hour storm, from the InfoWorks model.
8. Totals represent arithmetic sums of individual flow values. Actual peak flows at any point in the system depend on travel time and timing of peak flows from upstream tributary areas. For example, 105 mgd does not represent the expected maximum peak flow at the Honouliuli IPS due to variations in the timing of the individual peak flows at the upstream WWPSs.

Table 3-5. Year 2150 Flows (Based on Model Run 6)

WWPS[1]	Base Sanitary Flow (mgd)	Dry Weather Infiltration (mgd)	Average Daily Dry Weather Flow[2] (mgd)	Sanitary Flow Peaking Factor	Peak Hourly Dry Weather Flow[3] (mgd)	Wet Weather I/I Average Daily Flow[4] (mgd)	Wet Weather I/I Peak Hourly Flow[5] (mgd)	Average Daily Wet Weather Flow[6] (mgd)	Peak Hourly Wet Weather Flow[7] (mgd)
Halawa	2.65	1.12	3.77	2.00	6.41	1.19	6.04	4.96	9.81
Waimalu	4.02	1.35	5.38	2.00	9.40	1.88	12.8	7.26	18.2
Pearl City	6.88	3.09	9.97	2.00	16.9	1.63	13.7	11.6	23.7
Waipahu	15.6	1.60	17.2	2.00	32.7	4.40	35.0	21.6	52.2
Kunia	1.30	0.34	1.64	2.00	2.94	0.22	2.4	1.86	4.04
West Loch Estates	0.75	0.12	0.87	2.00	1.63	0.03	0.67	0.90	1.54
West Loch Fairways	0.48	0.08	0.56	2.00	1.04	0.18	1.75	0.74	2.31
Honouliuli WWTP IPS	16.2	2.20	18.4	2.00	34.7	5.60	40.5	24.0	58.9
Totals[8]	47.7	9.90	57.6	–	105.0	15.1	113.0	72.7	170.0

Notes:

1. Flows based on free discharge conditions at each of the WWPSs listed in the table, and represent only flows from the specific WWPS tributary area. Specifically, flows at Waimalu WWPS do not include flows from Halawa WWPS; flows at Pearl City WWPS do not include flows from Waimalu WWPS; flows at Kunia do not include flows from West Loch Estates WWPS; flows at Waipahu do not include flows from Kunia WWPS; flows at Honouliuli WWTP IPS do not include flows from Pearl City, Waipahu, or West Loch Fairways WWPSs.
2. Average Daily Dry Weather Flow = Base Sanitary Flow + Dry Weather Infiltration.
3. Peak Hourly Dry Weather Flow = (Base Sanitary Flow X Peaking Factor) + Dry Weather Infiltration.
4. Wet Weather I/I Average Daily Flow = Average Daily Wet Weather Flow - Average Daily Dry Weather Flow.
5. Wet Weather I/I Peak Hourly Flow = Peak Hourly Wet Weather Flow - Average Daily Dry Weather Flow.
6. Average Daily Wet Weather Flow = Average flow from a 24-hour period starting with the start of rainfall for the 2-year, 6-hour storm, from the InfoWorks model.
7. Peak Hourly Wet Weather Flow = Peak hour flow from the 2-year, 6-hour storm, from the InfoWorks model.
8. Totals represent arithmetic sums of individual flow values. Actual peak flows at any point in the system depend on travel time and timing of peak flows from upstream tributary areas. For example, 105 mgd does not represent the expected maximum peak flow at the Honouliuli IPS due to variations in the timing of the individual peak flows at the upstream WWPSs.

3.6 WASTE LOADS

Waste load characteristics to be used for basis of design include biological oxygen demand (BOD), total suspended solids (TSS), total Kjeldahl nitrogen (TKN), ammonia (NH_3) and total phosphorus (TP). A design waste load coefficient for each waste load characteristic is derived from using the average loading data received from the plant from years 2006-2009. The average loading rate divided by the population equivalent projection during the year 2007 gives the design waste load coefficient. Design waste loads for their respective years are obtained by multiplying the design waste load coefficient with the population projection for their respective year.

Data for TKN, NH3, and TP were not obtained by the plant. Therefore, design loading rates for these parameters were assumed from a reference design standard (*Wastewater Engineering Treatment and Reuse, Metcalf & Eddy, 4th edition).* A ratio was obtained using the Average Daily Dry Weather Flow (ADWF) TSS concentration obtained from the plant data and the TSS

value from the design standard. This ratio was applied to the TKN, NH3, and TP values from the design standard to obtain the estimated waste load concentrations at ADWF. After converting their ADWF concentrations to loading rates, their waste load coefficients and projected loading rates were obtained following the same procedure as the BOD waste load coefficient and loading rate was obtained.

Based on a review of the historical waste load trends, design waste load concentrations were developed for ADWF and extrapolated for future population projections on a per capita basis. The current and future mass loading for basis of design is summarized in **Table 3-6**.

Table 3-6. WWTP Influent Waste Load Projections

Parameter	BOD	TSS	TKN	NH3	TP
Design waste load coefficient, lb/capita/day	0.211	0.222	0.038	0.025	0.006
Design waste load for 2007, lb/day	70,652	74,335	12,724	8,371	2,009
Design waste load for 2030, lb/day	91,328	96,089	16,448	10,821	2,597
Design waste load for 2150, lb/day	143,685	151,176	25,877	17,024	4,086

3.7 ALTERNATIVES CONSIDERED

Alternatives considered include upgrades, modifications and/or new facilities in the collection and treatment systems, and the hydraulics of the disposal system. The Honouliuli Sewershed collection system is comprised of collection gravity lines, as well as WWPSs discharging wastewater through force mains, conveying flow for treatment at the Honouliuli WWTP. The WWPSs within the Phase I Area include the Halawa, Waimalu, Pearl City and Waipahu WWPS.

3.7.1 Design Standards

Alternative upgrades to the existing collection and wastewater treatment systems will be in accordance with the CITY's *Design Standards of the Department of Wastewater Management*, Volume 1 (1993) and *Design Standards of the Division of Wastewater Management*, Volume 2 (1984), collectively referred to as the *Wastewater Design Standards*. Where supplemental standards were required the *Recommended Standards for Wastewater Facilities* (commonly referred to as the *Ten States Standards*), 2004 Edition, Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, Wastewater Engineering: Treatment & Reuse (Metcalf & Eddy, 4th Edition), and typical standards of practice were used.

3.7.2 Current CIP and Previous Planning Recommendations

This section describes the planning recommendations identified in previous studies and documents.

3.7.2.1 Final Sewer I/I Plan

The CITY is currently operating under a Capital Improvement Plan (CIP) established in the *I/I Study*, completed by Fukunaga and Associates, Inc in December 1999. The purpose of this plan was to determine the optimal approach to minimize sanitary sewer overflows and to fulfill requirements of a May 15, 1995 Consent Decree between the CITY, the State DOH, and EPA.

The recommendations from the *I/I Study*, included island-wide upgrades to the wastewater system. The *I/I Study* prioritized the CIP into four – 5-year blocks:

- First 5-Year Block (projects completed by December 31, 2004) included projects that were already being implemented, projects addressing severe structural deficiencies, projects addressing historic wet weather SSOs and/or operational problems and projects with other considerations for scheduling included in the first 5-year block
- Second 5-Year Block (projects completed by December 31, 2009) included projects addressing less urgent structural deficiencies, projects addressing severe hydraulic deficiencies and projects with other considerations for scheduling included in the second 5-year block
- Third 5-Year Block (projects completed by December 31, 2014) included projects addressing moderate hydraulic deficiencies and projects with other considerations for scheduling included in the third 5-year block
- Fourth 5-Year Block (projects completed by December 31, 2019) included projects addressing minor hydraulic deficiencies.

The CITY has made island-wide improvements according to the first two (higher priority) blocks. The CITY is now half way through the CIP and is in the process of reviewing the recommendations in the last two blocks to determine if current information and conditions have changed sufficiently to warrant updating prior plans for the future. An overview of major CIP projects included in the evaluation are provided in **Table 3-7**.

Table 3-7. Final Sewer I/I Plan Major Recommended Project Listing

Project Name	Project Description
Waimalu Wastewater System Relief	48-inch relief sewer of 17,000 feet long parallel to the H-1 Freeway to intercept wastewater flows from the mauka side of the freeway between Halawa Heights and Newtown. The project also includes connections to the existing sewers. The intercepted flow discharges into the Pearl City trunk sewer.
Pearl City Trunk Sewer Relief	Expands 3,240 feet of the Pearl City Trunk Sewer capacity to 34 mgd
Pearl City WWPS Relief	Relocating the Pearl City WWPS out of the flood zone, upgrading it to 46 mgd in capacity, and providing the capability for future expansion to 54 mgd. It also includes the collection system and force main modifications for flow rerouting to the new WWPS

Source: Fukunaga and Associates, Inc., *Final Sewer Infiltration and Inflow Plan* (1999)

3.7.2.2 West Mamala Bay Facilities Plan

Subsequent planning to provide a long-range strategy for accommodating the collection, treatment, and disposal of wastewater in the basin resulted in the *West Mamala Bay Facilities Plan*, completed by Wilson Okamoto & Associates, Inc, and Brown and Caldwell Consultants in December 2001. This plan resulted in various planning recommendations for dealing with storage and conveyance of wet weather flows. Recommended projects used as a basis of alternative development and comparison are summarized in the **Table 3-8** and **Table 3-9**.

Table 3-8. West Mamala Bay Facilities Plan Recommended Projects

Project Name	Project Description
Halawa WWPS Storage Facility	1.0 MG underground storage facility in the Aloha Stadium parking lot adjacent to the WWPS. Approximately 1,090 linear feet of relief sewers.
Waimalu WWPS Storage Facility	1.3 MG underground storage facility within Blaidell Park adjacent to the WWPS.
Pearl City WWPS Storage Facility	3.1 MG underground storage facility at the former Pearl City WWTP site, approximately 2,400 feet from the WWPS.

Source: Wilson Okamoto & Associates, Inc. and Brown and Caldwell Consultants, *West Mamala Bay Facilities Plan* (2001)

As can be seen from the recommended project list, the emphasis of the recommendations is related to collection system storage in what is referred to as the East Interceptor by the *West Mamala Bay Facilities Plan*. The intent was to provide flow equalization along the four primary pump stations proceeding from upstream to downstream since the capacity requirements of downstream facilities are affected by the implementation of upstream improvements. These improvements would allow for more usable capacity from the existing WWPS's as well as the WWTP, thereby extending the timeline for expansion of these facilities.

Several alternatives evaluated but not recommended as part of the *West Mamala Bay Facilities Plan* are also being considered for further investigation. Assuming the Waimalu Relief Sewer project is implemented; the Pearl City Trunk Sewer Upgrade would be required and will be considered one project for purposes of evaluation. Relocation and upgrade of the Pearl City WWPS will also be investigated in greater detail.

Table 3-9. West Mamala Bay Facilities Plan Alternative Projects

Project Name	Project Description
Waimalu Relief Sewer	1,700 linear feet of 48-inch gravity sewer along H-1 from Aloha Stadium to the Kamehameha underpass where it would discharge into the Pearl City Trunk Sewer.
Pearl City Trunk Sewer Upgrade	Upgrade approximately 3,300 linear feet of the Pearl City Trunk sewer starting at the WWPS.
Pearl City WWPS Relocation And Upgrade	Relocation of the Pearl City WWPS outside of the flood limits adjacent to Lehua Ave. and increase the capacity to 46 mgd with the provisions for future expansion to 54 mgd.

Source: Wilson Okamoto & Associates, Inc. and Brown and Caldwell Consultants, *West Mamala Bay Facilities Plan* (2001)

3.7.3 Collection System

The Phase I Area collection system is comprised of collection gravity lines, as well as pump stations discharging sewer through force mains, conveying flow for treatment at the Honouliuli WWTP. For the evaluation of collection system alternatives, the primary emphasis of investigation and alternatives development consisted of the collection system corridor along the Halawa WWPS, Waimalu WWPS, Pearl City WWPS, and Waipahu WWPS, with additional WWPS's, force mains and gravity sewers being included where there was opportunity. There are several options for the collection system as outlined below. The final recommended alternative may consist of one alternative or a hybrid of several.

3.7.3.1 No Action

The "No Action" alternative involves no upgrades to the current collection system. Only areas with problems will be fixed.

3.7.3.2 Upgrade and Modification of Existing Collection System

This section describes the alternatives development process and the analysis of each of the identified alternatives. The six evaluated alternatives are listed below and described in greater detail in their respective sections.

- Alternative 1 – Relocate Pearl City WWPS and upsize Waimalu WWPS
- Alternative 2 – Storage at Waimalu WWPS
- Alternative 3 – Upsize Waimalu WWPS and storage at Pearl City WWPS
- Alternative 4 – Waimalu Relief Sewer
- Alternative 5 – Waimalu Relief Sewer and relocate Pearl City WWPS
- Alternative 6 – Additional force main from Waipahu WWPS and upsize Waimalu WWPS

The basic approach for sizing each of the alternatives included the following steps:

- For each pump station determine the wet weather inflow hydrograph for the 2-year, 6-hour storm under free discharge conditions (flow not restricted by pump station capacity). This hydrograph would include flow from the local tributary plus discharge from any upstream pump station(s).
- Compare the firm WWPS capacity to the design peak flow from the inflow hydrograph to determine if the inflow exceeds the WWPS firm capacity. Inflow in excess of the WWPS firm capacity indicates that storage or increased pumping capacity will be required.
- Calculate storage volume requirements. For alternatives where storage is evaluated the volume of flow in excess of firm capacity is computed from the inflow hydrograph.
- For alternatives where an increase of WWPS firm capacity is evaluated in place of storage, the WWPS firm capacity is set equal to the design peak inflow rate, and the impact on downstream facilities assessed.

For all alternatives, both the Halawa WWPS and Waipahu WWPS firm capacities are sufficient to pump all inflow so that no storage or increase in pumping capacity is needed.

Alternative 1 – Relocate Pearl City WWPS and upsize Waimalu WWPS

The Halawa, Pearl City and Waipahu WWPSs all have sufficient capacity to pass the 2-year, 6-hour storm design flow without significant surcharging. At the Waimalu WWPS, however, the design flow exceeds the existing pumping capacity. To avoid providing storage at the Waimalu site, Alternative 1 would increase the capacity of the Waimalu WWPS to match the 2-year, 6-hour storm design flow. Increasing the flow at Waimalu would cause the flow to Pearl City to exceed the existing capacity at Pearl City. Alternative 1 therefore also includes relocating and increasing the capacity of the Pearl City WWPS, so that no additional storage facilities would be required.

The Waimalu WWPS currently has three pumps installed with structural provisions in place for the installation of a fourth pump. With a fourth pump in place the firm capacity would be 24.6 mgd, which is slightly less than the design peak inflow rate of 27.2 mgd. It may be possible during the upgrade to make motor, variable frequency drive (VFD) and/or impeller improvements to increase the capacity of the pumps by this marginal amount. Additionally, the additional flow during the design rain event in excess of the 24.6 mgd capacity could potentially be stored in the collection system without significant backwater conditions.

This alternative includes the relocation of the Pearl City WWPS, which is currently part of the CCH CIP due to previous instances of flooding. It is assumed that during the relocation of the WWPS the firm capacity could be increased at marginal additional cost. Therefore, the Pearl

City WWPS relocation will also include increasing the firm capacity to match peak design inflow conditions.

Figure 3-1 shows the collection system schematic. Alternative 1 modifications are provided in **Figure 3-2** and **Figure 3-3**. Tabulation of modifications for this alternative is provided in **Table 3-10**.

Figure 3-1. Alternative 1 Collection System Flow Schematic

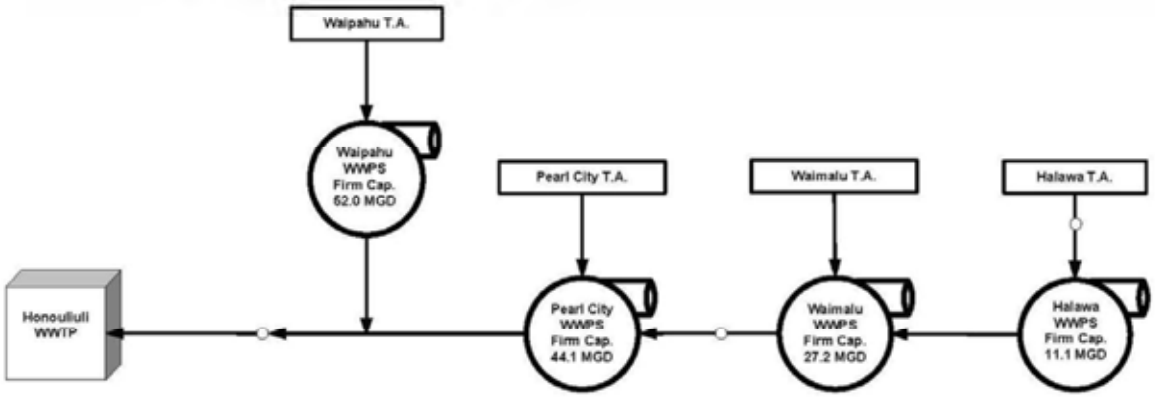


Table 3-10. Alternative 1 WWPS Capacity and Storage Requirements

Site	Firm WWPS Capacity (mgd)	WWPS Capacity Modifications	Storage Tank Volume (MG)
Halawa WWPS	11.1	None	None
Waimalu WWPS	27.2	Increase Capacity	None
Pearl City WWPS*	44.1*	Relocate and Increase Capacity	None
Waipahu WWPS*	52.0*	None	None

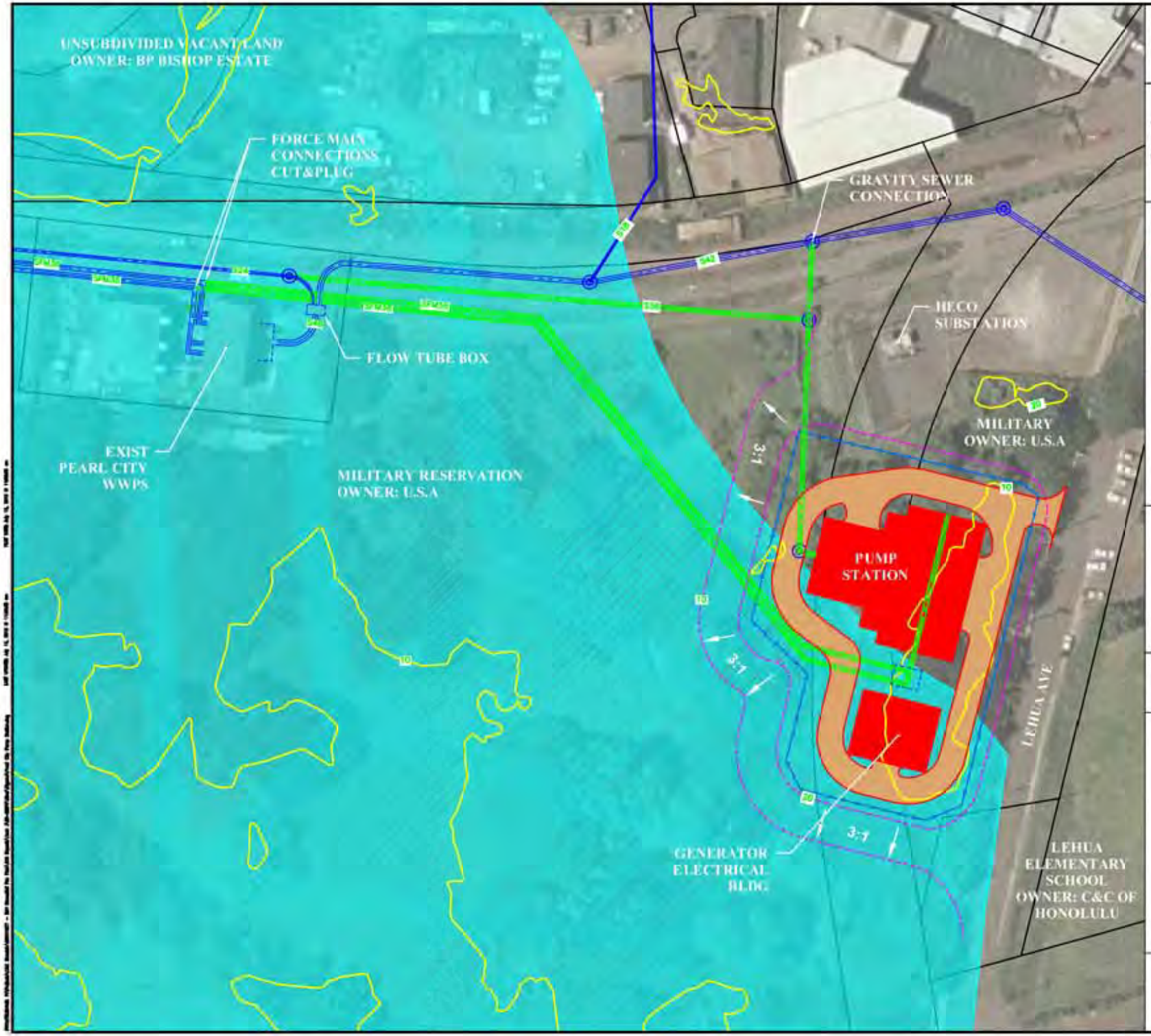
*Pearl City WWPS and Waipahu WWPS firm capacities are interdependent

Alternative 2 – Storage at Waimalu WWPS

As described for Alternative 1, the Waimalu WWPS firm capacity is not adequate to pass the 2-year, 6-hour storm flow without upstream surcharging. Under Alternative 2, the predicted surcharging would be relieved by diversion of excess flows to storage adjacent to the Waimalu WWPS.

It should be noted that this alternative does not address the need to relocate the Pearl City WWPS as identified in the current CCH CIP. For this alternative the existing Pearl City WWPS will remain in place and be retrofitted to provide flood protection for mechanical and electrical systems.

Figure 3-4 shows the collection system schematic. Alternative 2 modification configurations are provided in **Figure 3-5** and **Figure 3-6.** Tabulation of modifications for this alternative is provided in **Table 3-11**.



City and County of Honolulu

HONOULIULI/ WAIPAHU/PEARL CITY FACILITIES PLAN

Legend

- Fence Line
- Proposed Sewer Line
- Existing Sewer Line
- Limits of Grading
- Sewer Manhole
- Contour Elevation
- Contour Line
- 100 Year Flood Zone
- Property Boundary

KEY MAP - PEARL CITY

0 50 100

1 inch = 100 feet

FEA/EISPN

FIGURE 3-2

ALTERNATIVE 1 & 5
PEARL CITY
RELOCATION SITE

July 2010

1001 BISHOP ST, STE 1600
HONOLULU, HAWAII 96813

City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- TMK Parcel
- 100-yr Flood Zone
- WWPS Boundary

0 200
Feet
1 inch = 200 feet

FEA/EISPN

FIGURE 3-3

ALTERNATIVE 1,3, AND 6 WAIMALU WWPS REPLACEMENT

July 2010

AECOM
1001 BISHOP ST, STE 1600
HONOLULU, HAWAII 96813

Last Updated: April 19, 2010
File: P:\Projects\C&C Honolulu\60041627 - ENV Honolulu Fac Plan\400 Tech Information\414 Task 4\Tunnel Connections\GIS\8.5x11 Fig 5-16 Waimalu Tunnel Connections-A.mxd

Figure 3-4. Alternative 2 Collection System Flow Schematic

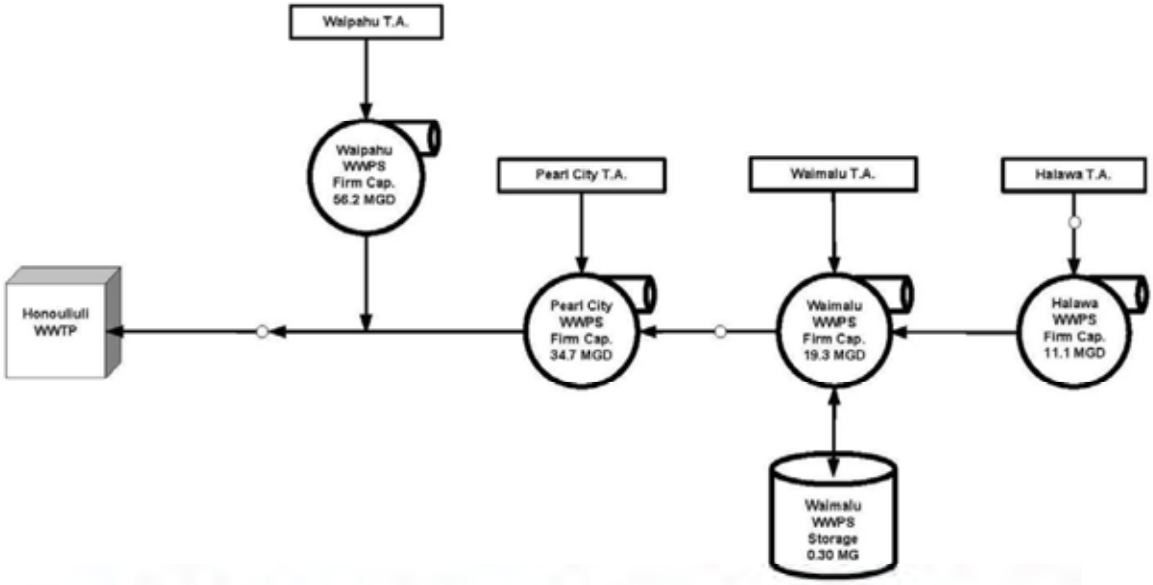


Table 3-11. Alternative 2 WWPS Capacity and Storage Requirements

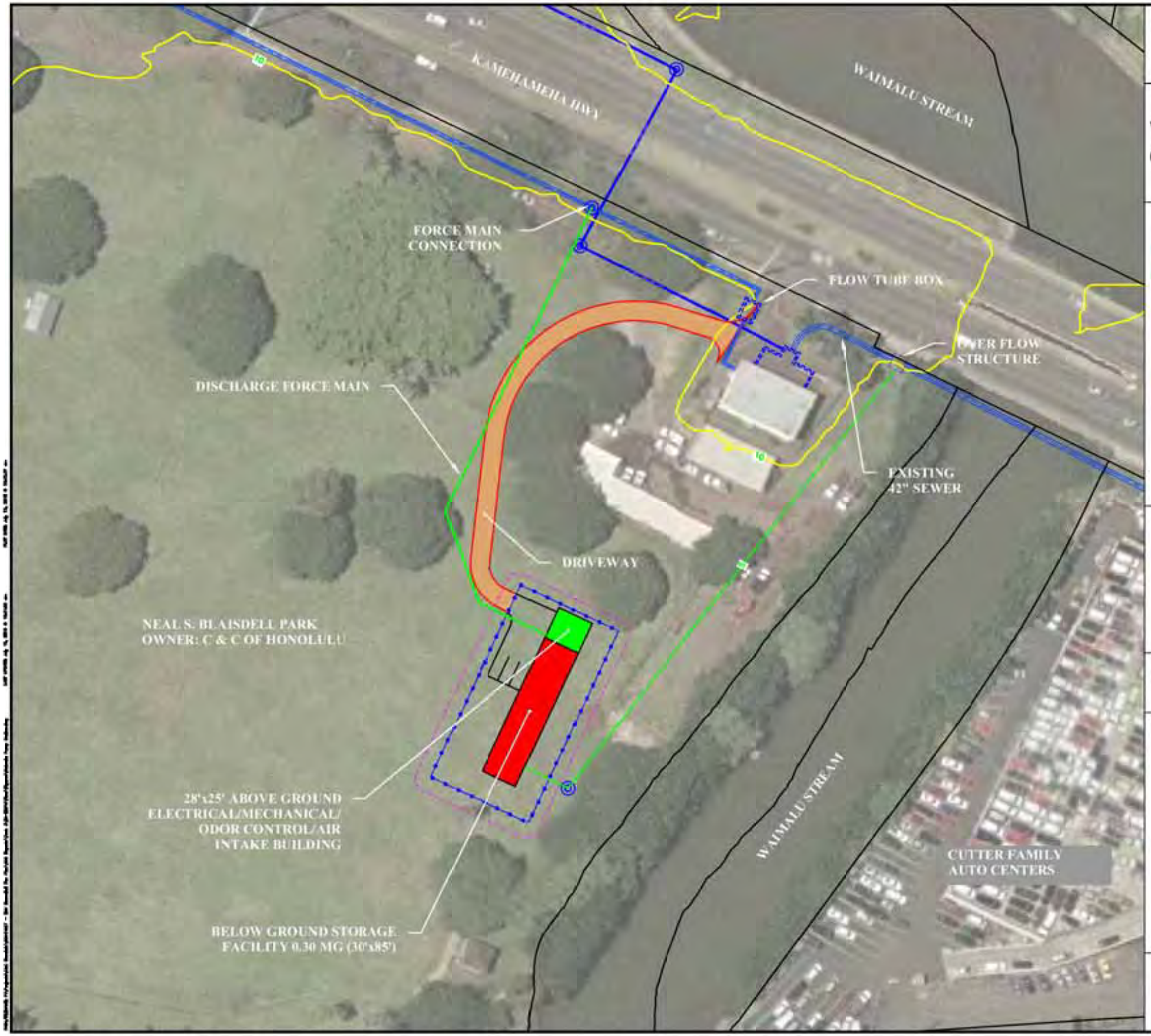
Site	Firm WWPS Capacity (mgd)	WWPS Capacity Modifications	Storage Tank Volume (MG)
Halawa WWPS	11.1	None	None
Waimalu WWPS	19.3	None	0.30
Pearl City WWPS*	34.7*	None	None
Waipahu WWPS*	56.2*	None	None

*Pearl City WWPS and Waipahu WWPS firm capacities are interdependent

Alternative 3 – Upsize Waimalu WWPS and storage at Pearl City WWPS

This alternative considers the existing pump configurations at each of the four pump stations and analyzes the storage requirements to modify the Waimalu WWPS to pass peak flows and subsequently store peak flows at the Pearl City WWPS in excess of pump firm capacities. The Halawa WWPS and Waipahu WWPS have sufficient firm capacity to pump all inflow during design conditions. However, the Waimalu WWPS firm capacity is not adequate to pass the maximum design flow event and will require increased pumping capacity for this alternative.

The Waimalu WWPS currently has three pumps installed with structural provisions in place for the installation of a fourth pump. With a fourth pump in place the firm capacity would be 24.6 mgd, which is slightly less than the design peak inflow rate of 27.2 mgd. It may be possible during the upgrade to make motor, VFD and/or impeller improvements to increase the capacity of the pumps this marginal amount. Additionally the amount of flow volume during the design rain event in excess of the 24.6 mgd capacity could be stored in the collection system without significant backwater conditions.



City and County of Honolulu

HONOULIULI/ WAIPAHU/PEARL CITY FACILITIES PLAN

Legend

- Fence Line
- Proposed Sewer Line
- Existing Sewer Line
- Limits of Grading
- Sewer Manhole
- Contour Elevation
- Contour Line
- Property Boundary

KEY MAP - PEARL CITY

0 50 100

1 inch = 100 feet

FEA/EISPN

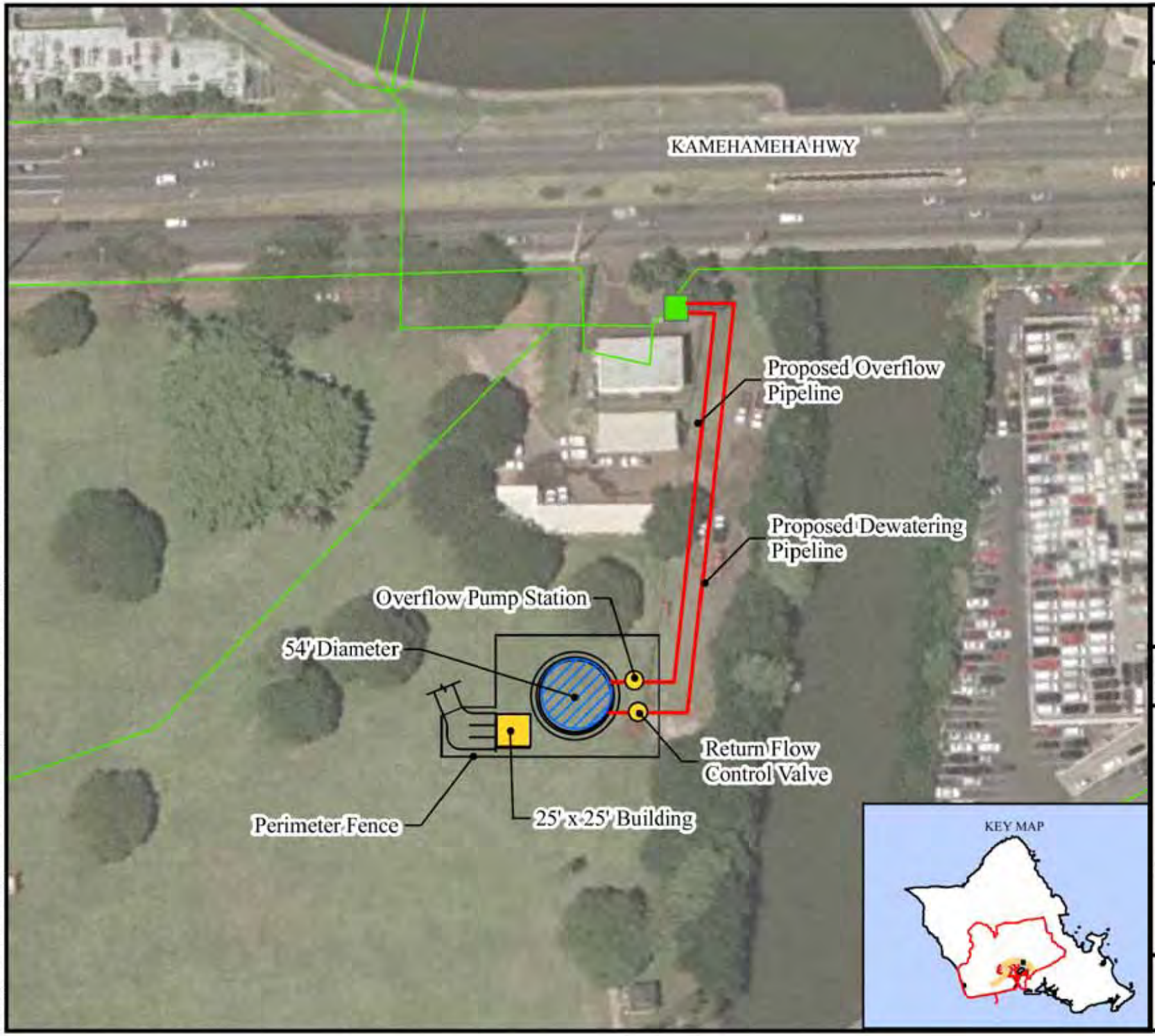
FIGURE 3-5

ALTERNATIVE 2 WAIMALU WWPS STORAGE CONFIGURATION 1

July 2010

AECOM

1001 BISHOP ST, STE 1600
HONOLULU, HAWAII 96813



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

Sewer Main

0 100

Feet

1 inch = 100 feet

FEA/EISPN

FIGURE 3-6

ALTERNATIVE 2
WAIMALU WWPS STORAGE CONFIGURATION 2

July 2010

AECOM
1001 BISHOP ST, STE 1600
HONOLULU, HAWAII 96813

Last Updated: April 19, 2010
File: P:\Projects\C&C Honolulu\60041627 - ENV Honolulu Fac Plan\400 Tech Information\414 Task 4\Tunnel Connections\GIS\8.5x11\Fig 5-16 Waimalu Tunnel Connection-A.mxd

Under existing conditions the Pearl City WWPS would be capable of passing the design peak flow. However, with an increase in pumping capacity of Waimalu WWPS the Pearl City WWPS located downstream will require storage for this alternative. Due to the relatively small volume required for storage at Pearl City WWPS the use of precast box culvert sections would likely provide adequate storage.

It should be noted that this alternative does not address the need to relocate the Pearl City WWPS as identified in the current CCH CIP. For this alternative the existing Pearl City WWPS will remain in place and be retrofitted to provide flood protection for mechanical and electrical systems.

Figure 3-7 shows the collection system schematic. Alternative 3 modifications are provided in **Figure 3-3** and **Figure 3-8.** Tabulation of modifications for this alternative is provided in **Table 3-12**.

Figure 3-7. Alternative 3 Collection System Flow Schematic

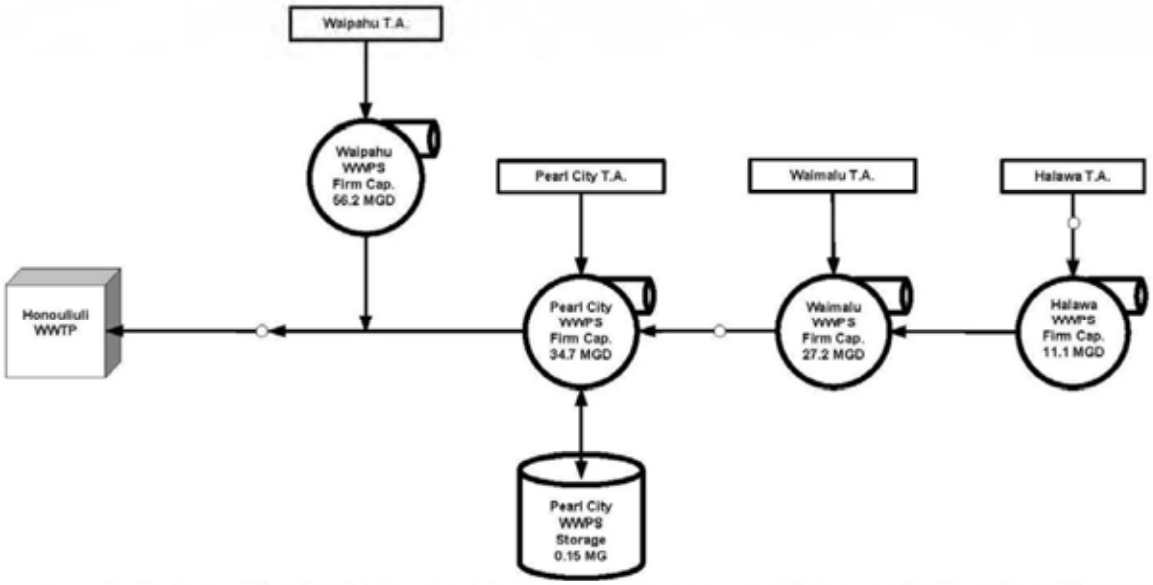


Table 3-12. Alternative 3 WWPS Capacity and Storage Requirements

Site	Firm WWPS Capacity (mgd)	WWPS Capacity Modifications	Storage Tank Volume (MG)
Halawa WWPS	11.1	None	None
Waimalu WWPS	27.2	Increase Capacity	None
Pearl City WWPS*	34.7*	None	0.15
Waipahu WWPS*	56.2*	None	None

*Pearl City WWPS and Waipahu WWPS firm capacities are interdependent

City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

Sewer Main

0 100

Feet

1 inch = 100 feet

FEA/EISPN

FIGURE 3-8

ALTERNATIVE 3 PEARL CITY STORAGE

July 2010

AECOM
1001 BISHOP ST, STE 1600
HONOLULU, HAWAII 96813

Last Updated: April 19, 2010
File: P:\Projects\C&C Honolulu\60041627 - ENV Honolulu Fac Plan\400 Tech Information\414 Task 4\Tunnel Connections\GIS\8.5x11 Fig 5-29 PC Tunnel Connections-A.mxd

Alternative 4 – Waimalu Relief Sewer and storage at Pearl City WWPS
This alternative would provide a gravity relief sewer to intercept a portion of the flow currently tributary to the Halawa and Waimalu WWPSs, conveying the flow directly to the Pearl City WWPS. The Waimalu Relief Sewer is intended to address current hydraulic deficiencies in the Waimalu trunk sewer along Kamehameha Highway, and the Waimalu WWPS and force main. This sewer would convey diverted wastewater flow from Halawa Heights and Newtown (relieving flow Halawa WWPS and Waimalu WWPS) to the Pearl City trunk sewer.

No storage or additional pumping capacity would be required at the Halawa or Waipahu WWPSs under this alternative. While the Waimalu WWPS firm capacity is not adequate to pass the current peak flow from the 2-year, 6-hour storm, with the relief sewer in place the Waimalu WWPS would have sufficient capacity. No additional storage or pumping capacity would therefore be required at Waimalu WWPS under this alternative.

Under existing conditions the Pearl City WWPS would be capable of passing the design peak flow. However, with an increase in peak inflows from the Waimalu Relief Sewer the flow to the Pearl City WWPS would exceed the existing capacity in the 2-year, 6-hour storm. However, as shown in Section 3 above, sufficient in-system storage would be available in the proposed relief sewer to avoid the need for additional off-line storage at Pearl City for this alternative.

It should be noted that this alternative does not address the need to relocate the Pearl City WWPS as identified in the current CCH CIP. For this alternative the existing Pearl City WWPS will remain in place and be retrofitted to provide flood protection for mechanical and electrical systems.

Figure 3-9 shows the collection system schematic. Alternative 4 modifications are provided in **Figure 3-10**. Tabulation of modifications for this alternative is provided in **Table 3-13.**

Figure 3-9. Alternative 4 Collection System Flow Schematic

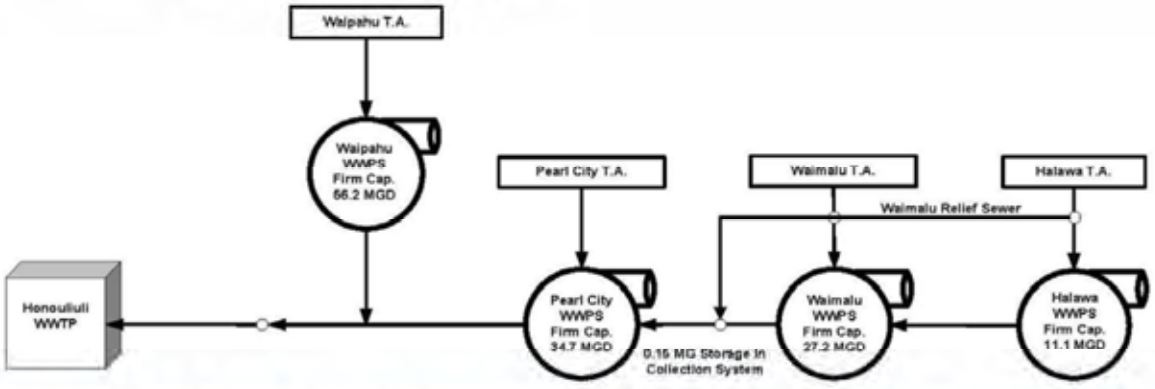
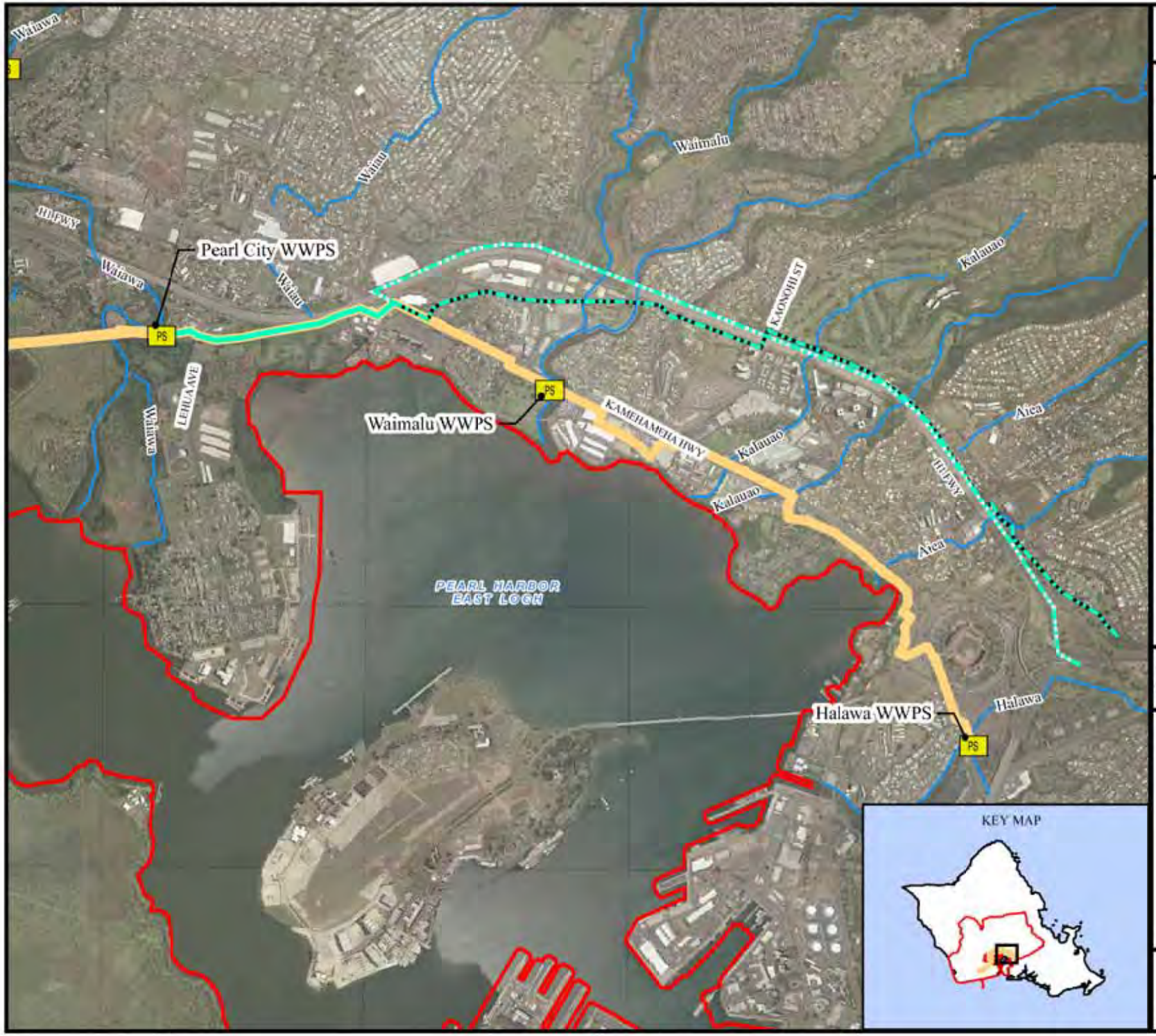


Table 3-13. Alternative 4 WWPS Capacity and Storage Requirements

Site	Firm WWPS Capacity (mgd)	WWPS Capacity Modifications	Storage Tank Volume (MG)
Halawa WWPS	11.1	None	None
Waimalu WWPS	19.3	None	None
Pearl City WWPS*	34.7*	None	None (0.15 MG in-system storage provided)
Waipahu WWPS*	56.2*	None	None

*Pearl City WWPS and Waipahu WWPS firm capacities are interdependent



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Honouliuli Sewershed
- PS — Wastewater Pump Station
- Pearl City Trunk Sewer
- Waimalu B Alignment
- Waimalu A Alignment
- Phase I Area
- Stream

0 2,500
Feet
1 inch = 2,500 feet

FEA/EISPN

FIGURE 3-10

ALTERNATIVE 4 AND 5 WAIMALU RELIEF SEWER

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Alternative 5 – Waimalu Relief Sewer and relocate Pearl City WWPS
This alternative is similar to Alternative 4, except that it includes relocation of the Pearl City WWPS. As with Alternative 4, no changes would be required at the Halawa, Waimalu, or Waipahu WWPS. Since this alternative includes the relocation of the Pearl City WWPS, the capacity of the WWPS could be readily increased to match the increase in peak flows to Pearl City resulting from the Waimalu Relief Sewer, eliminating the need to utilize in-system storage to attenuate the peak flow.

Figure 3-11 shows the collection system schematic. Alternative 5 modifications are provided in **Figure 3-2** and **Figure 3-10.** Tabulation of modifications for this alternative is provided in **Table 3-14.**

Figure 3-11. Alternative 5 Collection System Flow Schematic

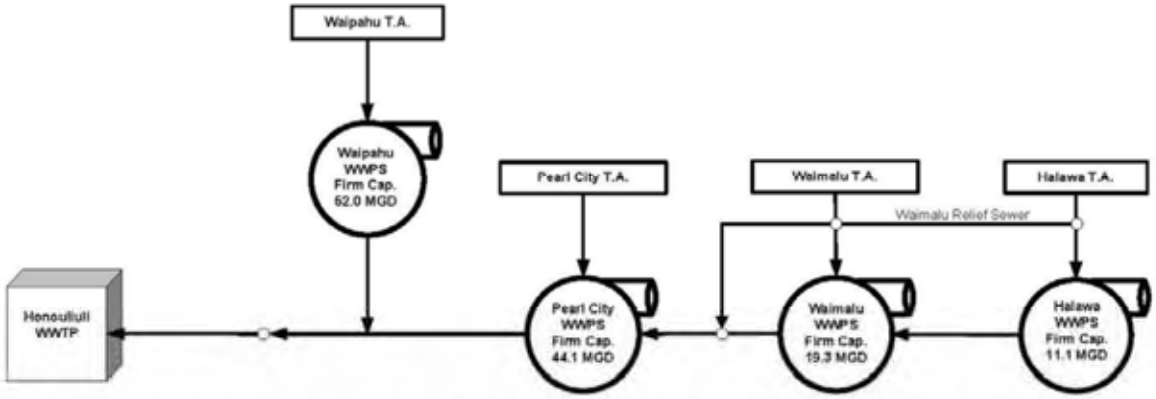


Table 3-14. Alternative 5 WWPS Capacity and Storage Requirements

Site	Firm WWPS Capacity (mgd)	WWPS Capacity Modifications	Storage Tank Volume (MG)
Halawa WWPS	11.1	None	None
Waimalu WWPS	19.3	None	None
Pearl City WWPS*	44.1*	Relocate and Increase Capacity	None
Waipahu WWPS*	52.0*	None	None

*Pearl City WWPS and Waipahu WWPS firm capacities are interdependent

Alternative 6 – Additional force main from Waipahu WWPS and upsize Waimalu WWPS
This alternative evaluates providing an additional force main to the existing dual force main system shared by the Pearl City and Waipahu WWPSs. Specifically, one additional force main would be provided from Waipahu WWPS to the point of transition to gravity flow. The additional force main would be dedicated to Waipahu WWPS under normal operating conditions and the remaining dual force main system would be utilized by the Pearl City WWPS. Under emergency, maintenance or repair conditions the flows could be shared between any of the force mains remaining in service through use of a new flow control valving system located at the Waipahu WWPS.

By providing dedicated force main systems for each WWPS during normal operating conditions the WWPSs could operate independently. This scenario would reduce the total discharge head (TDH) on the pumps at the Pearl City WWPS. Assuming the new 48-inch Waipahu WWPS force main was provided, the new firm capacities would be sufficient to pass the maximum design inflow rates at each WWPS.

Halawa WWPS, Pearl City WWPS and Waipahu WWPS would all have sufficient firm capacity to pump all inflow during the 2-year, 6-hour design storm. However, the Waimalu WWPS firm capacity will not be adequate to pass the maximum design flow event and will require increased pumping capacity for this alternative.

The Waimalu WWPS currently has three pumps installed with structural provisions in place for the installation of a fourth pump. With a fourth pump in place the firm capacity would be 24.6 mgd, which is slightly less than the design peak inflow rate of 27.2 mgd. It may be possible during the upgrade to make motor, VFD and/or impeller improvements to increase the capacity of the pumps this marginal amount. Additionally the amount of flow volume during the design rain event in excess of the 24.6 mgd capacity could be stored in the collection system without significant backwater conditions. With the additional force main, the Pearl City WWPS would still have sufficient capacity to pump the additional flow from the Waimalu WWPS without requiring off-line storage.

It should be noted that this alternative does not address the need to relocate the Pearl City WWPS as identified in the current CCH CIP. For this alternative the existing Pearl City WWPS will remain in place and be retrofitted to provide flood protection for mechanical and electrical systems.

Figure 3-12 shows the collection system schematic. Alternative 6 modifications are provided in **Figure 3-3** and **Figure 3-13.** Tabulation of modifications for this alternative is provided in **Table 3-15.**

Figure 3-12. Alternative 6 Collection System Flow Schematic

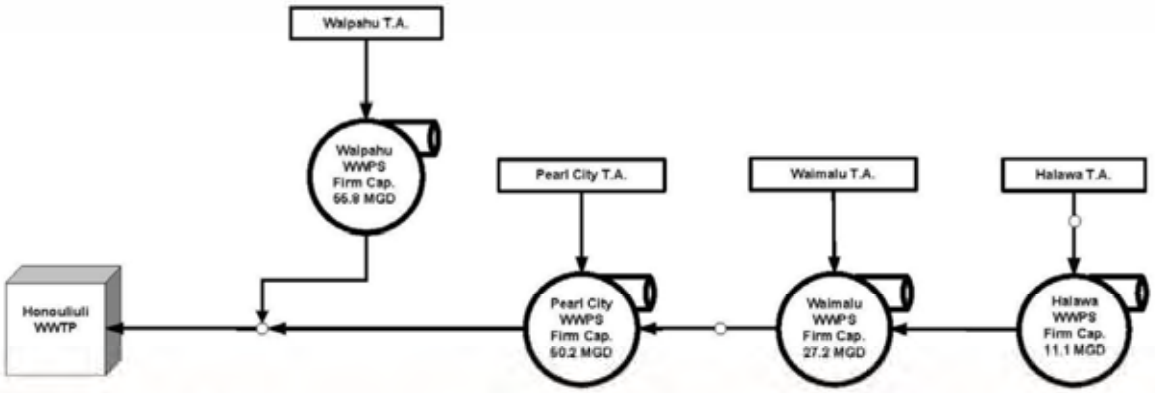
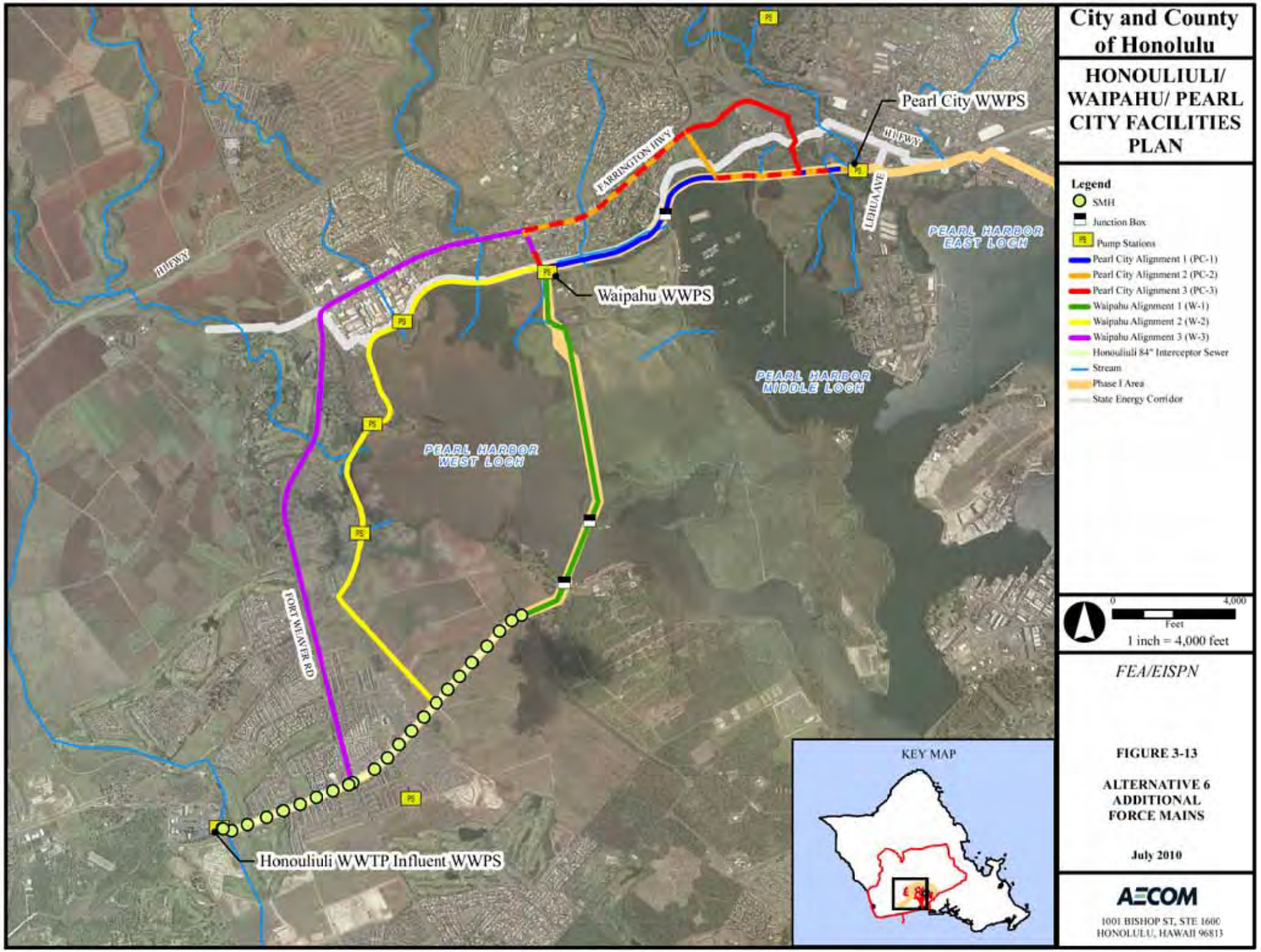


Table 3-15. Alternative 6 WWPS Capacity and Storage Requirements

Site	Firm WWPS Capacity (mgd)	WWPS Capacity Modifications	Storage Tank Volume (MG)
Halawa WWPS	11.1	None	None
Waimalu WWPS	27.2	Increase Capacity	None
Pearl City WWPS*	50.0*	Dedicated Existing Force Mains	None
Waipahu WWPS*	55.8*	Dedicated 48-inch Force Main	None

*By providing a new force main dedicated to Waipahu WWPS and dedicating the existing dual force mains for Pearl City, firm capacities of each WWPS are independent.

Additional details of the alternatives, comparisons and recommendations will be provided in the DEIS.



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- SMH
- Junction Box
- PS Pump Stations
- Pearl City Alignment 1 (PC-1)
- Pearl City Alignment 2 (PC-2)
- Pearl City Alignment 3 (PC-3)
- Waipahu Alignment 1 (W-1)
- Waipahu Alignment 2 (W-2)
- Waipahu Alignment 3 (W-3)
- Honouliuli 84" Interceptor Sewer
- Stream
- Phase I Area
- State Energy Corridor

0 4,000 Feet

1 inch = 4,000 feet

FEA/EISPN

FIGURE 3-13

ALTERNATIVE 6 ADDITIONAL FORCE MAINS

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3.7.3.3 Gravity Sewer Tunnel

A GST alternative would involve both the conveyance and storage of wastewater to the Honouliuli WWTP. The conveyance portion would be used only to transport the wastewater to the Honouliuli WWTP, and the storage portion would be used to both transport wastewater to the WWTP and store and equalize wet weather flows. Additional beneficial aspects of a GST are:

- Elimination of the large WWPS and force main systems along the route resulting in reduced operation and maintenance requirements.
- Reduction in the design peak flow through the Honouliuli WWTP, thereby reducing the size of process units and improving reliability of treatment.

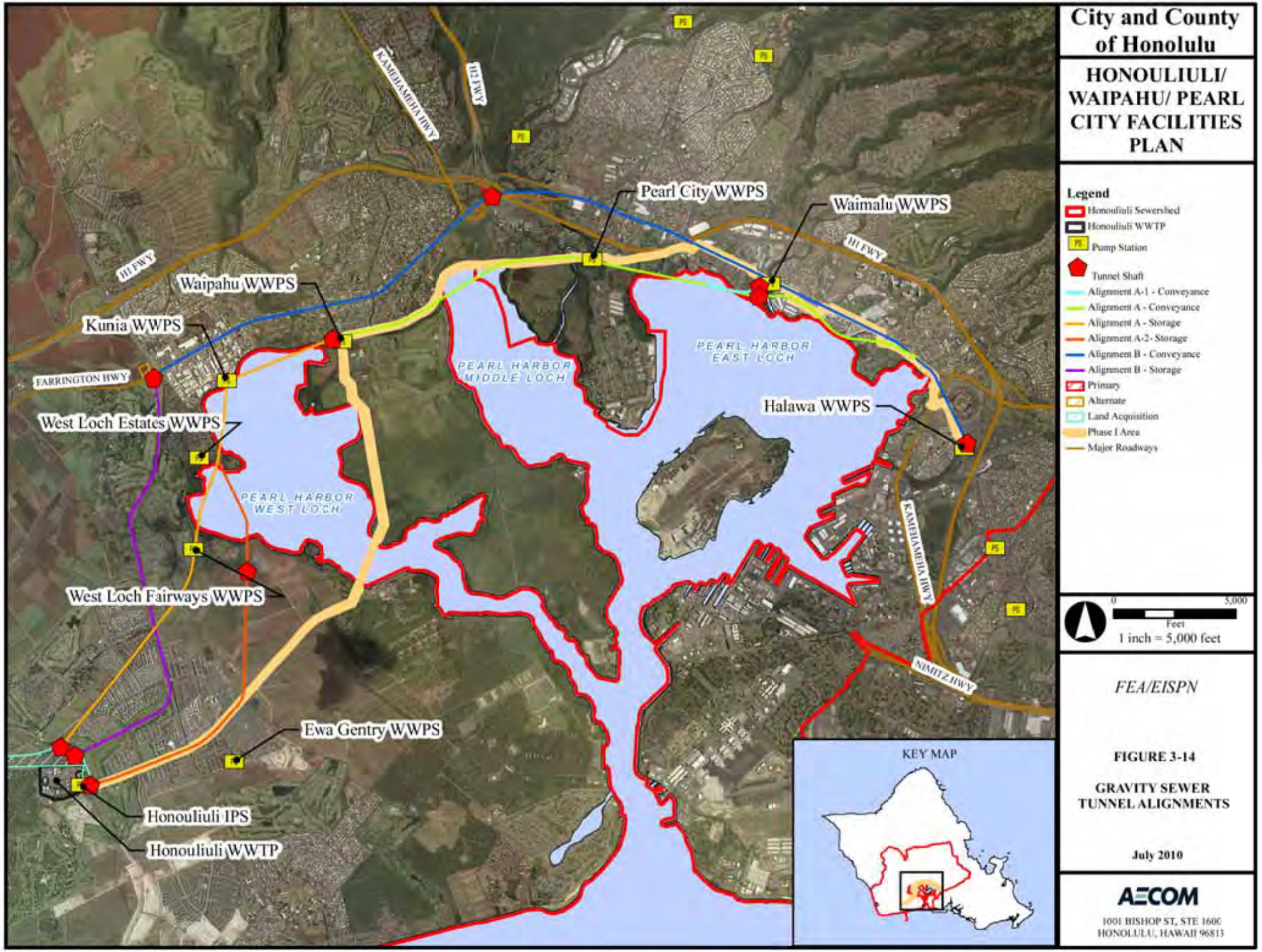
In addition to the Phase I WWPSs, the GST could affect several other WWPSs in the sewershed including the Ewa Gentry WWPS, West Loch Fairways WWPS, West Loch Estates WWPS and Kunia WWPS. In general, wastewater flow from WWPSs near the GST would be diverted into the tunnel via connecting sewers. The proposed drop shafts are generally located adjacent to the GST. Once the GST is in service, the WWPSs that have had their tributary flows diverted to the tunnel would be decommissioned.

There are two primary alternative alignments for the GST (Alignment A and Alignment B), with a couple subalternate alignments (Alignment A-1 and Alignment A-2). These alignments are shown in **Figure 3-14**. The initial alignment was based on previously-conducted preliminary planning work by others. For the purposes of this report, this alignment has been designated as "Alignment B."This alignment includes two separate segments: an 18,690-lineal-foot (LF) downstream storage segment, and a 39,530-LF upstream conveyance segment. The proposed tunnel alignment was laid out at a slope of 0.001 ft/ft, with the downstream invert at Honouliuli WWTP established at El -84. Based on matching inverts at the junction of the storage and conveyance tunnels, the upstream invert was set at El -18.4 using the given slope. Based on preliminary evaluations, the anticipated finished tunnel diameters were 19 feet and 7 feet for the storage and conveyance segments, respectively.

The depth of the tunnel was intended to provide at least one tunnel diameter of cover for the large-diameter storage tunnel, and two diameters of cover for the small-diameter conveyance tunnel. Based on the evaluation of regional geology, it was anticipated that both the storage and conveyance tunnels would be primarily soft ground tunnels, which would be mined using earth pressure balance tunnel boring machines (TBMs).

In general, this alignment follows public roadways, including Kamehameha Highway, Farrington Highway, and Fort Weaver Road. The downstream end of the storage tunnel also passes below the privately owned Coral Creek Golf Course. The portions of conveyance tunnel that follow the highways generally share the same corridor as the proposed Honolulu High-Capacity Transit Corridor Project (HHCTCP).

As shown on **Figure 3-14** this tunnel alignment is located a significant distance (in several cases more than 2,000 LF) from the existing pump stations where existing flows need to be picked up. As a result, a substantial length of connecting sewers will be necessary to convey flows to drop shafts and into the tunnels.


KAMEHAMEHA HWY
H2 FWY
H1 FWY
Pearl City WWPS
Waimalu WWPS
Waipahu WWPS
Kunia WWPS
FARRINGTON HWY
West Loch Estates WWPS
West Loch Fairways WWPS
Ewa Gentry WWPS
Honouliuli IPS
Honouliuli WWTP
PEARL HARBOR MIDDLE LOCH
PEARL HARBOR EAST LOCH
PEARL HARBOR WEST LOCH
Halawa WWPS
NIMITZ HWY
KEY MAP
City and County of Honolulu
HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN
Legend
Honouliuli Sewershed
Honouliuli WWTP
Pump Station
Tunnel Shaft
Alignment A-1 - Conveyance
Alignment A - Conveyance
Alignment A - Storage
Alignment A-2- Storage
Alignment B - Conveyance
Alignment B - Storage
Primary
Alternate
Land Acquisition
Phase I Area
Major Roadways
0
5,000
Feet
1 inch = 5,000 feet
FEA/EISPN
FIGURE 3-14
GRAVITY SEWER TUNNEL ALIGNMENTS
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A substantial volume of subsurface information was obtained for the proposed transit project as it is related to the Alignment B alternative. Upon evaluation of the available geotechnical data early in the study period, it was determined that very shallow bedrock is found along a substantial length of the Alignment B corridor. Furthermore, it was also realized that a deep foundation system for the elevated light rail system will be required along the entire length of the shared corridor. As a result, the alignment of the conveyance tunnel will need to be refined appropriately to avoid the foundations.

Based on this information coupled with the significant lengths of connecting sewers required to connect pump stations with the tunnels, an alternative corridor for a tunnel alignment was identified which would avoid some if not all of these constraints. This alignment alternative has been designated as "Alignment A". Alignment A consists of following an abandoned rail corridor and bike path, which essentially loops around the harbor and falls much closer to the existing pump stations than Alignment B (see **Figure 3-14**). This alignment corridor was thought to present the following benefits:

- Significant reduction in length of connecting sewers, without increasing overall tunnel length;
- Significant reduction in third party risks associated with fewer structures and utilities in close proximity to tunnel alignment;
- Probable deeper bedrock associated with being closer to the harbor and farther down on the flanks of the old Koolau volcano.

The subalternate alignments generally follow Alignment A. Alignment A-1 was developed as an alternative if tunneling under the energy corridor, tunnel boring machine turn radius or proximity to buildings are issues. Alignment A-2 was developed as an alternative if tunneling under the Oahu railway (near the Honouliuli WWTP) is an issue. However, preliminary investigations indicate that it is possible to construct Alignment A.

Using year 2150 basis of design flows and a GST pump out peaking factor of 175% of ADWF for flow through the Honouliuli WWTP, a hydraulic analysis of the GST was performed. The hydraulic analysis considered such issues as flow velocities, inflow control, surge assessment and storage capacity. A 12-foot inside diameter storage/8-foot inside diameter conveyance tunnel represented the smallest tunnel configuration likely to be cost effective, and the modeling showed that a tunnel of that size would have sufficient capacity to store the excess flow under the conditions of a 1.75 peaking factor at the Honouliuli WWTP. The peak hydraulic profile under design storm conditions is shown in **Figure 3-15**.

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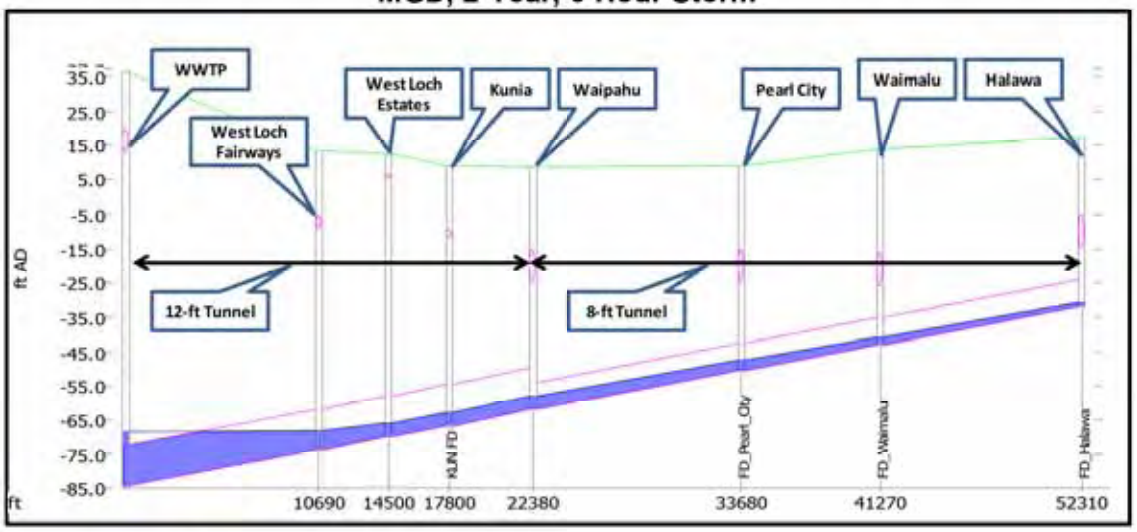
Figure 3-15. Profile of 12-FT/8/FT Tunnel, 2150 Conditions, Peak Treatment Rate of 101 MGD, 2-Year, 6-Hour Storm



3.7.4 Treatment System Alternatives

Various alternatives are being developed and evaluated for the Honouliuli WWTP to address future anticipated levels of treatment and influent flows.

3.7.4.1 No Action

The "No Action" alternative involves no improvements to the Honouliuli WWTP with continued design flow capacities and level of treatment.

3.7.4.2 Upgrade and Modification of Existing Treatment System

Alternative configurations vary based on the lower anticipated peak flows from the GST verses the higher peak flows anticipated if using the existing collection system with modifications. Various treatment processes types and configurations are being developed for evaluation. In addition to the liquid treatment process, biosolids treatment is included in the evaluation of alternatives. The projected future flows to the WWTP are summarized in **Table 3-6** below.

Table 3-16. Projected Future WWTP Flows – Year 2030

Flow Condition	With Storage Tunnel	Without Storage Tunnel
Design Average Flow (mgd)	40	40
Average Wet Weather Flow (mgd)	64	64
Design Maximum Flow (mgd)	70	70
Design Peak Flow (mgd)	70	125
Rate Limiting Flow (mgd)		112*

*Based off record drawings of WWTP Outfall (dated 1977)

The storage tunnel will control peak flows discharged to the WWTP limiting the peak hour flow to match the maximum daily flow of 70 mgd. Without the storage tunnel the peak flow from the conveyance system will follow the projected diurnal flow pattern, with projected future peak flows of up to 125 mgd entering the Influent Pump Station in response to a 2-year, 6-hour storm

event. The limiting condition for plant hydraulics is 112 mgd, the peak flow through the existing ocean outfall system.

3.7.4.2.1 Primary Treatment

The existing WWTP has four circular primary clarifiers each 145 feet in diameter with a sidewater depth of 10 feet. The capacity of the primary clarifiers is 44 mgd design average flow or 148 mgd design peak flow. No additional primary clarifier capacity is required for alternatives that include the storage tunnel. One additional primary clarifier is required for alternatives that do not include tunnel storage to handle projected future peak flows of 125 mgd with one unit out of service.

New Circular Tanks

The WWTP currently uses four circular primary clarifiers (3 + 1 standby) each 145 feet in diameter with a minimum sidewater depth of 10 feet.

The capacity of the existing Primary Clarifiers is sufficient for alternatives with tunnel storage that will provide equalization to limit peak flows to 70 mgd.

The alternatives without tunnel storage have a projected future peak flow of approximately 125 mgd. This will require construction of one additional circular primary clarifier 145 feet in diameter, with a minimum sidewater depth of 10 feet.

New Rectangular Tanks

Rectangular Primary Clarifiers will be considered for the upgrade and expansion of the WWTP where the existing circular Primary Clarifiers would be modified and used as Secondary Clarifiers. Use of rectangular Primary Clarifiers would reverse the existing flow at the Honouliuli WWTP, which is hydraulically beneficial. The storage tunnel requires four Primary Clarifiers (3+1 standby) for treating peak flows of 70 mgd. Each Primary Clarifier would be 60 feet wide by 250 feet long with a minimum sidewater depth of 10 feet.

3.7.4.2.2 Secondary Treatment

The purpose of this section is to evaluate the facility requirements for Secondary Treatment Alternatives at the Honouliuli WWTP if needed. The facility will be designed to accommodate projected future flows and loadings for year 2030, and provisions will be considered for future expansion. Expansion of the existing Honouliuli WWTP will likely require the CITY to acquire additional land near the WWTP. The ideal property is the parcel adjacent (TMK 9-1-069:003) to the Honouliuli WWTP is shown in **Figure 3-16**.

Each alternative will be evaluated for performance, O&M requirements, energy consumption, and required ancillary support system requirements. A life cycle cost analysis will also be prepared for each alternative. The life cycle cost analysis and evaluation of O&M considerations will be used to select the recommended Secondary Treatment process.

The alternatives for secondary treatment are as follows with the expansions shown on the adjacent property:

- Alternative No. 1 – Trickling Filter/Solids Contact (TF/SC) with GST
- Alternative No. 2 – Activated Sludge with Anoxic Selectors with GST
- Alternative No. 3 – Activated Sludge with Anoxic Selectors without GST Configuration 1
- Alternative No. 4 – Activated Sludge with Anoxic Selectors without GST Configuration 2
- Alternative No. 5 – Activated Sludge with Anoxic Selectors Reverse Flow with GST
- Alternative No. 6 – Activated Sludge with Anoxic Selectors Reverse Flow without GST

City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Land Acquisition
- TMK Parcel

0 500 Feet

1 inch = 500 feet

FEA/EISPN

FIGURE 3-16

PROPERTY ADJACENT TO HONOULIULI WWTP

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- Alternative No. 7 – Activated Sludge with Anoxic Selectors and Membrane Bioreactors (MBR)

Alternative 1 – Trickling Filters and Solids Contact with GST
Honouliuli WWTP Secondary Treatment Alternative 1 – Trickling Filters/Solids Contact (TF/SC) with GST would involve constructing additional tricking filters, solids contact basins, secondary clarifiers, and ancillary support facilities to provide full secondary treatment for projected future flows in year 2030.

Major components of this alternative include:
- New wet weather storage tunnel
- New IPS
- New influent screening
- Reuse four existing primary clarifiers
- Reuse two existing trickling filters, four existing solids contact basins and two existing secondary clarifiers
- Six new trickling filters
- Eight new solids contact basins
- Eight new secondary clarifiers

The ancillary facilities related to Secondary Treatment Alternative 1 include the following:
- Three new trickling filter IPS
- Two new solids contact basins blower building
- New secondary clarifier return activated sludge and waste bottom sludge pumping systems
- Trickling filter ventilation fans and odor control system
- Yard piping
- Electrical power and controls
- SCADA system

Figure 3-17 shows a preliminary site layout for Alternative 1.

Alternative 2 – Activated Sludge with Anoxic Selectors with GST
Secondary Treatment Alternative 2 – Activated Sludge with Anoxic Selectors with GST would involve constructing new activated sludge aeration tanks, secondary clarifiers, and ancillary support facilities to provide full secondary treatment for projected future flows in year 2030.

Major components of this alternative include:
- New wet weather storage tunnel
- New IPS
- New influent screening
- Reuse four existing primary clarifiers
- Six new anoxic selectors
- Six new activated sludge aeration tanks and diffusers
- Six new secondary clarifiers

The ancillary facilities related to Secondary Treatment Alternative 2 include the following:
- Anoxic tank blower building
- Secondary clarifier return activated sludge & waste activated sludge pumping systems

CORAL CREEK GOLF COURSE

EWA INDUSTRIAL PARK

FORD ISLAND VENTURES, LLC (LESSEE) OWNER: USA

HONOULIULI WATER RECYCLING FACILITY (HWRF) (BOARD OF WATER SUPPLY)

GENTRY INVESTMENT PROPERTIES

OWNER: USA

STORMWATER DETENTION AREA

EXISTING STRUCTURES

1 Influent PS
2 Grit Tanks
3 Preaeration Tanks
4 Primary Clarifier
5 Gravity Thickeners
6 Dewatering Building
7 Blower Building
8 Primary Digester
9 Secondary Digester
10 Secondary Sludge Thickening
11 Blend Tanks
12 Decant Tanks
13 Dewatering
14 Incinerator
15 Thermal Conditioning
16 Hydroclear Sand Filter
17 Microfiltration/R0 Building
18 R0 Storage Tank
19 Reuse Pump Station
20 R1 Storage Tank
21 R1 Transfer PS/UV Channel
22 R1 Product Delivery PS
23 Septage Receiving Station
24 Effluent Channels
25 Chlorination Building
26 Maintenance Building
27 Control Building
28 Digester Control Building
29 Blotower PS
30 Blotower
31 Emergency Generator
32 Solids Contactor/ Solids Reaeration Tanks
33 Secondary Clarifier

City and County of Honolulu

HONOULIULI/WAIPAHU/ PEARL CITY FACILITIES PLAN

LEGEND

TMK Parcel
Sewer Main

PROPOSED STRUCTURES

1 Secondary Clarifier
2 Solids Contact Basin
3 Trickling Filters
4 Ancillary
5 Gas Handling & Cogeneration
6 Anaerobic Digester
7 Storage Building
8 Administration/Lab Building
9 Influent Screening
10 Tunnel Shaft 1A IPS
11 Tunnel Shaft 1B IPS
12 Tunnel Shaft 1C IPS

KEY MAP - OAHU

0 125 250

1 inch = 250 feet

FEA/EISPN

FIGURE 3-17

ALTERNATIVE 1 TRICKLING FILTERS & SOLIDS CONTACT WITH GST

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- Anoxic tank mixing systems
- Yard piping
- Electrical power and controls
- SCADA system

Figure 3-18 shows a preliminary site layout for Alternative 2.

Alternative 3 – Activated Sludge with Anoxic Selectors without GST Configuration 1
Secondary Treatment Alternative 3 – Activated Sludge with Anoxic Selectors without GST Configuration 1 would involve constructing new activated sludge aeration tanks, secondary clarifier, and ancillary support facilities to provide full secondary treatment for projected future flows in year 2030.

Major components of this alternative include:

- IPS Expansion
- Influent screening expansion
- Reuse four existing primary clarifiers
- Six new anoxic selectors
- Six new activated sludge aeration tanks and diffusers
- Six new secondary clarifiers
- New effluent pump station

The ancillary facilities related to Secondary Treatment Alternative 3 include the following:

- Aeration tank blower building
- Secondary clarifier return activated sludge & waste activated sludge pumping systems
- Anoxic tank mixing system
- Yard piping
- Electrical power and controls
- SCADA System

Figure 3-19 shows preliminary site layouts for Alternative 3.

Alternative 4 – Activated Sludge with Anoxic Selectors without GST Configuration 2
Secondary Treatment Alternative 4 – Activated Sludge with Anoxic Selectors without GST Configuration 2 would involve constructing new activated sludge aeration tanks, secondary clarifier, and ancillary support facilities to provide full secondary treatment for projected future flows in year 2030.

Major components of this alternative include:

- IPS Expansion
- Influent screening expansion
- Reuse four existing primary clarifiers
- Six new anoxic selectors
- Six new activated sludge aeration tanks and diffusers
- Six new secondary clarifiers
- New equalization storage tank and pump station

CORAL CREEK GOLF COURSE

EWA INDUSTRIAL PARK

FUTURE EXPANSION AREA FOR HONOULIULI WATER RECYCLING FACILITY

SHADED AREA TO BE DEMOLISHED& DESIGNATED FOR FUTURE GROWTH

FORD ISLAND VENTURES, LLC (LESSEE) OWNER: USA

HONOULIULI WATER RECYCLING FACILITY (HWRF) (BOARD OF WATER SUPPLY)

STORMWATER DETENTION AREA

GENTRY INVESTMENT PROPERTIES

OWNER: USA

EXISTING STRUCTURES

1 Influent PS
2 Grit Tanks
3 Preaeration Tanks
4 Primary Clarifier
5 Gravity Thickeners
6 Dewatering Building
7 Blower Building
8 Primary Digester
9 Secondary Digester
10 Secondary Sludge Thickening
11 Blend Tanks
12 Decant Tanks
13 Dewatering
14 Incinerator
15 Thermal Conditioning
16 Hydroclear Sand Filter
17 Microfiltration/R0 Building
18 R0 Storage Tank
19 Reuse Pump Station
20 R1 Storage Tank
21 R1 Transfer PS/UV Channel
22 R1 Product Delivery PS
23 Septage Receiving Station
24 Effluent Channels
25 Chlorination Building
26 Maintenance Building
27 Control Building
28 Digester Control Building
29 Blotower PS
30 Blotower
31 Emergency Generator
32 Solids Contactor/ Solids Reaeration Tanks
33 Secondary Clarifier

City and County of Honolulu

HONOULIULI/WAIPAHU/ PEARL CITY FACILITIES PLAN

LEGEND

TMK Parcel
Sewer Main

PROPOSED STRUCTURES

1 Secondary Clarifier
2 Activated Sludge/Anoxic Selectors
3 Pump and Blower Building
4 Gas Handling & Cogeneration
5 Anaerobic Digester
6 Storage Building
7 Administration/Lab Building
8 Influent Screening
9 Tunnel Shaft 1A IPS
10 Tunnel Shaft 1B IPS
11 Tunnel Shaft 1C IPS

KEY MAP - OAHU

0 125 250

1 inch = 250 feet

FEA/EISPN

FIGURE 3-18

ALTERNATIVE 2
ACTIVATED SLUDGE
WITH ANOXIC SELECTORS
WITH GST

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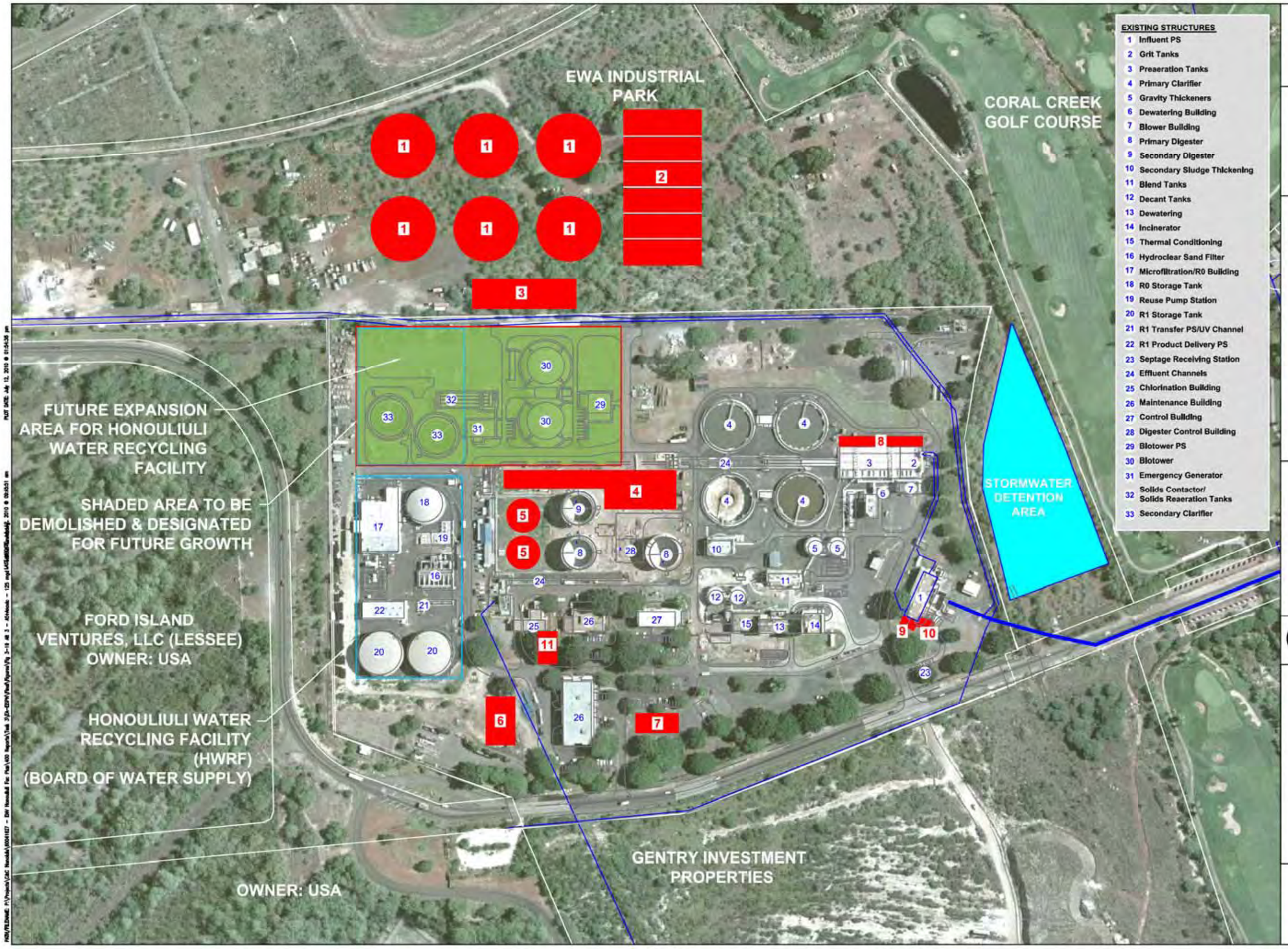


EXISTING STRUCTURES

1 Influent PS
2 Grit Tanks
3 Preaeration Tanks
4 Primary Clarifier
5 Gravity Thickeners
6 Dewatering Building
7 Blower Building
8 Primary Digester
9 Secondary Digester
10 Secondary Sludge Thickening
11 Blend Tanks
12 Decant Tanks
13 Dewatering
14 Incinerator
15 Thermal Conditioning
16 Hydroclear Sand Filter
17 Microfiltration/R0 Building
18 R0 Storage Tank
19 Reuse Pump Station
20 R1 Storage Tank
21 R1 Transfer PS/UV Channel
22 R1 Product Delivery PS
23 Septage Receiving Station
24 Effluent Channels
25 Chlorination Building
26 Maintenance Building
27 Control Building
28 Digester Control Building
29 Blotower PS
30 Blotower
31 Emergency Generator
32 Solids Contactor/ Solids Reaeration Tanks
33 Secondary Clarifier

City and County of Honolulu

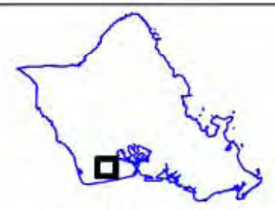
HONOULIULI/WAIPAHU/ PEARL CITY FACILITIES PLAN

LEGEND

TMK Parcel
Sewer Main

PROPOSED STRUCTURES

1 Secondary Clarifier
2 Activated Sludge/Anoxic Selectors
3 Pump and Blower Building
4 Gas Handling & Cogeneration
5 Anaerobic Digester
6 Storage Building
7 Administration/Lab Building
8 Grit Chamber + Preaeration
9 IPS Expansion
10 Influent Screening Expansion
11 Effluent Pump Station



KEY MAP - OAHU

0 125 250
1 inch = 250 feet

FEA/EISPN

FIGURE 3-19

ALTERNATIVE 3
ACTIVATED SLUDGE
WITH ANOXIC SELECTORS
WITHOUT GST

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The ancillary facilities related to Secondary Treatment Alternative 4 include the following:

- Aeration tank blower building
- Secondary clarifier return activated sludge & waste activated sludge pumping systems
- Anoxic tank mixing system
- Yard piping
- Electrical power and controls
- SCADA System

Figure 3-20 shows preliminary site layouts for Alternative 4.

Alternative 5 – Activated Sludge with Anoxic Selectors Reverse Flow with GST
Secondary Treatment Alternative 5 – Activated Sludge with Anoxic Selectors, Reverse Flow with GST would involve constructing new rectangular primary clarifiers, new activated sludge aeration tanks, converting the existing circular primary clarifiers into secondary clarifiers, and ancillary support facilities to provide full secondary treatment for projected future flows in year 2030.

Major components of this alternative include:

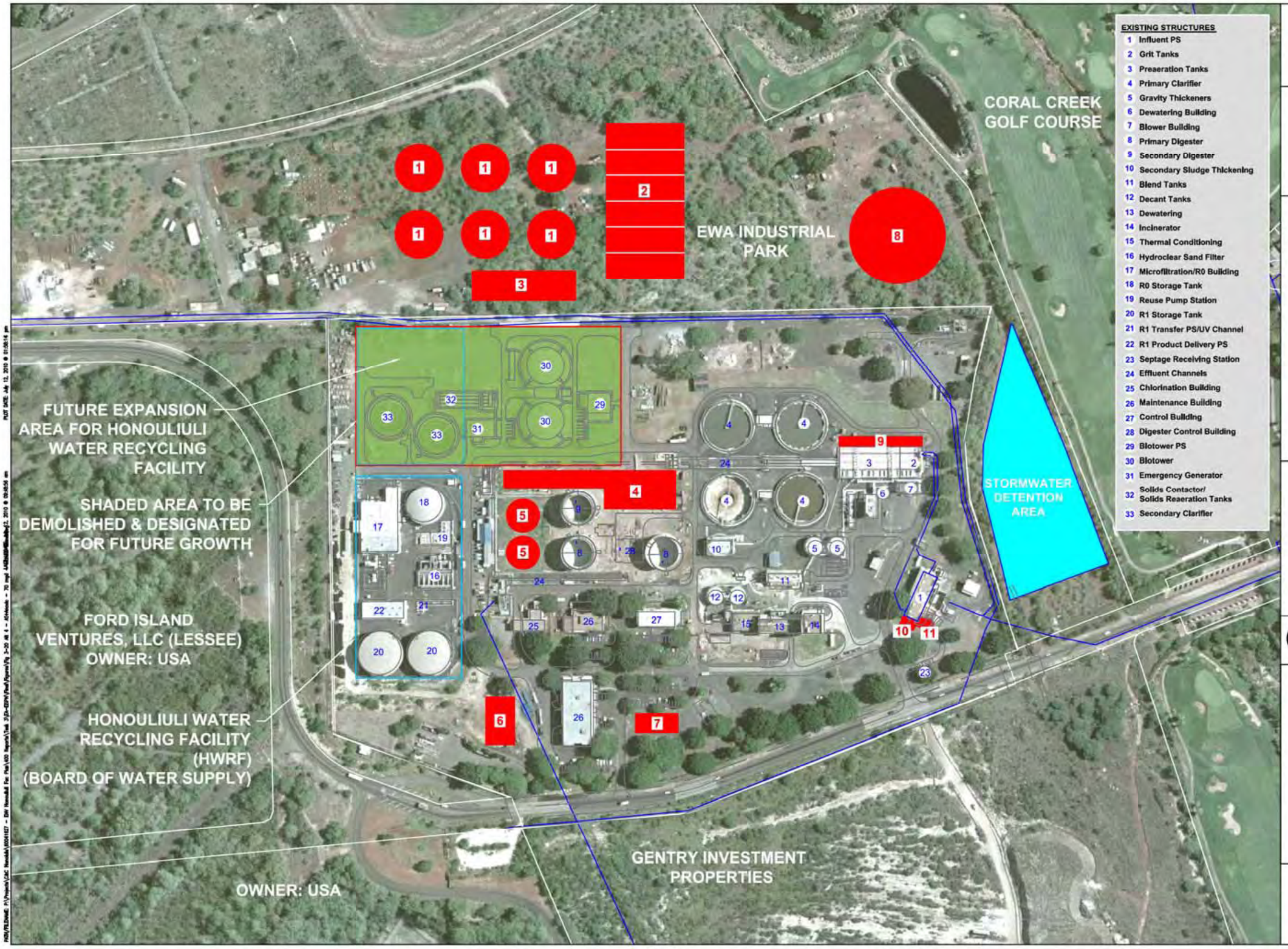
- New wet weather storage tunnel
- New pumping system for revised hydraulic profile
- New influent screening
- Four new rectangular primary clarifiers
- Six new anoxic selector
- Six new activated sludge aeration tanks and diffusers
- Convert four existing primary clarifiers into secondary clarifiers (deepen) by raising walls
- One New Secondary Clarifier

The ancillary facilities related to Secondary Treatment Alternative 5 include the following:

- Primary clarifier sludge and scum pump station
- Aeration tank IPS
- Aeration tank blower building
- Secondary clarifier return activated sludge & waste activated sludge pumping systems
- Anoxic tank mixing systems
- Yard piping
- Electrical power and controls
- SCADA system

Figure 3-21 shows a preliminary site layout for Alternative 5.

Alternative 6 – Activated Sludge with Anoxic Selectors, Reverse Flow without GST
Secondary Treatment Alternative 6 – Activated Sludge with Anoxic Selectors, Reverse Flow without GST would involve constructing new rectangular primary clarifiers, new activated sludge aeration tanks, converting the existing circular primary clarifiers into secondary clarifiers, and ancillary support facilities to provide full secondary treatment for projected future flows in year 2030.



EXISTING STRUCTURES

1 Influent PS
2 Grit Tanks
3 Preaeration Tanks
4 Primary Clarifier
5 Gravity Thickeners
6 Dewatering Building
7 Blower Building
8 Primary Digester
9 Secondary Digester
10 Secondary Sludge Thickening
11 Blend Tanks
12 Decant Tanks
13 Dewatering
14 Incinerator
15 Thermal Conditioning
16 Hydroclear Sand Filter
17 Microfiltration/R0 Building
18 R0 Storage Tank
19 Reuse Pump Station
20 R1 Storage Tank
21 R1 Transfer PS/UV Channel
22 R1 Product Delivery PS
23 Septage Receiving Station
24 Effluent Channels
25 Chlorination Building
26 Maintenance Building
27 Control Building
28 Digester Control Building
29 Blotower PS
30 Blotower
31 Emergency Generator
32 Solids Contactor/ Solids Reaeration Tanks
33 Secondary Clarifier

City and County of Honolulu

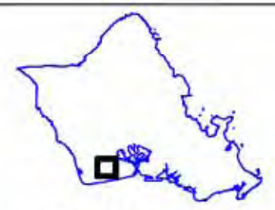
HONOULIULI/WAIPAHU/ PEARL CITY FACILITIES PLAN

LEGEND

TMK Parcel
Sewer Main

PROPOSED STRUCTURES

1 Secondary Clarifier
2 Activated Sludge/Anoxic Selectors
3 Pump and Blower Building
4 Gas Handling & Cogeneration
5 Anaerobic Digester
6 Storage Building
7 Administration/Lab Building
8 EQ Storage Tank + PS
9 Grit Chamber + Preaeration
10 IPS Expansion
11 Influent Screening Expansion



KEY MAP - OAHU

0 125 250

1 inch = 250 feet

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FIGURE 3-20

ALTERNATIVE 4
ACTIVATED SLUDGE
WITH ANOXIC SELECTORS
WITHOUT GST

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REVERSE FLOW

FUTURE EXPANSION AREA FOR HONOULIULI WATER RECYCLING FACILITY

SHADED AREA TO BE DEMOLISHED& DESIGNATED FOR FUTURE GROWTH

FORD ISLAND VENTURES, LLC (LESSEE) OWNER: USA

HONOULIULI WATER RECYCLING FACILITY (HWRF) (BOARD OF WATER SUPPLY)

OWNER: USA

EWA INDUSTRIAL PARK

CORAL CREEK GOLF COURSE

STORMWATER DETENTION AREA

GENTRY INVESTMENT PROPERTIES

EXISTING STRUCTURES

1 Influent PS
2 Grit Tanks
3 Preaeration Tanks
4 Primary Clarifier
5 Gravity Thickeners
6 Dewatering Building
7 Blower Building
8 Primary Digester
9 Secondary Digester
10 Secondary Sludge Thickening
11 Blend Tanks
12 Decant Tanks
13 Dewatering
14 Incinerator
15 Thermal Conditioning
16 Hydroclear Sand Filter
17 Microfiltration/R0 Building
18 R0 Storage Tank
19 Reuse Pump Station
20 R1 Storage Tank
21 R1 Transfer PS/UV Channel
22 R1 Product Delivery PS
23 Septage Receiving Station
24 Effluent Channels
25 Chlorination Building
26 Maintenance Building
27 Control Building
28 Digester Control Building
29 Blotower PS
30 Blotower
31 Emergency Generator
32 Solids Contactor/ Solids Reaeration Tanks
33 Secondary Clarifier

City and County of Honolulu

HONOULIULI/WAIPAHU/ PEARL CITY FACILITIES PLAN

LEGEND

TMK Parcel
Sewer Main

PROPOSED STRUCTURES

1 Primary Clarifier
2 Activated Sludge/Anoxic Selectors
3 Secondary Clarifier
4 Gas Handling & Cogeneration
5 Anaerobic Digester
6 Storage Building
7 Administration/Lab Building
8 Influent Screening
9 Tunnel Shaft 1A IPS
10 Tunnel Shaft 1B IPS
11 Tunnel Shaft 1C IPS

KEY MAP - OAHU

0 125 250
1 inch = 250 feet

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FIGURE 3-21

ALTERNATIVE 5
ACTIVATED SLUDGE
WITH ANOXIC SELECTORS
REVERSE FLOW
WITH GST

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Major components of this alternative include:

- New pumping system for revised hydraulic profile
- Five new rectangular primary clarifiers
- Six new activated sludge aeration tanks and diffusers
- Convert four existing primary clarifiers into secondary clarifiers (deepen) by raising walls
- Four new secondary clarifiers

The ancillary facilities related to Secondary Treatment Alternative 6 include the following:

- Primary clarifier sludge and scum pump station
- Aeration tank IPS downstream of existing grit chambers
- Aeration tank blower building
- Secondary clarifier return activated sludge and waste activated sludge pumping systems
- Anoxic tank mixing system
- Yard piping
- Electrical power and controls
- SCADA system

Figure 3-22 shows a preliminary site layout for Alternative 6.

Alternative 7 – Activated Sludge with Anoxic Selectors and Membrane Bioreactors with GST

Secondary Treatment Alternative 7 – Activated Sludge with Anoxic Selectors and Membrane Bioreactors (MBRs) with GST would involve constructing new activated sludge aeration tanks, new secondary clarifiers, new MBRs, and ancillary support facilities to provide full secondary treatment for projected future flows in year 2030. This Alternative provides a reclaimed water treatment capacity of 13 mgd from the MBR system (27 mgd of activated sludge secondary effluent is discharged via the ocean outfall).

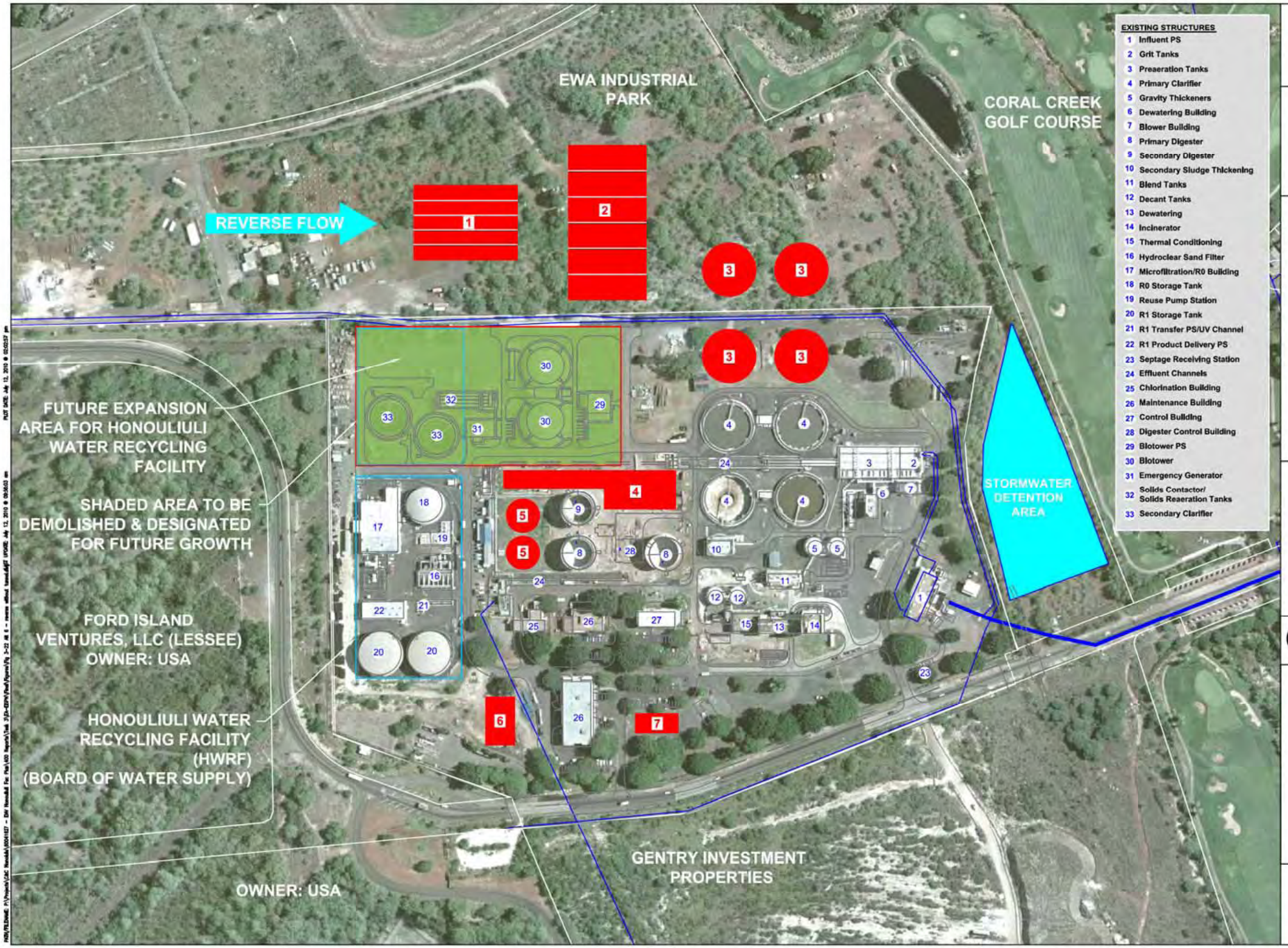
Major components of this alternative include:

- New wet weather storage tunnel
- New IPS
- New influent screening
- Reuse four existing primary clarifiers
- Four new activated sludge aeration tanks
- Five new secondary clarifiers
- Four new MBR trains with anoxic selectors

The ancillary facilities related to Secondary Treatment Alternative 7 include the following:

- MBR pipe galleries
- MBR pump and blower building
- MBR fine screens and grit removal
- Aeration tank blower building
- Secondary clarifier return activated sludge pumping system
- Anoxic tank mixing systems
- Yard piping
- Electrical power and controls
- SCADA system

Figure 3-23 shows a preliminary site layout for Alternative 7.



EXISTING STRUCTURES

1. Influent PS
2. Grit Tanks
3. Preaeration Tanks
4. Primary Clarifier
5. Gravity Thickeners
6. Dewatering Building
7. Blower Building
8. Primary Digester
9. Secondary Digester
10. Secondary Sludge Thickening
11. Blend Tanks
12. Decant Tanks
13. Dewatering
14. Incinerator
15. Thermal Conditioning
16. Hydroclear Sand Filter
17. Microfiltration/R0 Building
18. R0 Storage Tank
19. Reuse Pump Station
20. R1 Storage Tank
21. R1 Transfer PS/UV Channel
22. R1 Product Delivery PS
23. Septage Receiving Station
24. Effluent Channels
25. Chlorination Building
26. Maintenance Building
27. Control Building
28. Digester Control Building
29. Blotower PS
30. Blotower
31. Emergency Generator
32. Solids Contactor/ Solids Reaeration Tanks
33. Secondary Clarifier

City and County of Honolulu

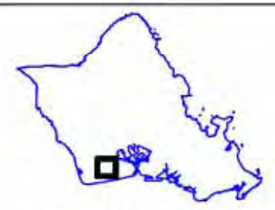
HONOULIULI/WAIPAHU/ PEARL CITY FACILITIES PLAN

LEGEND

- TMK Parcel
- Sewer Main

PROPOSED STRUCTURES

1. Primary Clarifier
2. Activated Sludge/Anoxic Selectors
3. Secondary Clarifier
4. Gas Handling & Cogeneration
5. Anaerobic Digester
6. Storage Building
7. Admininstration/Lab Building



KEY MAP - OAHU

0 125 250

1 inch = 250 feet

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FIGURE 3-22

ALTERNATIVE 6
ACTIVATED SLUDGE AND ANOXIC SELECTORS
REVERSE FLOW
WITHOUT GST

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CORAL CREEK GOLF COURSE

EWA INDUSTRIAL PARK

FUTURE EXPANSION AREA FOR HONOULIULI WATER RECYCLING FACILITY

SHADED AREA TO BE DEMOLISHED& DESIGNATED FOR FUTURE GROWTH

FORD ISLAND VENTURES, LLC (LESSEE) OWNER: USA

HONOULIULI WATER RECYCLING FACILITY (HWRF) (BOARD OF WATER SUPPLY)

STORMWATER DETENTION AREA

GENTRY INVESTMENT PROPERTIES

OWNER: USA

EXISTING STRUCTURES

1 Influent PS
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5 Gravity Thickeners
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7 Blower Building
8 Primary Digester
9 Secondary Digester
10 Secondary Sludge Thickening
11 Blend Tanks
12 Decant Tanks
13 Dewatering
14 Incinerator
15 Thermal Conditioning
16 Hydroclear Sand Filter
17 Microfiltration/R0 Building
18 R0 Storage Tank
19 Reuse Pump Station
20 R1 Storage Tank
21 R1 Transfer PS/UV Channel
22 R1 Product Delivery PS
23 Septage Receiving Station
24 Effluent Channels
25 Chlorination Building
26 Maintenance Building
27 Control Building
28 Digester Control Building
29 Blotower PS
30 Blotower
31 Emergency Generator
32 Solids Contactor/ Solids Reaeration Tanks
33 Secondary Clarifier

City and County of Honolulu

HONOULIULI/WAIPAHU/ PEARL CITY FACILITIES PLAN

LEGEND

TMK Parcel
Sewer Main

PROPOSED STRUCTURES

1 Secondary Clarifier
2 Activated Sludge/Anoxic Selectors
3 MBR
4 Pump and Blower Building
5 Gas Handling & Cogeneration
6 Anaerobic Digester
7 Storage Building
8 Administration/Lab Building
9 Influent Screening
10 Tunnel Shaft 1A IPS
11 Tunnel Shaft 1B IPS
12 Tunnel Shaft 1C IPS

KEY MAP - OAHU

0 125 250

1 inch = 250 feet

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FIGURE 3-23

ALTERNATIVE 7
ACTIVATED SLUDGE
WITH ANOXIC SELECTORS
& MEMBRANE BIOREACTORS
WITH GST

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3.7.5 Disposal System Alternatives

As stated in the record drawings for the ocean outfall (dated 1977) the outfall's hydraulic capacity is 112 MGD. Under the GST Alternative, this is adequate to handle the projected 2030 plant capacity of 70 MGD. However, this is less than the No Storage Alternative of 125 MGD under 2030 conditions. It should be noted that implementing water reuse or expanding water reuse opportunities can reduce discharge to the outfall. If the No Storage Alternative is selected, the hydraulic capacity of the outfall piping and diffusers would need to be analyzed to determine if an effluent pump station would be required. However, it is not anticipated that the outfall pipe or diffuser would require modification. If this analysis concludes the hydraulic capacity is less than 125 MGD, and reuse is not sufficient to reduce effluent flows below outfall capacity, the following options would be considered:

- Determine if the new plant design can be modified to increase the plant's hydraulic grade line, accommodate a higher effluent box, and allow the higher head to overcome friction and minor losses in the outfall to meet 125 MGD capacity;
- Develop equalization storage sufficient to detain peak plant flows upstream of the outfall; or
- Design a high flow, low head pumping station and taller effluent box to increase outfall capacity.

This is a design detail that is not a major cost item or major consideration in selecting the No Storage or Tunnel Storage alternatives, and will likely be addressed after that decision is made by the CITY. Changes to the disposal method are not anticipated and will not be part of the scope of DEIS.

3.8 Project Costs Estimates

Each alternative will be evaluated for performance, Operation and Maintenance (O&M) requirements, energy, and ancillary support requirements. Additionally, a life cycle cost comparison will also be prepared for the viable alternatives to assist in the comparison and selection of the recommended alternative. Construction costs and life cycle cost estimates have not yet been prepared for all of the alternatives. A summary of the costs estimates and a comparison of the alternatives will be presented in the DEIS.

3.9 Project Funding

Funding for the project would be through the Sewer Revenue Bonds issued by the CITY. Currently, State and Federal funding is not expected for the project.

3.10 Project Schedule

The preliminary project schedule is as follows:

- Planning/Engineering Studies — 5 years
- Design and Construction — 10 to 15 years

In the interim, upgrades and maintenance will continue as issues arise.

4.0 EXISTING NATURAL ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

This section discusses preliminary findings and information on the existing environment, potential impacts and mitigation measures for the proposed project. The existing environmental conditions in the project area (which includes the Phase I Area and the area along the proposed GST alignments, additional force main and relief sewer) are presented where data is available; however, where sufficient detail to characterize the area is not available, general information and characteristics on the larger sewershed or the island are provided. GIS information used in this document is from two sources: 1) HOLIS provided by the CITY DPP and 2) Hawaii State GIS Program provided by State Department of Business Economic Development and Tourism (DBEDT).

Potential impacts are divided into Construction Impacts and Operational Impacts. Construction Impacts are, for the most part, short term impacts due to construction of the alternatives. Operational Impacts are, for the most part, long term impacts from normal operation of the facilities. Mitigation measures that would reduce the impact of construction or operation of the alternatives on the environment are presented.

This project would, to the extent possible, 1) avoid, 2) minimize and 3) mitigate impacts of the proposed project on existing resources in the project area. As additional information becomes available, the information will be incorporated into the DEIS.

4.1 CLIMATE

Existing Environment

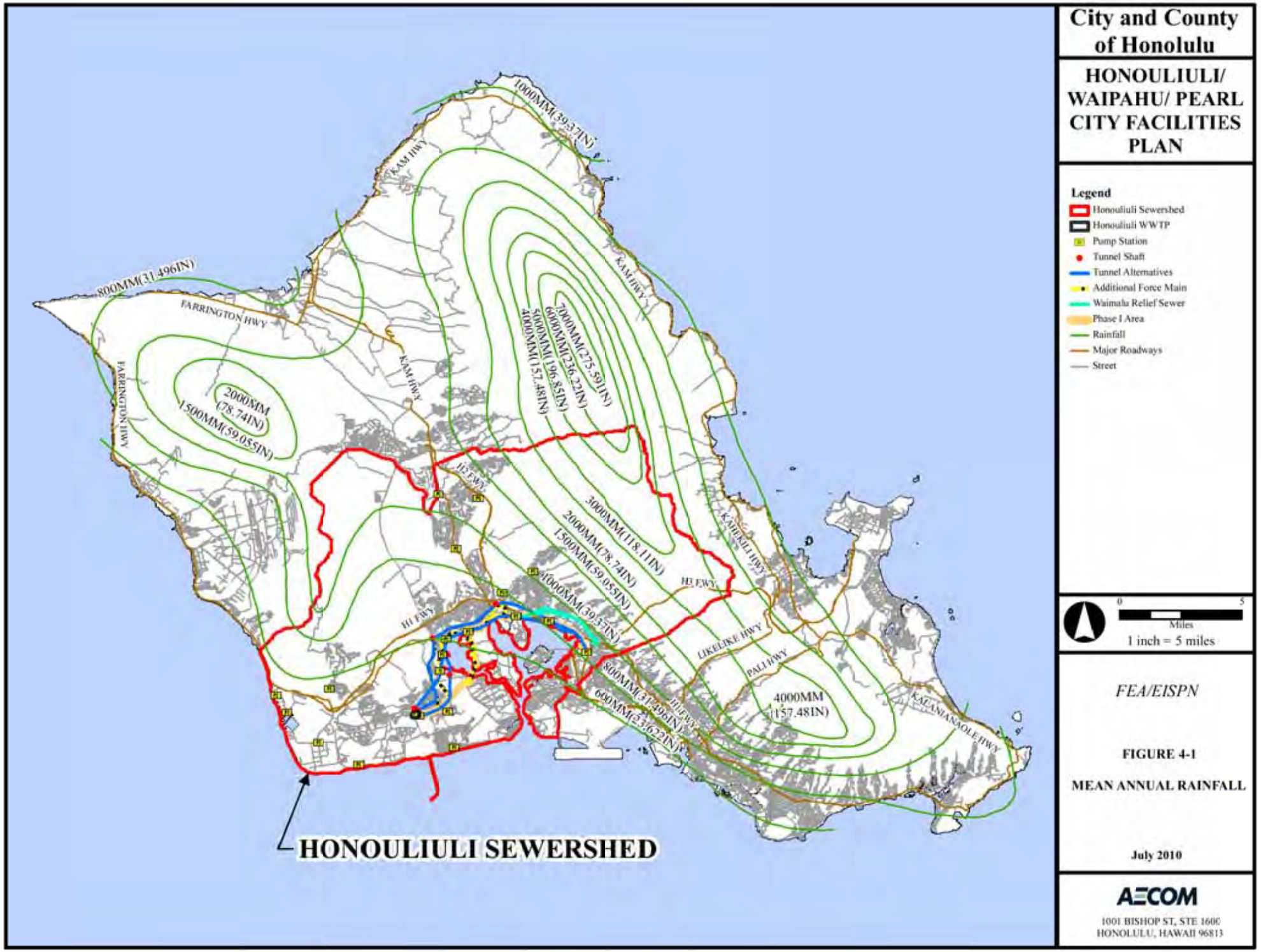
The climate in Hawaii is considered subtropical with annual temperatures in the project area ranging from 60 to 85°F. Mean annual rainfall in the Honouliuli Sewershed ranges from less than 20 inches in the Ewa Plains and coastal areas to over 200 inches near the summit of the Koolau Range while the mean annual rainfall in the project area is less than 40 inches. **Figure 4-1** shows the mean annual rainfall in the project area. The islands are exposed to trade and Kona winds. Trade winds are from the northeast and prevail approximately 70% of the time. Kona winds are from the south. Average wind in the area ranges from 15 to 25 mph with gusts over 35 mph.

Construction Impacts and Mitigation Measures

Construction related activities are not expected to impact the climate in the project area.

Operational Impacts and Mitigation Measures

The operation of the recommended constructed facilities is not anticipated to impact the climate (temperature, rain and wind) in the project area. Although the alternatives are not expected to significantly affect the climate, a net increase or decrease in energy consumption would affect the amount of green house gas generated. The alternatives will be further evaluated in the DEIS to determine net change in energy demand including but not limited to the difference in energy consumption of new IPS and drop in energy consumption from the decommissioning of existing WWPSs for the GST alternative.


1000MM(39.37IN)
800MM(31.496IN)
FARRINGTON HWY
KAM HWY
2000MM
(78.74IN)
1500MM(59.055IN)
7000MM(275.59IN)
6000MM(236.22IN)
5000MM(196.85IN)
4000MM(157.48IN)
3000MM(118.11IN)
2000MM(78.74IN)
1500MM(59.055IN)
1000MM(39.37IN)
H1 FWY
KAHEKILI HWY
LIKELIKE HWY
PALI HWY
800MM(31.496IN)
690MM(23.622IN)
4000MM
(157.48IN)
KALANIANAOLE HWY
HONOULIULI SEWERSHED
City and County of Honolulu
HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN
Legend
Honouliuli Sewershed
Honouliuli WWTP
Pump Station
Tunnel Shaft
Tunnel Alternatives
Additional Force Main
Waimalu Relief Sewer
Phase I Area
Rainfall
Major Roadways
Street
0
5
Miles
1 inch = 5 miles
FEA/EISPN
FIGURE 4-1
MEAN ANNUAL RAINFALL
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4.2 PHYSICAL ENVIRONMENT

4.2.1 Topography and Geology

Existing Environment

Topography in the sewershed is gently sloping and relatively flat; however, there are steep areas near the mountain ranges. Elevation in the sewershed ranges from zero to approximately 3,000 feet mean sea level (MSL). The majority of the project area facilities are located between 0 and 100 feet MSL with a small area between 100 and 200 feet MSL. The general topography of the sewershed is shown in **Figure 4-2**.

The island of Oahu was created by two volcanoes, the Koolau volcano and the Waianae volcano. The Koolau volcano is the younger of the two and located on the eastern side of the island and the Waianae volcano is on the western side of the island. The Honouliuli Sewershed is bounded by the Schofield Plateau to the north, Koolau Range to the east, Ewa Plains and Pearl Harbor to the south and the Waianae Range to the west. The Schofield Plateau was formed as lava from the Koolau volcano flowed to the Waianae Range, which created a flat area between the two mountain ranges. **Figure 4-3** shows the geological features in the sewershed.

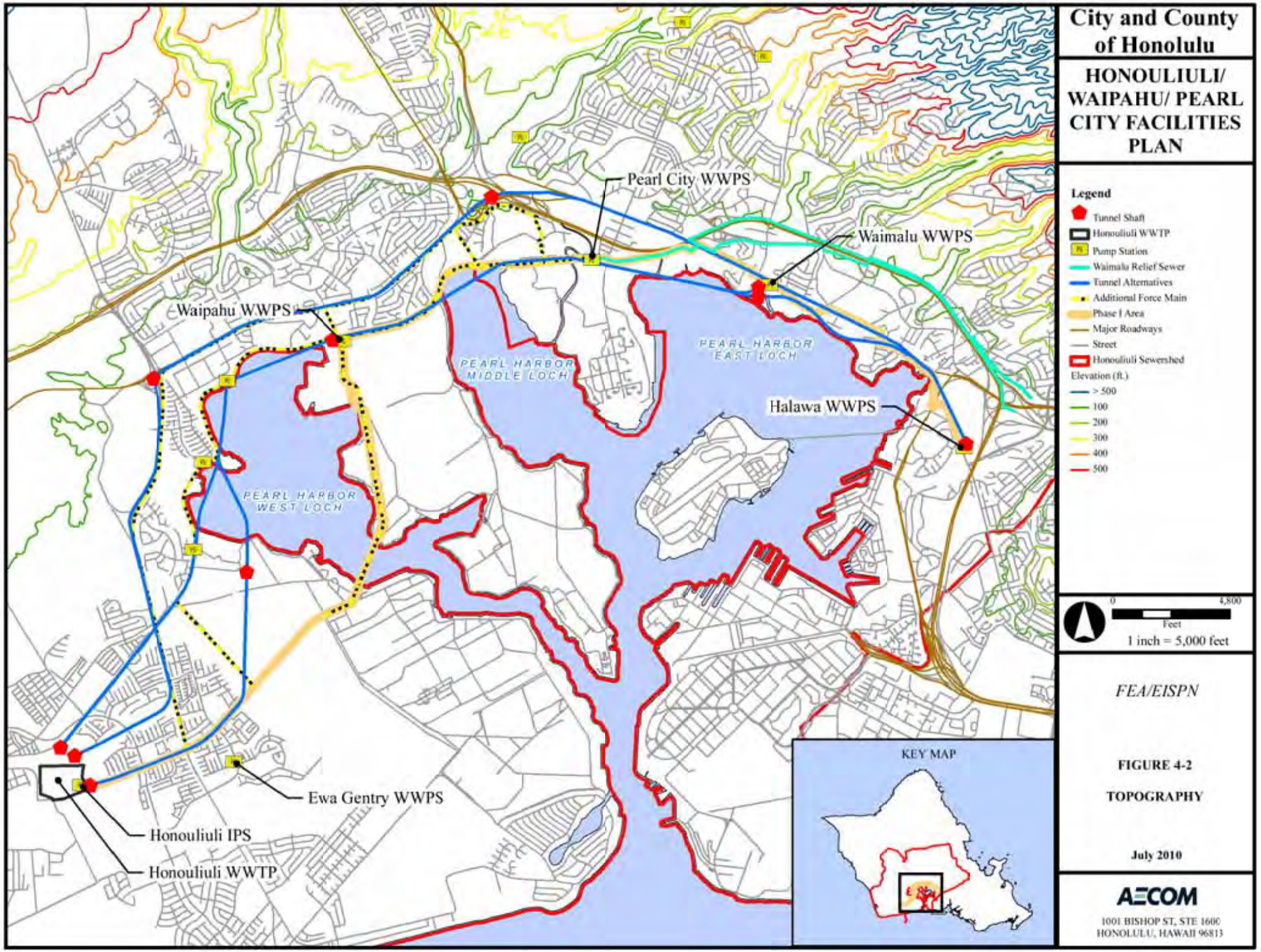
Construction Impacts and Mitigation Measures

Although construction of the facilities would involve grading, excavation and trenching, mitigation measures such as erosion and sedimentation controls (i.e. strawbales, silt fence ,filter bags) and would be implemented to reduce impacts to the environment. Trenches will be backfilled to grade or covered with plates at the end of each day. Soil which isnot immediately used for backfilling will be stockpiled and covered or otherwise protected (e.g. surrounded by straw bales and silt fence) to prevent erosion or sedimentation of adjacent areas. In addition, temporary seeding and mulching may be used to minimize soil erosion and provide soil stabilization on slopes. Water will be applied to exposed soils where necessary to control offsite dust emissions. Therefore, no significant impacts to topography and geology are expected; however, localized impacts to topography in the project area are expected. Disposal of muck (excavation material) could potentially affect the topography in localized areas. Disposal methods may include use as fill material for other projects, temporary stockpiling, or final disposal to the landfill. Disposal methods, along with quantity of muck, will be evaluated further in the DEIS.

Operational Impacts and Mitigation Measures

It is anticipated that the normal operation of the proposed facilities would not affect the topography or geology in the sewershed. Excavation and trenching may be necessary for emergency work on the proposed facilities. Anticipated indirect impacts to topography are associated with future developments (residential, commercial and industrial) in the sewershed allowed by the additional capacity in the collection and treatment system, which are likely to have minor impacts on topography.

Overall, it is anticipated that this project would have no significant impact on the topography and geology in the sewershed.



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Tunnel Shaft
- Honouliuli WWTP
- Pump Station
- Waimalu Relief Sewer
- Tunnel Alternatives
- Additional Force Main
- Phase I Area
- Major Roadways
- Street
- Honouliuli Sewershed

Elevation (ft.)

- > 500
- 100
- 200
- 300
- 400
- 500

0 4,800 Feet

1 inch = 5,000 feet

FEA/EISPN

FIGURE 4-2

TOPOGRAPHY

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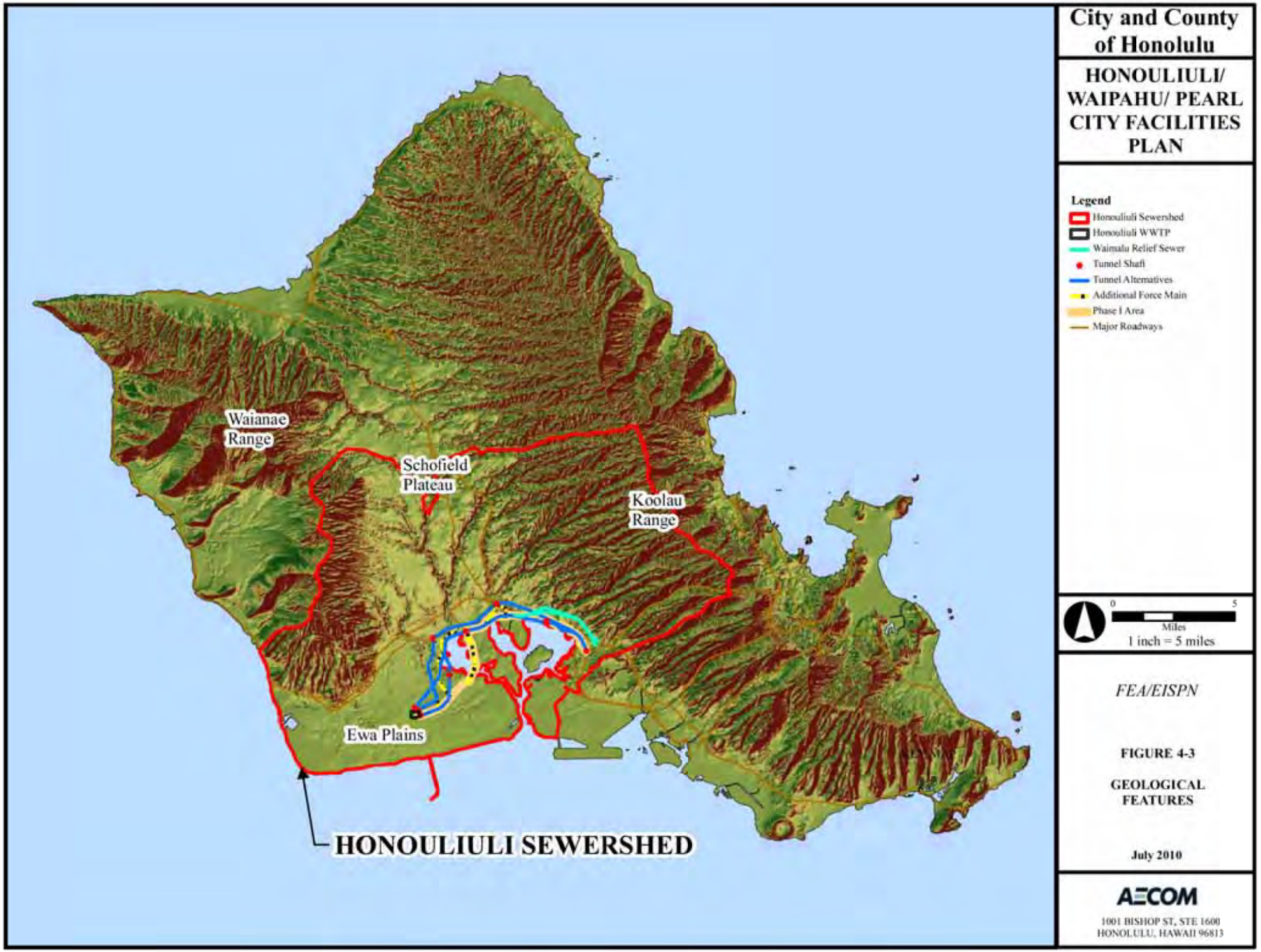

City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Honouliuli Sewershed
- Honouliuli WWTP
- Waimalu Relief Sewer
- Tunnel Shaft
- Tunnel Alternatives
- Additional Force Main
- Phase I Area
- Major Roadways

0 5
Miles
1 inch = 5 miles

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FIGURE 4-3

GEOLOGICAL FEATURES

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4.2.2 Soils

Existing Environment

According to the *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* (1972), there are seven soil associations on Oahu, three of which are in the sewershed. The three soil associations in the project area are:

- Lualualei-Fill land-Ewa association: Deep, nearly level to moderately sloping, well-drained soils that have a fine textured or moderately fine textured subsoil or underlying material, and areas of fill land; on coastal plains
- Helemano-Wahiawa association: Deep, nearly level to moderately sloping, well-drained soils that have a fine-textured subsoil; on uplands
- Rough mountainous land-Kapaa association: Very steep land broken by numerous drainage ways and deep, well-drained soils that have a fine textured or moderately fine textured subsoil; in gulches and on narrow ridges

Figure 4-4 shows the soil associations in the sewershed.

Other soil information was gathered from the Hawaii Statewide GIS Program website including information on erosion potential of the land, agricultural productivity and agricultural lands of importance to the State of Hawaii (ALISH). The erosion potential of the land in the project area varies from not classified to not highly erodible land to potentially highly erodible land. **Figure 4-5** shows the erosion potential in the sewershed. Agricultural productivity in the sewershed includes the full range of productivity ratings. ALISH in the project area include all four types: unclassified, other lands, unique lands and prime lands. **Figure 4-6** shows the ALISH in the sewershed.

Construction Impacts and Mitigation Measures

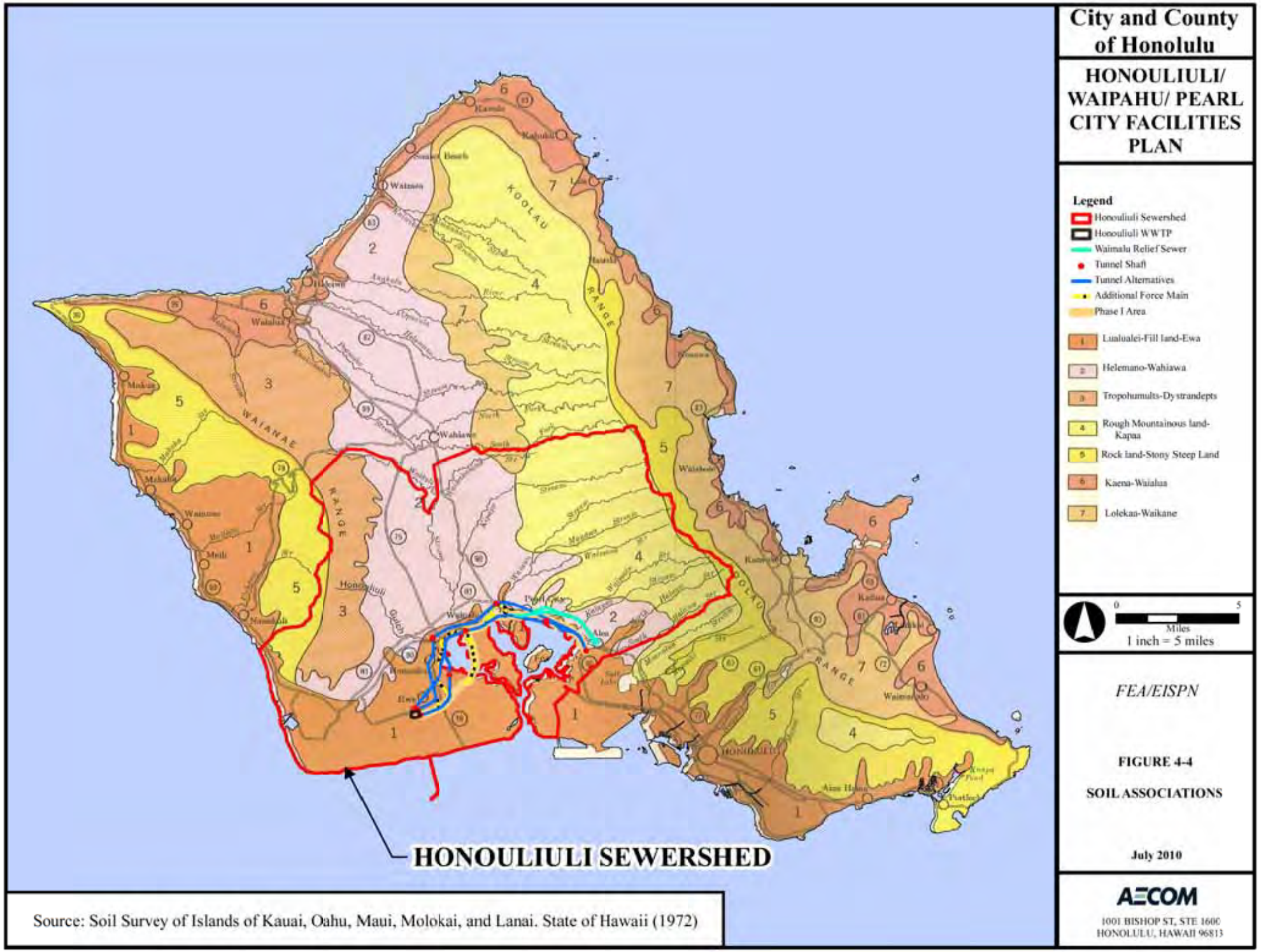
During construction, some impacts to the soils in the project area, including soil loss, are expected. Construction may include the removal of soils and tunnel muck in the area. Tunnel excavation material disposal would be a substantial part of construction of the tunnel. The DEIS will evaluate soil conditions in the project area, the quantity of muck and disposal methods.

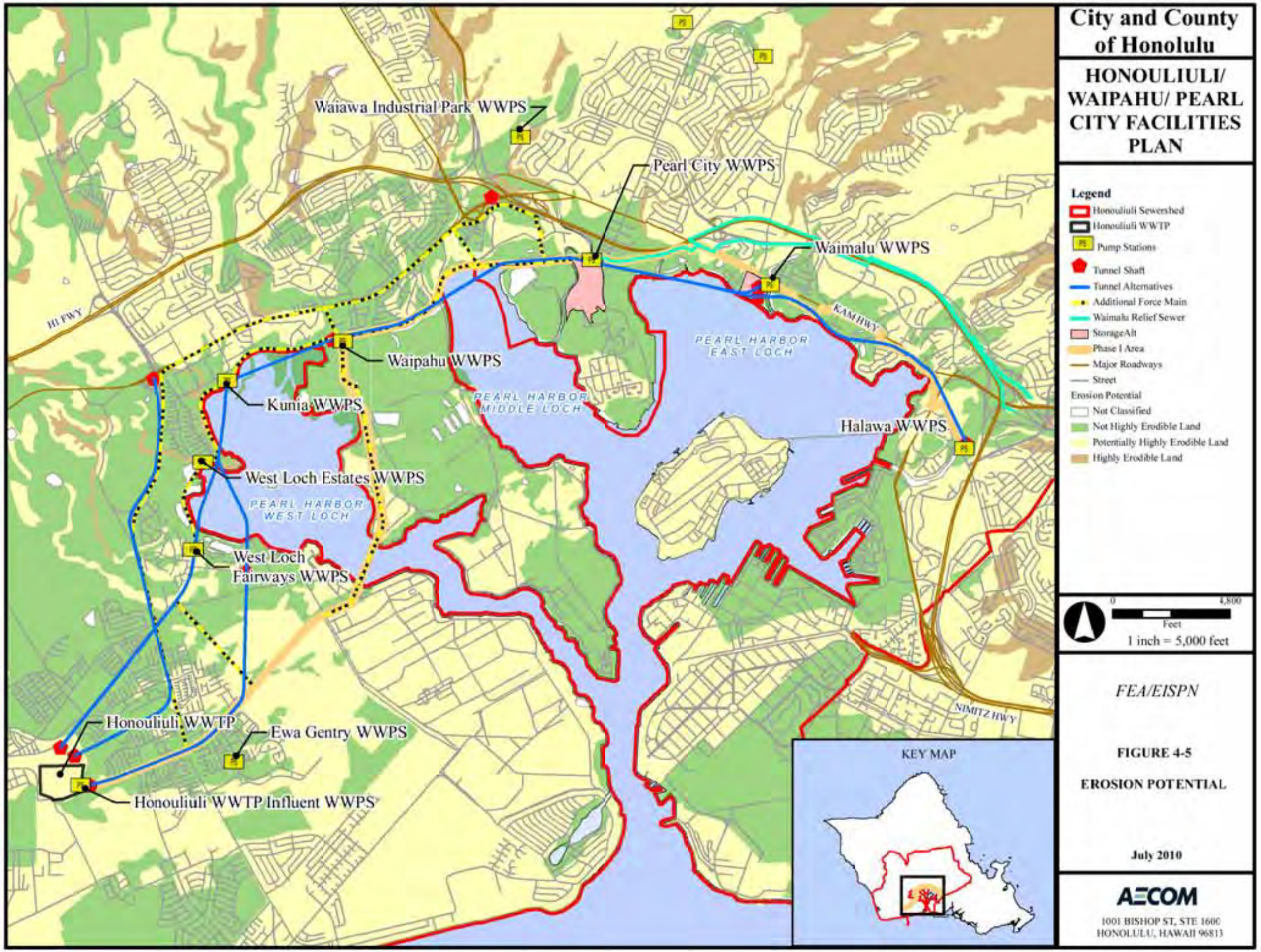
Construction activities, including excavation and trenching, could potentially impact sewerlines or force mains that could result in localized contamination of soils. There is also a chance of accidental release of construction equipment fluids (e.g. oil and grease) that could contaminate soils. However, mitigation measures would be implemented during construction activities to preserve the integrity of existing utility lines and keep construction equipment in good working condition.

Operational Impacts and Mitigation Measures

It is anticipated that operational impacts are associated with contamination of the soils in the event of any wastewater spills. The proposed upgrades should improve the carrying capacity of the existing Honouliuli wastewater system; thereby minimizing SSOs and contamination of soils in the project area. Soils stability inspections near the facilities would need to be conducted periodically to make sure there are no issues with the foundation of the facilities.

Anticipated indirect impacts to soils are associated with increased capacity in the collection and treatment system to allow future developments (residential, commercial and industrial) in the project area to connect to the existing wastewater system. These developments are likely to have minor impacts on soils in the project area including grading, excavation and other construction activities and may result in the removal of soils during construction.


City and County of Honolulu
HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN
Legend
Honouliuli Sewershed
Honouliuli WWTP
Waimalu Relief Sewer
Tunnel Shaft
Tunnel Alternatives
Additional Force Main
Phase I Area
1 Lualualei-Fill land-Ewa
2 Helemano-Wahiawa
3 Tropohumults-Dystrandepts
4 Rough Mountainous land-Kapaa
5 Rock land-Stony Steep Land
6 Kaena-Waialua
7 Lolekaa-Waikane
0
5
Miles
1 inch = 5 miles
FEA/EISPN
FIGURE 4-4
SOIL ASSOCIATIONS
July 2010
AECOM
1001 BISHOP ST, STE 1600
HONOLULU, HAWAII 96813
HONOULIULI SEWERSHED
Source: Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai. State of Hawaii (1972)


Waiawa Industrial Park WWPS
Pearl City WWPS
Waimalu WWPS
Waipahu WWPS
Kunia WWPS
West Loch Estates WWPS
West Loch Fairways WWPS
Halawa WWPS
Honouliuli WWTP
Ewa Gentry WWPS
Honouliuli WWTP Influent WWPS
H1 FWY
KAM HWY
NIMITZ HWY
PEARL HARBOR EAST LOCH
PEARL HARBOR MIDDLE LOCH
PEARL HARBOR WEST LOCH
KEY MAP
City and County of Honolulu
HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN
Legend
Honouliuli Sewershed
Honouliuli WWTP
Pump Stations
Tunnel Shaft
Tunnel Alternatives
Additional Force Main
Waimalu Relief Sewer
StorageAlt
Phase I Area
Major Roadways
Street
Erosion Potential
Not Classified
Not Highly Erodible Land
Potentially Highly Erodible Land
Highly Erodible Land
0
4,800
Feet
1 inch = 5,000 feet
FEA/EISPN
FIGURE 4-5
EROSION POTENTIAL
July 2010
AECOM
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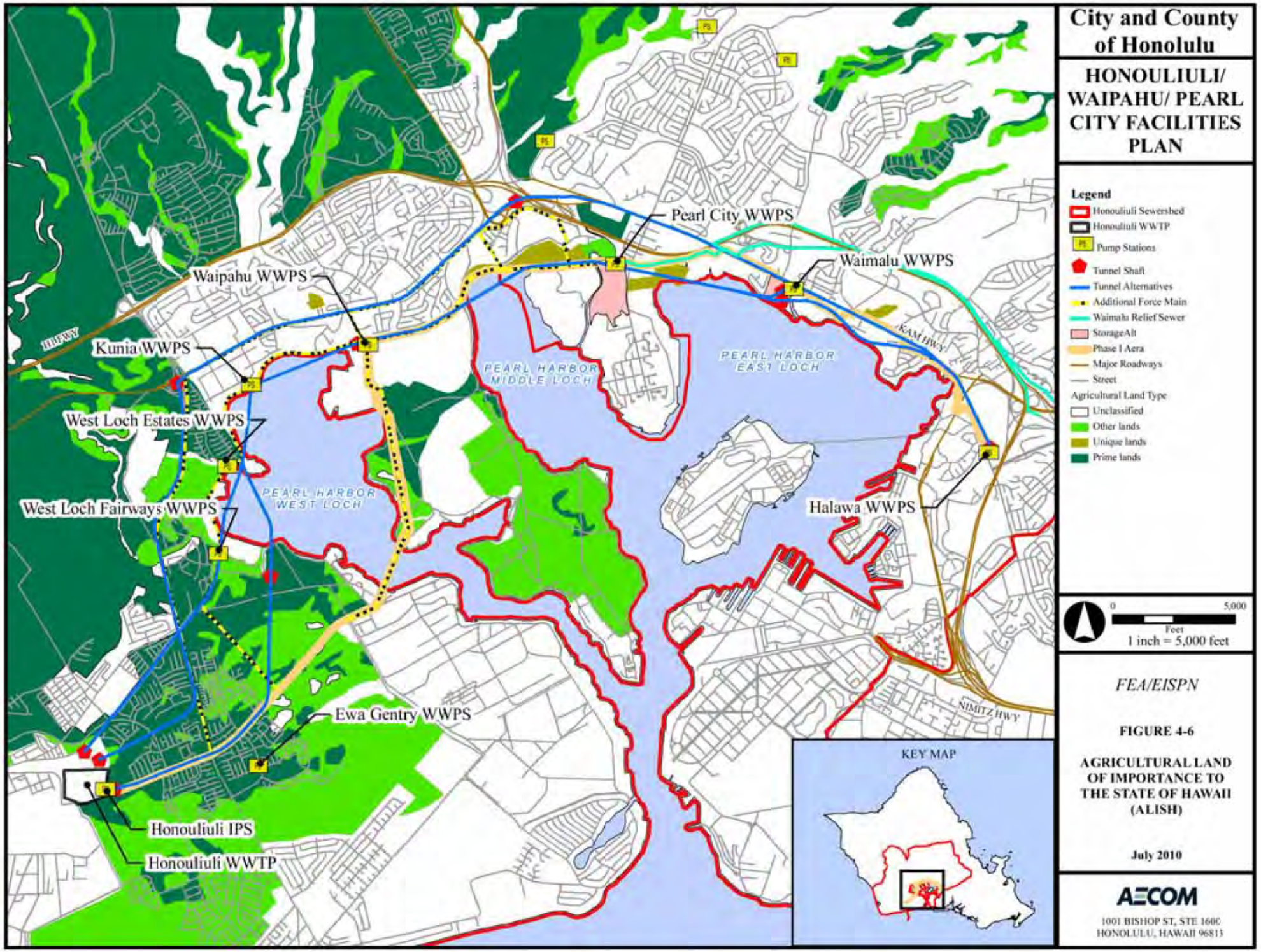
HONOLULU, HAWAII 96813



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Honouliuli Sewershed
- Honouliuli WWTP
- Pump Stations
- Tunnel Shaft
- Tunnel Alternatives
- Additional Force Main
- Waimalu Relief Sewer
- StorageAlt
- Phase I Aera
- Major Roadways
- Street

Agricultural Land Type

- Unclassified
- Other lands
- Unique lands
- Prime lands

0 5,000 Feet

1 inch = 5,000 feet

FEA/EISPN

FIGURE 4-6

AGRICULTURAL LAND OF IMPORTANCE TO THE STATE OF HAWAII (ALISH)

July 2010

AECOM
1001 BISHOP ST, STE 1600
HONOLULU, HAWAII 96813

4.3 HYDROLOGICAL CONDITIONS

4.3.1 Ground Water

Existing Environment

The Honouliuli Sewershed encompasses two DLNR aquifer sectors: Pearl Harbor and Central; with all of the project area located within the Pearl Harbor sector. The Pearl Harbor sector is further divided into four systems: Makaiwa, Ewa-Kunia, Waipahu-Waiawa, and Waimalu. The total sustainable yield for the five systems is approximately 165 mgd. **Figure 4-7** shows the aquifer sectors, systems and sustainable yield in the project area. Additional information on the existing ground water will be provided in the forthcoming DEIS.

Construction Impacts and Mitigation Measures

Construction activities, including excavation and trenching, could potentially impact sewerlines or force mains that could result in contamination of the soil and ground water. There is also a chance of accidental release of construction equipment fluids (e.g. oil and grease) that could contaminate soils. However, mitigation measures would be implemented during construction activities to preserve the integrity of existing utility lines and keep construction equipment in good working condition. Also, dewatering may be necessary for construction below the ground water table.

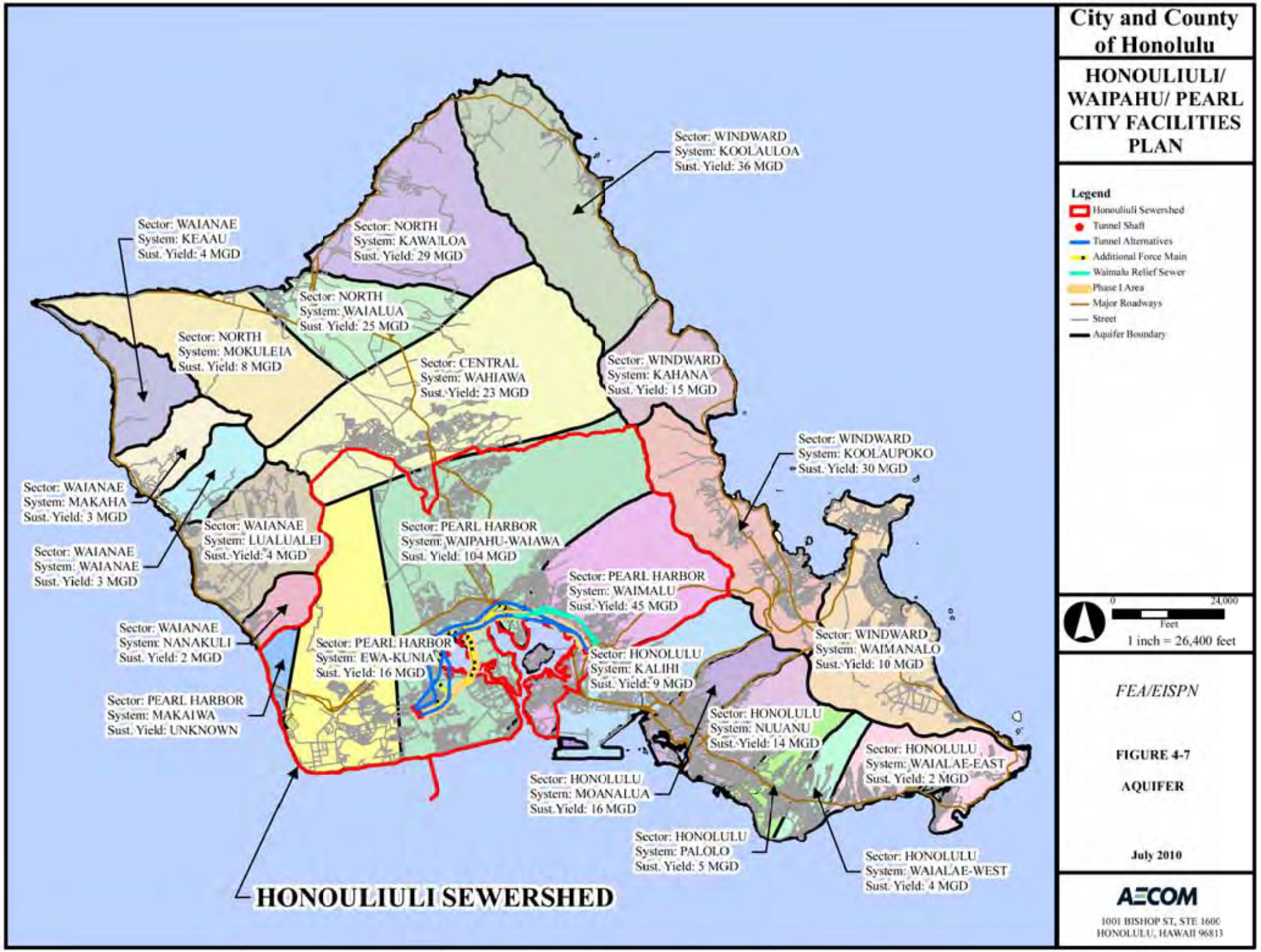
Overall, no significant construction impact is expected for ground water in the project area.

Operational Impacts and Mitigation Measures

This project is aimed at reducing the potential of SSOs by increasing capacity to the existing conveyance and treatment system for current and future needs. This increase in capacity could also enable and/or encourage currently unsewered areas to connect to a centralized system. Unsewered areas (approximately 20 homes in Ewa Plain bounded by Old Fort Weaver Road, West Loch Golf Course and Fort Weaver Road and approximately 970 homes in Ewa Beach bounded by James Campbell High School, Hawaii Prince Golf Course, New Ewa Beach Golf Club, North Road, and the Pacific Tsunami Warning Center) in the sewershed are on individual wastewater systems (IWSs). IWSs, if not maintained properly, may contaminate ground water.

Leakage or breakage in sewerlines or force mains is less likely for new pipes. Mitigation measures for the operational impacts include proper operation and maintenance of the proposed facilities.

The additional connections to the wastewater system will reduce the need for IWSs and the potential contamination to groundwater.



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Honouliuli Sewershed
- Tunnel Shaft
- Tunnel Alternatives
- Additional Force Main
- Waimalu Relief Sewer
- Phase I Area
- Major Roadways
- Street
- Aquifer Boundary

0 24,000 Feet

1 inch = 26,400 feet

FEA/EISPN

FIGURE 4-7

AQUIFER

July 2010

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1001 BISHOP ST, STE 1600
HONOLULU, HAWAII 96813

4.3.2 Surface Water

Existing Environment

Streams are classified into two main classes: Class 1 and Class 2. According to Hawaii Administrative Rules (HAR) Title 11, Chapter 54 (Chapter 11-54) *Water Quality Standards*, it is the objective of Class 1 waters that these waters remain in their natural state as nearly as possible with an absolute minimum of pollution from any human-caused source and it is the objective of Class 2 waters is to protect their use for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping, and navigation. Class 1 streams are typically in undeveloped areas near the Koolau summits; no Class 1 streams are located in the project area.

There are seven perennial streams in the project area (Halawa Stream, Aiea Stream, Kalauao Stream, Waimalu Stream, Waiawa Stream, Waikele Stream and Honouliuli Stream) that discharge into Pearl Harbor. **Table 4-1** shows the streams in the project area, if the stream is considered navigable, whether the stream is impaired (waterbodies that are not expected to meet State Water Quality Standards) and the location where it enters Pearl Harbor.

Table 4-1. Streams in the Project Area

Stream	Navigable Waters?[1]	Impaired Waterway?[2]	Where Enters Pearl Harbor
Halawa Stream	Yes	Yes	East Loch
Aiea Stream	Yes	Yes	East Loch
Kalauao Stream	No	No	East Loch
Waimalu Stream	No	Yes	East Loch
Waiawa Stream	No	No	Middle Loch
Waikele Stream	No	Yes	West Loch
Honouliuli Stream	No	No	West Loch

[1] Navigable Waters as defined by the US Coast Guard as waters subject to tidal influence and non-tidal streams that carry commercial traffic

[2] State Department of Health 303(d) List of Impaired Waters

Construction Impacts and Mitigation Measures

During construction, there is a possibility of stormwater runoff carrying sediments and construction related pollutants into nearby streams and drainage systems, which has a potential of impacting the water quality into these streams.

Discharge of wastewater during construction activities would require filing of NPDES NOI C for stormwater associated with construction activities, NOI F for discharges associated with hydrotesting waters and NOI G for construction activity dewatering effluent. The permits require site-specific BMP plans, and erosion and sediment control plans. All discharges must be in accordance with the HAR, Chapter 11-54, *Water Quality Standards*. Mitigation measures for the construction impacts include proper design and construction of the proposed improvements. No alteration of stream bed and/or channel is anticipated; however, if it is later determined that alteration is necessary; a Stream Channel Alteration permit would be required.

Operational Impacts and Mitigation Measures

Operation of the proposed project is anticipated to result in a positive impact to surface water. In fact, this project is expected to minimize the potential of SSOs by adding capacity to the existing conveyance and treatment system. Both storage tanks and the GST would increase capacity in the existing system; therefore minimizing the potential of SSOs.

Leakage or breakage in sewerlines or force mains is unlikely for new pipes; however, mitigation measures for the operational impacts include proper operation and maintenance of the proposed improvements.

Anticipated indirect impacts to surface water are associated with increased capacity in the collection and treatment system to allow for future developments (residential, commercial and industrial) as approved by the Primary Urban Center and Ewa Development Plans, to connect to the existing wastewater system. Construction of these developments may increase soils, sediments and other contaminants that end up in the surface waters. Reduced recharge from on-lot systems may result in reduction of stream flow.

4.3.3 Coastal Waters

Existing Environment

Coastal waters in the project area include the waters from Ko'Olina to Pearl Harbor (West Mamala Bay). These coastal waters are "Class A" waters. According to the HAR Title 11, Chapter 54 *Water Quality Standards*, it is the objective of Class A waters that their use for recreational purposes and aesthetic enjoyment be protected. Any other use shall be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class.

Construction Impacts and Mitigation Measures

During construction, there is a possibility of stormwater runoff carrying sediments and construction related pollutants into nearby coastal waters.

Discharge of stormwater during construction activities would require filing of NPDES NOI C for stormwater associated with construction activities, NOI F for discharges associated with hydrotesting waters and NOI G for construction activity dewatering effluent. The permits require site-specific BMP plans, and erosion and sediment control plans. All discharges must be in accordance with the HAR, Chapter 11-54, *Water Quality Standards*. Mitigation measures for the construction impacts include proper design and construction of the proposed improvements. No alteration of stream bed and/or channel is anticipated; however, if it is later determined that alteration is necessary, a Stream Channel Alteration permit would be required.

Operational Impacts and Mitigation Measures

Operation of the proposed project is expected to result in a positive impact to coastal water. In fact, this project would minimize the potential of additional SSOs from the existing conveyance and treatment system. The increase in the capacity would allow the connection of currently unsewered areas on IWSs into the CITY's wastewater system and would be consistent with the future growth and development approved in the Primary Urban Center and Ewa Development Plans; therefore reducing the chances of contamination to coastal waters.

Leakage or breakage in sewerlines or force mains is uncommon for new pipes; however, mitigation measures for the operational impacts include proper operation and maintenance of the proposed improvements.

4.3.4 Flood Hazard

Existing Environment

The Honouliuli Sewershed is located along the southwestern coastline on the island of Oahu and includes several streams. The CITY DPP has digitized the Federal Emergency

Management Agency's (FEMA's) flood insurance rate maps (FIRM) from 2006 to 2007 into GIS flood zone layer. According to the digitized flood zone layer, the only facility in the project area that is located in flood prone areas is Pearl City WWPS. The Pearl City WWPS is located in Zone A, a 100-year flood zone with no base elevations determined and is adjacent to Waiawa Stream. **Figure 4-8** and **Figure 4-9** show the flood prone areas in the project area and near the Pearl City WWPS, respectively.

Construction Impacts and Mitigation Measures
Construction activities would result in temporary impacts to flood zones due to required regrading and stockpiling of excavated materials. The construction access points and staging areas would result in local increases in stormwater runoff to floodplain areas due to a decrease in surface permeability and removal of vegetation. Impacts would be minimized by implementation of a stormwater management plan incorporating best management practices to minimize impacts to flood zones. Overall, no significant construction impact to flooding in the project area is anticipated.

Operational Impacts and Mitigation Measures
Operational impacts are expected to be beneficial since the Pearl City WWPS would be relocated. The current Pearl City WWPS has been flooded before and this relocation should prevent future flooding at the WWPS. Locations of the proposed permanent above ground facilities have not been determined; therefore, some above grade structures could potentially be located in a flood zone and may cause local changes in flood areas. These structures would be designed pursuant to CITY Land Use Ordinance 21-9.10 Flood Hazard Districts and the US National Flood Disaster Protection Act of 1973.

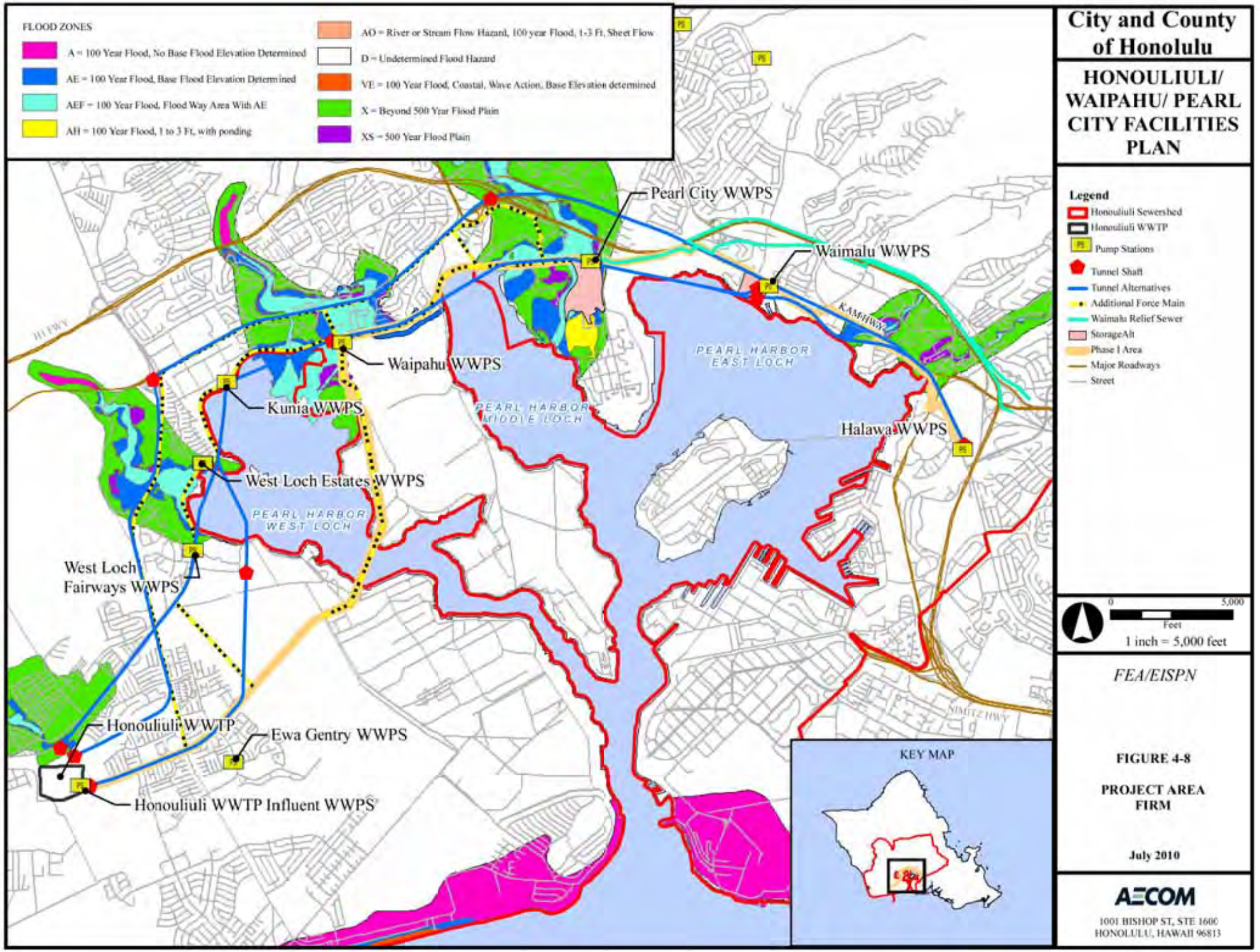
4.3.5 Earthquakes

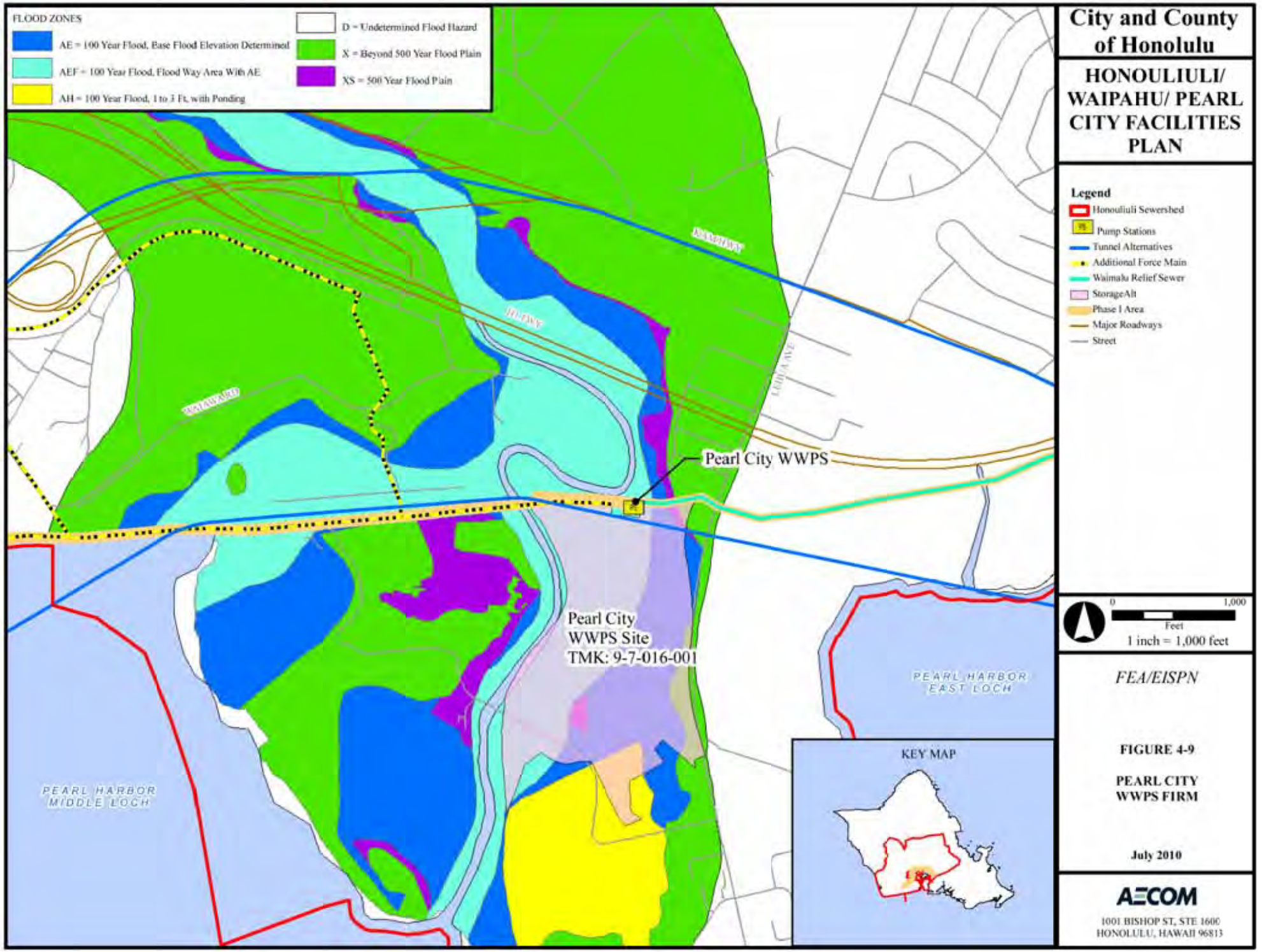
Existing Environment
Oahu does not have any active volcanoes; therefore, the island is not subject to significant earthquakes from volcanic activity. However, earthquakes are not uncommon in Hawaii. Most earthquakes in the Hawaiian Islands are caused by volcanic activity on Hawaii, the Big Island. Earthquakes that reach Oahu are generally not strong and cause little or no damage. One of the larger and more recent earthquakes occurred offshore of Puakō, Hawaii. The earthquake measured 6.7 on the Richter scale and caused minor damages on the island of Oahu. When an earthquake hits the island, the wastewater management facilities are just as likely to be damaged as any other structure in the area.

The Uniform Building Code (UBC) classifies likelihood of seismic activity into zones ranging from 0 to 4. Seismic Zone 0 represents no chance of severe ground shaking and Seismic Zone 4 represents a 10% chance of severe shaking in a 50-year interval. The UBC classifies Oahu as in Seismic Zone 2A.

Construction Impacts and Mitigation Measures
During construction, there is the potential for an earthquake to occur. All applicable Federal State and CITY requirements will be implemented to minimize impacts that may result from the construction of the proposed project.

Operational Impacts and Mitigation Measures
The proposed wastewater management facilities would be designed and constructed to meet Seismic Zone 2A requirements and all applicable UBC and Federal, State and CITY requirements. Back-up power supply would be available at the facilities to ensure that there would not be SSOs during emergencies and power outages.


FLOOD ZONES
A = 100 Year Flood, No Base Flood Elevation Determined
AE = 100 Year Flood, Base Flood Elevation Determined
AEF = 100 Year Flood, Flood Way Area With AE
AH = 100 Year Flood, 1 to 3 Ft, with ponding
AO = River or Stream Flow Hazard, 100 year Flood, 1-3 Ft, Sheet Flow
D = Undetermined Flood Hazard
VE = 100 Year Flood, Coastal, Wave Action, Base Elevation determined
X = Beyond 500 Year Flood Plain
XS = 500 Year Flood Plain
Pearl City WWPS
Waimalu WWPS
Waipahu WWPS
Kunia WWPS
West Loch Estates WWPS
West Loch Fairways WWPS
Halawa WWPS
Honouliuli WWTP
Ewa Gentry WWPS
Honouliuli WWTP Influent WWPS
PEARL HARBOR EAST LOCH
PEARL HARBOR MIDDLE LOCH
PEARL HARBOR WEST LOCH
H1 FWY
KAM HWY
KEY MAP
City and County of Honolulu
HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN
Legend
Honouliuli Sewershed
Honouliuli WWTP
Pump Stations
Tunnel Shaft
Tunnel Alternatives
Additional Force Main
Waimalu Relief Sewer
StorageAlt
Phase I Area
Major Roadways
Street
0
5,000
Feet
1 inch = 5,000 feet
FEA/EISPN
FIGURE 4-8
PROJECT AREA FIRM
July 2010
AECOM
1001 BISHOP ST, STE 1600
HONOLULU, HAWAII 96813



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Honouliuli Sewershed
- Pump Stations
- Tunnel Alternatives
- Additional Force Main
- Waimalu Relief Sewer
- StorageAlt
- Phase I Area
- Major Roadways
- Street

0 1,000
Feet
1 inch = 1,000 feet

FEA/EISPN

FIGURE 4-9

PEARL CITY WWPS FIRM

July 2010

AECOM
1001 BISHOP ST, STE 1600
HONOLULU, HAWAII 96813

4.4 NATURAL HAZARDS

4.4.1 Hurricanes

Existing Environment

Hurricanes are storm systems that have sustained winds exceeding 73 miles per hour that form in warm tropical waters near the equator. In Hawaii, hurricane season runs from June 1st to November 30th. The last major hurricane was Iniki which passed over Kauai on September 11, 1992. Although most of the damage was on Kauai, Oahu also experienced some damage. When a hurricane hits the island, the wastewater management facilities are just as likely to be damaged as any other structure in the area.

Construction Impacts and Mitigation Measures

During construction, there is the potential that a hurricane will occur. In the event that a hurricane is predicted, construction equipment will be secured and all applicable Federal State and CITY requirements will be implemented to reduce potential damage.

Operational Impacts and Mitigation Measures

The wastewater management facilities would be designed and constructed to meet all applicable UBC and Federal, State and CITY requirements to help protect against potential structural impacts resulting from a hurricane. Back-up power supply would be available at the facilities to ensure that there would not be SSOs during emergencies and power outages.

4.4.2 Tsunamis

Existing Environment

Tsunamis are a series of waves that are created by sea floor movements caused by earthquakes, landslides, or volcanic eruptions. The Hawaiian Islands are always at risk for tsunamis; as the islands are susceptible to tsunamis generated from earthquake and volcanic activity from the area bordering the Pacific Ocean (also known as the "Rim of Fire"). The last major tsunami was the 1960 Hilo tsunami. Although this particular tsunami did not affect Oahu, tsunamis can be a hazard on Oahu.

Construction Impacts and Mitigation Measures

During construction, there is the potential for a tsunami to occur. In the event that a tsunami is predicted, construction equipment will be secured and all applicable Federal State and CITY requirements will be implemented to reduce potential damage.

Operational Impacts and Mitigation Measures

The wastewater management facilities would be designed and constructed to meet all applicable UBC and Federal, State and CITY requirements to help protect against potential structural impacts resulting from a tsunami. Back-up power supply should be available at the facilities to ensure that there would not be SSOs during emergencies and power outages.

4.5 AIR QUALITY

Existing Environment

The State of Hawaii DOH, Clean Air Branch (CAB) has four air monitoring stations in the Honouliuli Sewershed. The air monitoring stations in the sewershed are Kapolei, Makaiwa, Pearl City and West Beach. Sources of air pollution in the sewershed include industrial activities, vehicular emissions and natural sources (dust and vog). **Table 4-2** presents the state and national standards and **Table 4-3** summarizes the air quality data at the four monitoring stations in the project area. The data shows that there were no occurrences exceeding the standards in 2008.

Odor at the Honouliuli facilities has been a concern to people in the vicinity of these facilities. Currently the Honouliuli WWTP has a Covered Source Permit which requires periodic testing at the property line. The results of this testing will be summarized in the DEIS.

Table 4-2. National and State Ambient Air Quality Standards

Air Pollutant	Averaging Time	Standards		
		Hawaii State Standard	Federal Primary Standard[a]	Federal Secondary Standard[b]
Carbon Monoxide	1-hour	9 ppm	35 ppm	None
	8-hour	4.4 ppm	9 ppm	
Nitrogen Dioxide	Annual	0.04 ppm	0.053 ppm	Same as primary
PM_{10}	24-hour	150 µg/m^3	150 µg/m^3	Same as primary
	Annual[c]	50 µg/m^3	None	
$PM_{2.5}$	24-hour	-	35 µg/m^3	Same as primary
	Annual		15 µg/m^3	
Ozone	8-hour[d]	0.08 ppm	0.075 ppm	Same as primary
Sulfur Dioxide	3-hour	0.5 ppm	-	0.5 ppm
	24-hour	0.14 ppm	0.14 ppm	-
	Annual	0.03 ppm	0.03 ppm	-
Lead[e]	Calendar Quarter	1.5 µg/m^3	0.15 µg/m^3	Same as primary
Hydrogen Sulfide	1-hour	0.025 ppm	None	None

Source: State of Hawaii, Department of Health, State of Hawaii Annual Summary 2008 Air Quality Data, August 2009.

[a]Primary Standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children and the elderly.

[b]Secondary Standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

[c]Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, EPA revoked the annual PM^{10} standard effective December 17, 2006. However, the state still has an annual standard.

[d]Effective May 27, 2008.

[e]Due to almost non-detectable levels, ambient air monitoring for lead was discontinued in October 1997 with EPA approval. However, since 2003 lead continues to be measured as part of the Air Toxics monitoring program. Revised federal lead standard effective October 15, 2008.

Table 4-3. 2008 Air Quality Data at the Air Monitoring Stations in the Project Area

Monitoring Station	Location	Monitoring Objective	Land Use	24-hr PM_{10} ($\mu g/m^3$)	24-hr $PM_{2.5}$ ($\mu g/m^3$)	1-hr CO (ppm)	8-hr CO (ppm)	3-hr SO_2 (ppm)	24-hr SO_2 (ppm)	1-hr NO_2 (ppm)
Kapolei	In Kapolei Business Park	Population Exposure	Urban	61	35	2.2	0.7	0.009	0.005	0.030
Makaiwa	Across from the Honokai Hale subdivision	Source Impact	Urban	-	-	-	-	0.018	0.008	-
Pearl City	On the Leeward Health Center	Population Exposure	Urban and Center City	73	26	-	-	-	-	-
West Beach	Within the Ko'Olina Golf Course	Source Impact	Urban	23	-	-	-	0.010	0.005	0.024

Source: State of Hawaii Annual Summary 2008 Air Quality Data (August 2009)
PM10 - Particulate matter that is 10 microns or less in aerodynamic diameter
PM2.5 - Particulate matter that is 2.5 microns or less in aerodynamic diameter

Construction Impacts and Mitigation Measures

Anticipated construction impacts to air quality include, but are not limited to, increases in particulate matter or dust from vehicle movement on the construction site, excavation activities, spoils removal activities and emissions from construction vehicles and equipment. Construction activities shall comply with the HRS, Chapter 342B, *Air Pollution Control*, the HAR, Title 11, Chapter 60.1, *Air Pollution Control* and Federal, State and CITY laws and regulations. Mitigation measures include BMPs such as watering of construction and access roads to control dust and proper maintenance of the vehicles and equipment to minimize exhaust emissions.

The DEIS will include a qualitative air quality assessment of construction-related impacts (primarily dust emissions).

Operational Impacts and Mitigation Measures

Operational impacts to air quality may include an increase in emissions due to additional wastewater management facilities that generate emissions, a decrease in emissions due to lower emissions from the upgraded facilities and/or an increase in emissions from additional operating vehicles in the project area. A qualitative air quality study will be completed to assess the potential long-term impacts on air quality from project operations. Proposed operational activities that may affect air quality will be reviewed in the DEIS.

The air quality assessment in the DEIS will include qualitative assessment of potential odors in the project area. The odor analysis would consist of a description of the odorous compounds that would likely be emitted, the direction the emissions would likely be carried by the prevailing winds in the area, and estimates of the maximum downwind distances that detectable odors may exist. Potential negative impacts may occur as a result of operation of additional equipment and an increase in the quantity of wastewater being treated. However, alternatives that call for elimination of several WWPSs would be anticipated to reduce odors in the project area as would upgrades to the current odor control system at the Honouliuli WWTP. In addition, new equipment at the Honouliuli WWTP may also lower emissions.

Residential, commercial and industrial population in the Honouliuli Sewershed may increase following the infrastructure upgrade. This population increase may result in an increase in:

- carbon monoxide from vehicular emissions,
- hydrogen sulfide from certain industrial processes,
- nitrogen dioxide due to an increase electric utilities, industrial boilers, motor vehicle exhaust and combustion of fossil fuels
- ozone from the reaction of nitrogen oxides and volatile organic compounds (VOCs) in the presence of sunlight
- particulate matter from increased development, fuel combustion and other coarse and fine particles

Overall, there would likely be some impact on air quality in the Honouliuli Sewershed.

4.6 NOISE

Existing Environment

There are many sources of noise in the project area including noise from traffic, industrial facilities and residential activities, with the major source of noise from vehicles. The State DOH has limits on the level of noise allowed in different zoning districts. **Table 4-4** shows the maximum permissible sound levels in Hawaii. Noise levels shall not exceed the maximum permissible sound levels for more than ten percent of the time within any twenty minute period, at any time except by permit or variance. **Table 4-5** shows typical noise levels from different sources.

Table 4-4. Maximum Permissible Sound Levels in dBA

Zoning Districts	Zoning Equivalent	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Class A	Residential, Conservation, Preservation, Public Space, Open Space, or Similar Type	55	45
Class B	Multi-family Dwellings, Apartment, Business, Commercial, Hotel, Resort, or Similar Type	60	50
Class C	Agriculture, Country, Industrial, or Similar Type	70	70

Source: HAR Title 11, Department of Health, Chapter 46 Community Noise Control

Table 4-5. Typical Noise Levels in dBA

Noise Source	Sound Level (dBA)
Whisper	30
Normal Conversation	60
Garbage Disposal	80
Bulldozer (insulated cab)	85
Crane (insulated cab)	90
Lawnmower	90
Welding Machine	90
Planer	95
Table Saw	95
Circular Saw	100
Concrete Chipping	100
Firecrackers	100
Hammering	100
Bulldozer (no cab)	105
Crane (uninsulated cab)	105
Miter Saw	105
Bulldozer (no muffler)	110
Hammer Drill	115
Jack Hammer	120
Pile Driver	120

Construction Impacts and Mitigation Measures

Noise during construction is expected to be the most significant source of potential noise impacts associated with the project. The potential for adverse noise impacts will increase if construction activities must occur during the nighttime, on Sundays, or during holidays due to the nature of the selected methods of construction. Therefore, a review of the project alternatives with respect to methods of construction will be performed, and potential noise impacts associated with the alternate methods of project construction will also be described. Possible noise mitigation measures will be described as required for the various alternate methods of construction. Proposed mitigation measures include, but are not limited to, noise barriers around the construction area, mufflers or intake silencers for construction equipment and strategic placement of noisy stationary equipment (away from the property line).

Construction activities would be carried out in accordance with HRS Chapter 342F, Noise Pollution, HAR Title 11, Chapter 46, Community Noise Control and all Federal, State and CITY laws and regulations. According to HAR Title 11, Chapter 46, construction activity is permitted Monday through Friday from 7:00 am to 6:00 pm and Saturday from 9:00 am to 6:00 pm. Construction activities associated with the proposed project would comply with these time restrictions to the extent practicable. Therefore, it is likely that a Community Noise Variance would be required to exceed the maximum permissible sound levels or for work outside of normal hours.

Operational Impacts and Mitigation Measures
A review of the project alternatives will be conducted regarding the possible locations of fixed and mobile noise sources and their relationship to noise sensitive receptor locations. Background ambient noise measurements will be obtained at these noise sensitive locations and compared with predictions of potential noise levels associated with the project's noise sources. Assessments of potential noise impacts associated with the project will be made, and possible noise mitigation measures will be described as required.

The adverse noise impacts resulting from the proposed activity may include increased vehicular noise due to additional vehicles traveling to and from the facilities, and increased stationary noise resulting from additional equipment at the facilities. Mitigation measures include soundproofing or muffling equipment noise and locating equipment near the center of the property to form a buffer so that noise levels remain below the maximum levels. The expected beneficial impact on noise with the GST alternative is the possibility of fewer WWPSs and the resulting decrease in associated noise from vehicular traffic and stationary noise.

Overall, it is expected that there would be operational impacts on noise from the project; however, the extent of the impact has yet to be determined. The DEIS will discuss the effects of construction and operation of the recommendations on noise in further detail.

4.7 Biological Resources

4.7.1 Flora

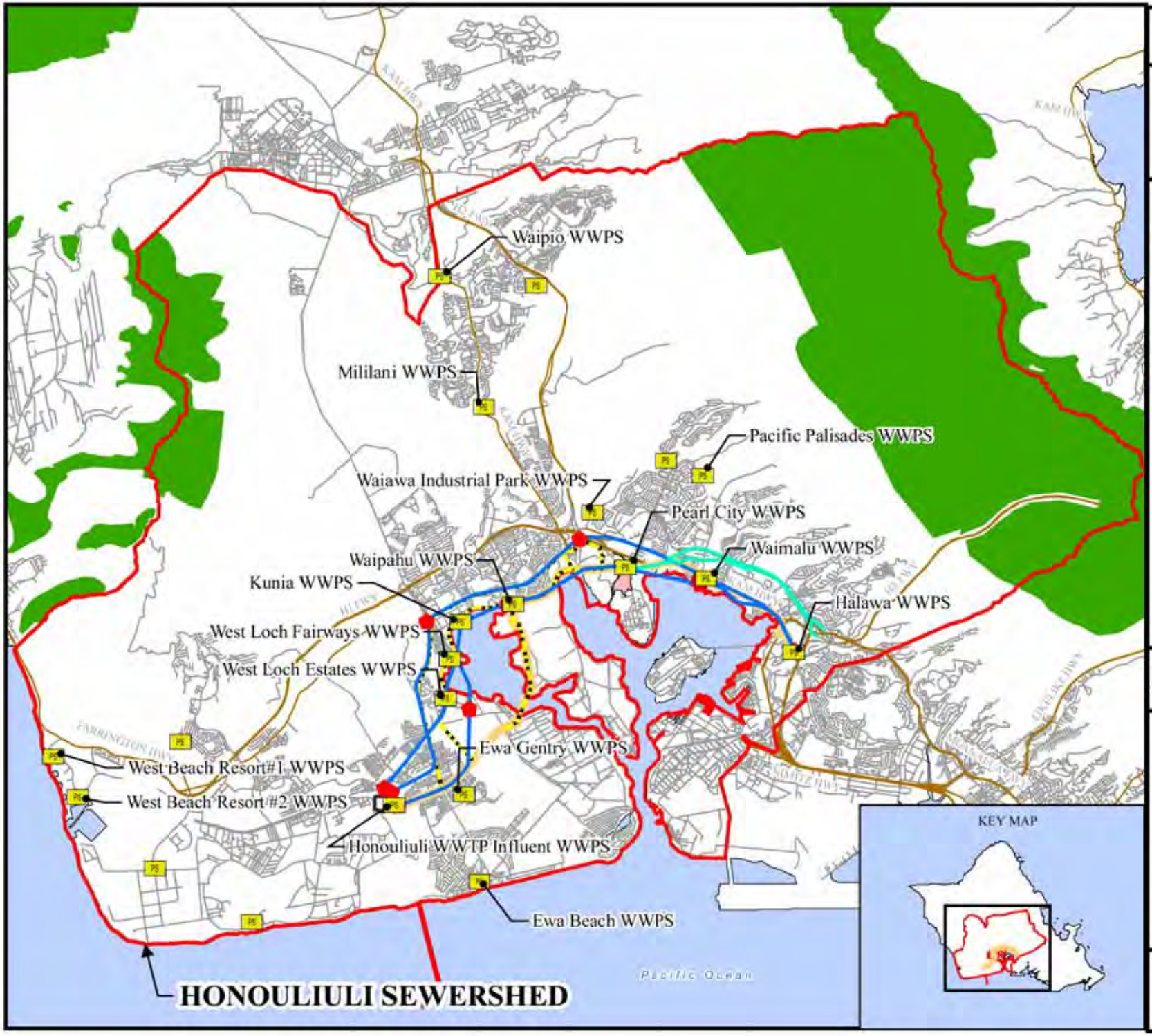
Existing Environment
According to the Threatened and Endangered Plants layer from the Hawaii Statewide GIS Program, there are no known threatened or endangered plants in the project area; however, there are threatened and endangered plants in the sewershed. These critical habitats are located in undeveloped areas of the sewershed and are shown in **Figure 4-10**.

National Oceanic and Atmospheric Administration (NOAA) Fisheries Service, Pacific Islands Regional Office indicates that there may be seagrass habitat in the marine nearshore environment (see NOAA Fisheries Service email in **Appendix A**). The presence of seagrass in the project area will be further investigated in the upcoming DEIS.

According to DLNR Division of Aquatic Resources (DAR) the sewershed traverses a number of potentially sensitive habitats that encompass a broad spectrum of aquatic environments including streams, Pearl Harbor and the shoreline area in Ewa. The shoreline area in Ewa has long been a popular location to harvest edible limu (seaweed), and freshwater springs in these areas provide a beneficial balance of nutrients and salinity for this resource.

The *West Mamala Bay Facilities Plan* determined that the developed areas within the project area are landscaped with plants typically found in urban areas; natural vegetation found in the undeveloped lower elevations include kiawe, koa haole, finger grass, and pili grass and higher elevation scrub forest vegetation includes guava, koa haole, lantana, Spanish clover and Bermuda grass.

As more site specific detail on the alternatives is developed, a flora survey will be conducted in the project area. The flora survey would include historical research and a field investigation of flora in the project area. Information from the flora survey will be incorporated in the DEIS.



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Honouliuli Sewershed
- Honouliuli WWTP
- Pump Stations
- Tunnel Shaft
- Tunnel Alternatives
- Additional Force Main
- Waimalu Relief Sewer
- StorageAlt
- Phase I Area
- Critical Plant Habitat
- Major Roadways
- Street

0 12,000 Feet

1 inch = 12,000 feet

FEA/EISPN

FIGURE 4-10

CRITICAL PLANT HABITAT

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Construction Impacts and Mitigation Measures
Although the routes for the various alternatives have not been completely defined, the majority of the anticipated routes are located in previously disturbed and/or developed areas; therefore, this project is expected to have minimal impacts on the flora in the project area. The GST alternative is approximately 20 to 100 feet below grade; therefore, flora is not likely to be affected by construction of the tunnel. However, tunnel shafts would be located at multiple surface locations and the construction associated with these may impact flora in the area. Shafts would be located to 1) avoid, 2) minimize and 3) mitigate impacts to flora in the project area. The alternative for a third force main for Pearl City and/or Waipahu would likely be near the existing force mains and may impact flora in the area. Areas with new facilities would be landscaped after construction. Since the force main is not as deep as the proposed GST alternative, roots from trees could cause damage to the force mains. The storage alternative may require the removal of several trees at the proposed storage locations.

Overall, significant construction impacts on flora in the project area are not expected.

Operational Impacts and Mitigation Measures
The proposed above ground, permanent wastewater management facilities are expected to be located within previously disturbed areas. Therefore, no significant operational impacts to flora in the area are anticipated. The proposed above ground facilities are likely to be landscaped.

4.7.2 Fauna

Existing Environment
According to the Bird Habitat and Critical Habitat layers from the Hawaii Statewide GIS Program, there are numerous critical habitats, several water bird habitats, fish ponds and reserves located in the Honouliuli Sewershed. According to GIS information from the HOLIS and DBEDT website, the wildlife reserves in the project area include: the Aiea Bay State Recreation Area, the Pearl Harbor National Wildlife Refuge (Middle Loch), the Pouhala Marsh Water Bird Sanctuary and the Pearl Harbor National Wildlife Refuge (West Loch). Several of the water bird habitats, fish ponds and reserves coincide with each other. **Figure 4-11** show the critical habitats, bird habitats, fish ponds and reserves in the project area. The forthcoming DEIS will further investigate whether threatened or endangered species are present in the project area.

According to DAR, the sewershed traverses a number of potentially sensitive habitats that encompass a broad spectrum of aquatic environments including streams, Pearl Harbor and the shoreline area in Ewa. Pearl Harbor is a large, sheltered nursery area for a number of species of marine fish. A diverse fish community can also be found in the area near the outfall.

NOAA Fisheries Service, Pacific Islands Regional Office states that there may be Essential Fish Habitat and coral habitat in the marine nearshore environment (see NOAA Fisheries Service email in **Appendix A**).

According to the *West Mamala Bay Facilities Plan*, feral mammals found in the sewershed include mongoose, mice, rats, wild pigs, dogs and cats. The report states that lower elevations provide natural habitat and feeding areas for cardinals, doves, mynas, ricebirds, sparrows and white-eyes, while the migratory golden plover, a common winter resident, can be found foraging in lawns and golf courses in urbanized areas.

As more site specific detail on the alternatives is developed, a fauna survey will be conducted in the project area. The fauna survey would include historical research and a field investigation of fauna in the sewershed. Information from the fauna survey will be incorporated in the DEIS.

Construction Impacts and Mitigation Measures
During design, the tunnel, tunnel shafts, proposed third force main for Pearl City and/or Waipahu and storage facilities would be located to: 1) avoid, 2) minimize and 3) mitigate impacts to critical habitats, bird habitats, fish ponds and reserves. Construction of the tunnel is not expected to impact fauna in the sewershed since construction is trenchless and deep. Construction of tunnel shafts may impact flora and fauna in the area. The alternative for a third force main for Pearl City and/or Waipahu would likely be near the existing force mains and may affect some bird habitats, fish ponds or reserves. Construction of the storage facilities is not expected to affect the fauna in the area given that there are no bird habitats or reserves near these facilities. As part of the DEIS, all locations of surface construction activity will be analyzed for the potential impact to fauna.

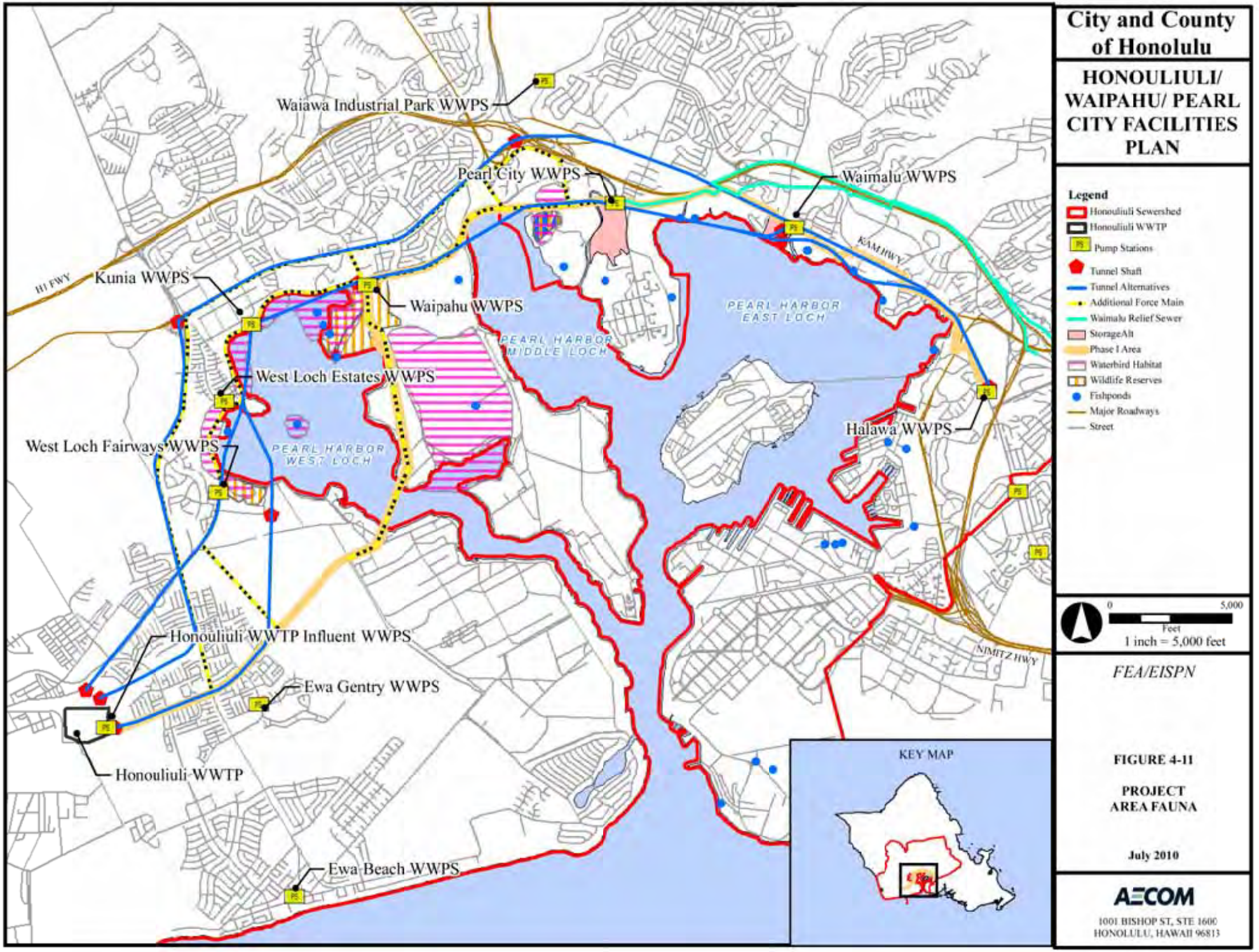
Construction lights are known to blind and disorient migratory birds. Therefore, during construction along the shoreline, mitigation measures including shielding lights and facing the lights downward would be used to minimize impacts to migratory birds. All work would be in accordance with Federal, State and CITY regulatory requirements including, but not limited to the Migratory Bird Act and the Endangered Species Act.

Overall, it is expected that there would be minimal construction impacts on fauna in the project area.

Operational Impacts and Mitigation Measures
Few long-term impacts to fauna are anticipated from operation and maintenance of the force main, GST and WWPSs. Maintenance of the tunnel would be from the shafts and would have minimal impacts to the fauna in the area since the tunnel is underground. The expected life cycle for the force main and tunnel are approximately 30 years and 150 years, respectively. The long life expectancy of these facilities would reduce the need for additional upgrades in the near future.

The operation of an upgraded (secondary treatment) Honouliuli WWTP is expected to improve the quality of the wastewater discharged; thus reducing the chance of altering the marine environment. The upgrade is likely to reduce nutrient and chemical pollution from the wastewater.

An anticipated indirect impact from increased developments (residential, commercial and industrial) is the possible loss of habitat for fauna in the sewershed. The increase in wastewater entering the Honouliuli WWTP is likely to result in an increase in effluent discharged at the outfall unless the amount of reuse can be increased. The increase in wastewater and resulting discharge has the potential to result in impacts to aquatic fauna. This issue will be evaluated as part of the DEIS



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

FEA/EISPN

FIGURE 4-11

PROJECT AREA FAUNA

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4.7.3 Wetlands

Existing Environment

According to the GIS data from the State, there are many wetlands in the sewershed; however there are only a few located within the project area. The types of wetlands in the project area include estuarine and marine deepwater, estuarine and marine wetland, freshwater emergent wetland, freshwater pond and freshwater forested/shrub wetland. **Figure 4-12** shows the location of wetlands in the project area.

The United States Army Corps of Engineers (USACE) has regulatory jurisdiction under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act and reviews and approves construction activities on or near wetlands. According to the USACE *Wetlands Delineation Manual* (1987), wetlands are defined as those areas that are inundated or saturated by surface or ground water 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 manual further states that wetlands generally include swamps, marshes, bogs, and similar areas.

A wetlands survey will be conducted in the areas proposed for construction activity. The wetlands survey would include historical research and a field investigation of wetlands. Information from the wetlands survey will be incorporated in the DEIS.

Construction Impacts and Mitigation Measures

During design, the tunnel, tunnel shafts, proposed third force main for Pearl City and/or Waipahu and storage facilities would be located to: 1) avoid, 2) minimize and 3) mitigate impacts to the wetlands in the project area. Construction of the tunnel is not expected to significantly impact wetlands since construction would be trenchless (approximately 20 to 100 feet below ground). Construction of the third force main for Pearl City and/or Waipahu may affect some wetlands. Tunnel shaft construction is not anticipated to impact wetlands. Mitigation measures include BMPs to minimize affects from construction activities.

All work would be in accordance with Federal, State and CITY regulatory requirements including, but not limited to the Section 404(b) (1) of the Clean Water Act and the Rivers and Harbors Appropriation Act.

Operational Impacts and Mitigation Measures

This project is expected to have minimal operational impacts to the wetlands; in fact, there is a potential benefit to the wetlands. The benefit would be reducing the likelihood of wastewater spills in the sewershed.

Maintenance of the tunnel would be from the shafts and would have minimal impacts to wetlands in the project area since the tunnel is underground. The expected life cycle for the force main and tunnel are approximately 30 years and 150 years, respectively. These upgrades would reduce the need for additional upgrades in the near future, thereby reducing the potential for future additional impacts to wetlands.

Wetlands may be indirectly affected by the lowering of groundwater due to increased water demand and reduction of groundwater recharge. This issued will be addressed further in the DEIS.

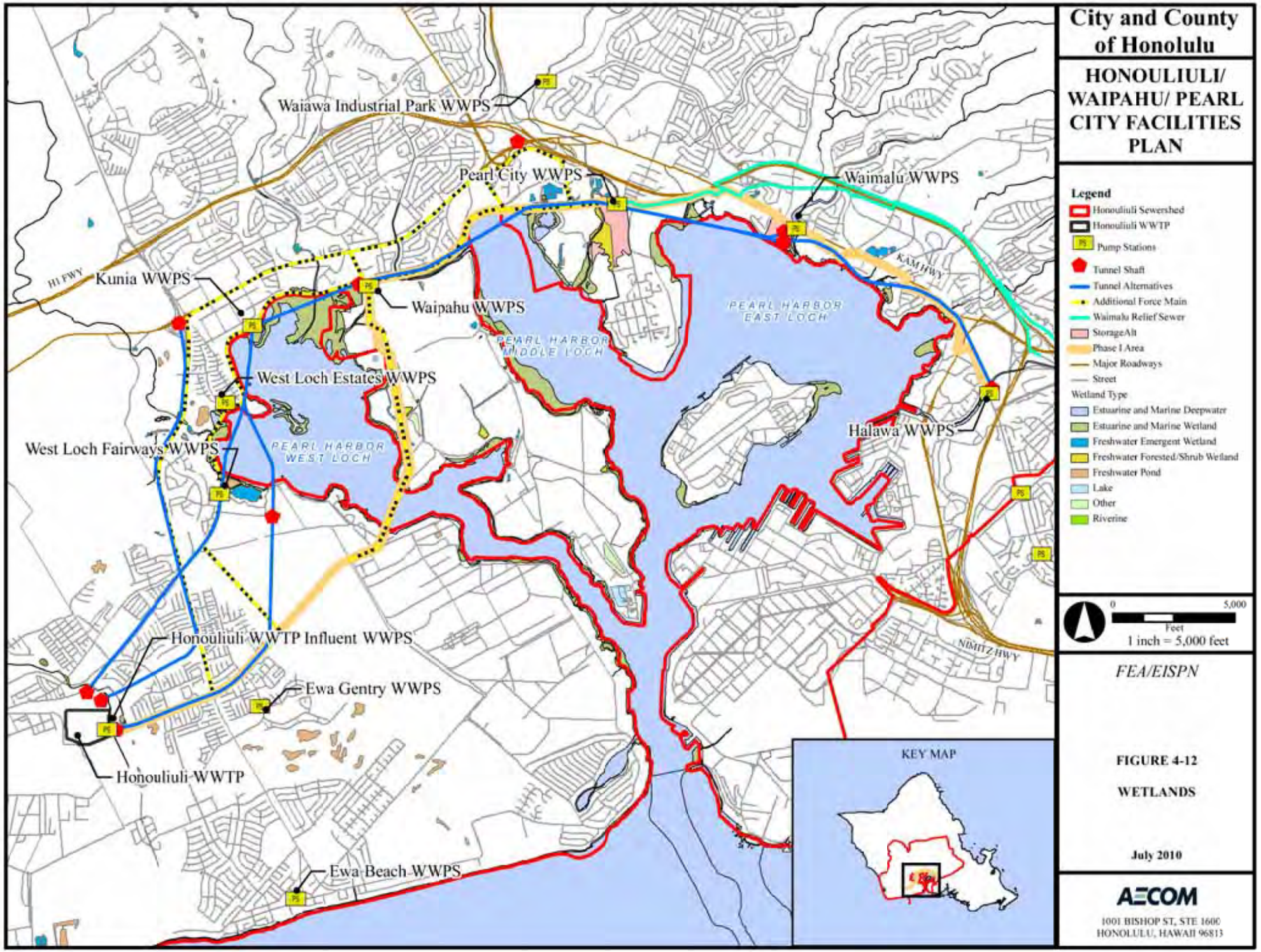
Waiawa Industrial Park WWPS
Pearl City WWPS
Waimalu WWPS
Kunia WWPS
Waipahu WWPS
West Loch Estates WWPS
West Loch Fairways WWPS
Halawa WWPS
Honouliuli WWTP Influent WWPS
Ewa Gentry WWPS
Honouliuli WWTP
Ewa Beach WWPS
HI FWY
KAM HWY
NIMITZ HWY
PEARL HARBOR EAST LOCH
PEARL HARBOR MIDDLE LOCH
PEARL HARBOR WEST LOCH
KEY MAP
City and County of Honolulu
HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN
Legend
Honouliuli Sewershed
Honouliuli WWTP
Pump Stations
Tunnel Shaft
Tunnel Alternatives
Additional Force Main
Waimalu Relief Sewer
StorageAlt
Phase I Area
Major Roadways
Street
Wetland Type
Estuarine and Marine Deepwater
Estuarine and Marine Wetland
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Lake
Other
Riverine
0
5,000
Feet
1 inch = 5,000 feet
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FIGURE 4-12
WETLANDS
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4.8 ARCHAEOLOGICAL, HISTORIC AND CULTURAL RESOURCES

4.8.1 Archaeological and Historic Resources

Existing Environment

The sewershed includes areas from which current and potential future wastewater flows to the Honouliuli WWTP. These include but are not limited to Hālawa, 'Aiea, Pearl City, Waipi'o, Waikele, Waipahu, 'Ewa, Kapolei and Mililani. The sewershed is understood as potentially crossing coastal portions of all twelve of the traditional Hawaiian land units (*ahupua'a*) of 'Ewa District (from west to east of Honouliuli, Pu'uloa, Hō'ae'ae, Waikele, Waipi'o, Waiawa, Mānana, Waimano, Waiau, Waimalu, Kalauao, 'Aiea, and Hālawa). The *ahupua'a* of 'Ewa were traditionally known in Hawaiian as "*momona*" ("fat", "fertile", "rich") lands in reference to the well-watered bottom lands at the mouths of the many streams suitable for ponded-taro-field (*lo'i kalo*) cultivation and for the wealth of marine resources that could be acquired from the many fishponds, fish traps, and the protected waters of the lochs of Pearl Harbor. These lands have been understood as capable of supporting relatively large and dense populations for more than a thousand years with these populations having been particularly focused on the margins of Pearl Harbor in the general vicinity of much of the proposed infrastructure improvements.

Historic and archaeological areas of concern in the sewershed are mainly in the vicinity of former Land Commission Awards (which although dating to circa 1850 are understood to generally reflect a residential pattern extending back far into pre-contact time). Most of the areas of heightened concern would be expected to be near streams or wetlands and very close to the waters of Pearl Harbor.

The majority of the construction would be along or near existing roadway corridors and the vast majority of the sewershed has been impacted by more than a century of commercial agriculture and urban and suburban development. Much of the record on the land of traditional Hawaiian land use and early post-contact developments would be anticipated to have been impacted or removed by this extensive land alteration.

Construction Impacts and Mitigation Measures

None of the alternatives under consideration are believed to involve construction activities in the immediate vicinity of previously identified historical or archaeological sites listed or determined as eligible on the State or National Register of Historic Sites. Potential impacts to any archaeological, cultural, or historic resources that may be encountered during construction of the proposed improvements would be mitigated by complying with HRS Chapter 6E, Historic Preservation. The DLNR State Historic Preservation Division (SHPD) would be consulted regarding the proper handling of such resources within the project area prior to implementation of specific projects.

To facilitate this consultation the DEIS would include a detailed archaeological literature review and field inspection investigations study that would include:

- Historical research to include study of archival sources, historic maps, Land Commission Awards and previous archaeological reports to construct a history of land use and to determine if archaeological sites have been recorded on or near this property. This would include: Inspection of USDA soil survey data (Foote et al. 1972) for the project area to identify soil types under or immediately adjacent to the area of investigation that, based on past experience, are more likely to contain archaeological deposits. Inspection of tax maps and historic maps showing presence of Land Commission Award (LCA) parcels within or adjacent to the project area.

- Review of GIS data (as available) and archaeological reports and records at SHPD. These would provide specific information on the location and distribution of previously recorded surface and subsurface archaeological resources within or near the project area. Additionally, archaeological reports would contain results of subsurface testing near the project area.
- Limited field inspection of portions of the project area to assess information available from the documentary research.

This proposed approach within the EIS would go far to identify areas of concern and provide data for the determination of appropriate mitigation prior to implementation of specific projects.

The majority of the construction would be along or near existing roadway corridors. Construction may require excavation of the affected areas to a sufficient width and depth which may potentially encounter subsurface archaeological sites, especially in previously undeveloped or less developed areas. It may be appropriate to mitigate such potential impacts in some areas through implementation of an archaeological monitoring program. The appropriateness of such mitigation for a specific project or any particular portion of a specific project would be determined in consultation with the DLNR SHPD and other appropriate parties in consideration of the findings of the technical study.

Should any significant archaeological, cultural or historic sites be found during construction activities, all work in the vicinity would cease and the DLNR SHPD would be promptly notified.

Operational Impacts and Mitigation Measures
No operational impacts on archaeological, cultural or historic resources are anticipated as a result of the operation of the proposed and alternative wastewater facility improvements.

No indirect impacts on archaeological, cultural or historic resources are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

4.8.2 Cultural Resources

Existing Environment
The *ahupua'a* (traditional Hawaiian land divisions) of the 'Ewa District were traditionally known as *momona* ("fat", "fertile", "rich") lands in reference to the well-watered bottom lands at the mouths of the many streams suitable for ponded taro field (*lo'i kalo*) cultivation and for the wealth of marine resources that could be acquired from the many fishponds, fish traps, and the protected waters of the lochs of Pearl Harbor.

Japanese, Filipino, and probably other ethnic communities have also developed and maintained their cultural traditions in the sewershed.

The majority of the construction would be along or near existing roadway corridors and the vast majority of the sewershed has been impacted by more than a century of commercial agriculture and urban and suburban development. A relatively small percentage of the sewershed is undeveloped or under-developed. This history of land use and western patterns of land ownership may have altered or destroyed many of the Native Hawaiian cultural features and cultural practices that once existed.

Preliminary research indicates that there are no Native Hawaiian or other ethnic group's cultural resources or cultural practices are known to be present or on-going within the sewershed.

However, further investigation will be conducted during the DEIS to confirm whether resources or practices relating to Native Hawaiian or other ethnic practices for subsistence, medicinal, religious and cultural purposes are in fact present or on-going – particularly in less developed portions of the project area such as along streams or in any areas of native plants.

It is the policy of the State of Hawaii under Chapter 343 HRS to require an evaluation of project impacts to cultural practices and cultural features in order to promote and preserve the cultural beliefs, practices and resources of Native Hawaiians and other ethnic groups. A technical report would be prepared to make a good-faith effort to identify any extant cultural properties or cultural practices within the project area and determine whether any project-related adverse impact is indicated. The proposed Cultural Impact Assessment would conform to the State OEQC guidelines for preparation of cultural impact studies and would be coordinated with the archaeological and historic resources effort.

- Examination of historical documents, Land Commission Awards, historic maps, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal and other resources or agricultural pursuits as may be indicated in the historic record.
- A review of the existing archaeological information pertaining to archaeological sites within the project area to reconstruct traditional land use activities and to identify and describe the cultural resources, practices, and beliefs associated with the parcel and identify present uses, if appropriate.
- Interviews with persons knowledgeable about the past and present cultural practices in the project area and surrounding areas. We anticipate both formal and informal interviews.
- Preparation of a report summarizing the information gathered related to traditional practices and land use. The report would assess the impact of the proposed undertaking on the cultural practices and features identified.

The most important element of preparing Cultural Impact Assessments is consulting with community groups, especially with expert and responsible cultural practitioners within the *ahupua'a* of the project area.

Construction Impacts and Mitigation Measures

The purpose of the Cultural Impact Assessment would be to determine and disclose any significant effects of the proposed actions on the cultural practices of the community and State.

Operational Impacts and Mitigation Measures

No operational impacts on cultural properties or on-going cultural practices are anticipated as a result of the operation of the proposed and alternative wastewater facility improvements.

No indirect impacts on cultural properties or on-going cultural practices are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

4.9 Visual and Aesthetics

Existing Environment

Visual and aesthetic resources include view planes of the Koolau Range, Waianae Range, ocean and various landmarks in the project area. The project area also includes from high-rises to single family homes, to commercial buildings, to industrial areas, to university campus, to agricultural farmland, to military land. Structures in the project area include Honouliuli WWTP, multiple WWPSs, Aloha Stadium, Hawaii Electric Company (HECO) power plants, multiple golf

courses, etc. There is a great deal of development in the Ewa and Kapolei areas; therefore, additional structures are being constructed in the project area.

Construction Impacts and Mitigation Measures
Construction of the proposed improvements may have some short term impact on the visual aesthetics in the area. During construction, fencing surrounding the construction site may be provided as needed to provide a visual screen. Any construction impacts regarding visual aesthetics are expected to be short-term and would cease after construction.

Operational Impacts and Mitigation Measures
Some new above grade facilities would be constructed as part of implementation of the alternatives. These new above grade structures may include some above grade storage facilities and new or relocated WWPSs. These structures are not expected to significantly impact the visual aesthetics in the area as these facilities would be located near the existing WWPSs. The addition of new structures at the WWTP would not affect the look of the Honouliuli WWTP. The facilities would be designed to blend in the new structures with the existing structures. Also, the area around the facilities is likely to be landscaped. The implementation of the GST alternative may allow for removal of several WWPS which would benefit the visual aesthetics in the area.

Anticipated indirect impacts to visual aesthetics are associated with increased capacity in the collection and treatment system to allow future developments (residential, commercial and industrial) in the sewershed to connect to the existing wastewater system, as envisioned in the Primary Urban Center and Ewa Development Plans. These future developments are expected to result in a more urbanized look in the sewershed.

5.0 EXISTING SOCIOECONOMIC ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

This section evaluates the potential short and long-term impacts of the proposed project on population and employment change, and on the economic stability of the sewershed. Although the most accurate and comprehensive census data is provided in the decennial census, more updated data provided periodically by the U.S. Census Bureau is also available. Further information and analysis of the socio-economic environment will be provided in the DEIS.

5.1 POPULATION

Existing Environment

Population projections for the Honouliuli Sewershed are presented in Section 3.1 and summarized in **Table 3-1**. The current estimated population in the sewershed is 335,000. **Table 5-1** summarizes key economic indicators of Honolulu County compared to that of Hawaii.

Table 5-1. Economic Indicators for Honolulu County & Hawaii

	Honolulu County	Hawaii
Population, 2008 estimate	905,034	1,288,198
Population, percent change from 4/1/2000 to 7/1/2008	3.3%	6.3%
Persons per square mile, 2000	1,460.3	188.6
Total number of firms, 2002	63,879	99,224
Median household annual income, 2007 estimate	$64,849	$62,613
Unemployment, percent, 2009 estimate	5.9%	7%
Persons below poverty, percent, 2007	7.8%	8.5%
Visitor arrivals, 2007 estimate	4,694,750	7,628,000

Source: U.S. Census Bureau.

The majority of the sewershed, including the location of the Honouliuli WWTP, lies within an urban or agricultural land district. The main industry sectors of the sewershed include tourism, military and government, and agriculture. Annual wage and salary jobs have been on the decline in recent years, while the unemployment rate has been on the rise. Economic activity is concentrated in the Honolulu area which accounts for about 66% of Oahu's firms, and about 37% of its population. In the third quarter of 2009, the City of Honolulu lost 11,700 (2.6%) wage and salary jobs over what was recorded in the third quarter of 2008. The occupations that had the largest job losses were in the natural resources, mining, and construction fields.

Construction Impacts and Mitigation Measures

The socio-economic impacts of construction are expected to be beneficial. Construction would directly impact the socio-economic environment by providing jobs to the community, and would thus temporarily reduce the unemployment rate. An estimate of the number and a description of the types of jobs that would be generated due to construction activity would be provided in the DEIS. Construction is expected to enhance the local economy through the purchase of some goods and services. This economic activity may permit moderate growth of business centers, which would help to counter the recent decline in several of the local economic indicators listed above. There could be temporary disruption to residents and businesses due to construction-

related traffic. However, a traffic mitigation plan would be implemented to provide clearly marked parking and traffic patterns.

Operational Impacts and Mitigation Measures

The project would provide improved wastewater collection and treatment infrastructure and thus provide positive incentive for residents and businesses to remain and invest in within the project area. Anticipated indirect impacts to socio-economic environment are associated with increased capacity in the collection and treatment system to allow future developments (residential, commercial and industrial) in the sewershed to connect to the existing wastewater system. These future developments (residential, commercial and industrial) are anticipated to increase residential population and to create commercial and industrial jobs in the sewershed. The increased growth would also potentially result in increased demand for municipal services, such as schools, fire and police services. The DEIS will evaluate the potential for additional growth, based upon the Primary Urban Center and the Ewa Development Plan, and the types of service demands that could be made upon the county.

5.2 INDUSTRIAL ACTIVITIES

Existing Environment

The project area lies within an urban district. Major industrial employers in the vicinity of the project area include waste management, refineries, power generation facilities, and construction-related supply storage and distribution. Census data from 2002 reports a total of 63,879 firms accounted for in Honolulu County, consisting of 64.4% of the total amount in the state. According to 2007 data by real estate specialists Colliers Monroe Friedlander, the total amount of existing industrial space on the island was approximately 36.4 million square feet of floor area, with a vacancy rate of approximately 3 percent. Existing industrial development of Oahu is concentrated into three areas, two of which, the Primary Urban Center and Ewa, are located in Ewa District, and close to the project area. The industrial outlook for the island is positive, with gross domestic product expected to rise 3.5% and visitor expenditures to rise 9.6% by 2012.

Construction Impacts and Mitigation Measures

Local industries would benefit from the construction as revenue would be generated for local vendors through the purchasing of materials needed during construction. Construction may however cause a minor adverse impact to industries that are close to the construction site due to intermittent traffic pattern disruption. As explained in the relevant sections (Noise and Traffic sections, respectively) of this FEA/EISPN the impacts are not expected to have a significant impact on nearby firms. It is also possible that some undeveloped or underutilized areas may be needed to provide temporary staging support for construction activity. These sites would not be available for alternative development opportunities for the duration of the construction activity.

Operational Impacts and Mitigation Measures

The project is expected to have both beneficial and adverse effects non-residential development and employment in the area. The proposed project has the potential to allow for more development and hence employment in the sewershed; however, the use of some additional acreage to provide for additional flow storage may result in loss of long-term development opportunity for other industrial growth. The acreage needed, if required at all, would be selected in light of existing development plans for the area, and footprints would be minimized to the extent possible. Proposed footprints and potential loss of development opportunities would be addressed in the DEIS.

The improvements in wastewater collection and treatment are expected to result in opportunities to attract new industries and to contribute to strengthening of existing industries, which would in turn have a stabilizing and beneficial effect on local socio-economic conditions.

6.0 EXISTING PUBLIC INFRASTRUCTURE AND UTILITES, POTENTIAL IMPACTS AND MITIGATION MEASURES

The following section provides a brief overview of the existing traffic, water, wastewater, solid waste disposal, electrical, and communications systems, and public services and the direct impacts that the proposed wastewater system improvements would have on each system. Additional information will be provided in the DEIS.

The DEIS will also provide information on the indirect impacts of the wastewater system improvements may have on public infrastructure, utilities, and community services. Increased capacity in the wastewater collection and treatment system may allow for an increase in development and urban expansion within the sewershed. Information regarding this projected expansion, which may result in increased demands on the CITY's public infrastructure services, will be provided in the DEIS.

6.1 TRAFFIC

Existing Environment

There are both State and CITY roadways in the vicinity of the project area. Existing State roadways near the project area include Salt Lake Boulevard, Kamehameha Highway, Farrington Highway, Fort Weaver Road and Geiger Road. CITY roadways include Waipahu Depot Street and Iroquois Road. These roadways range in size from one to four lanes in each direction. In addition to these roadways, there are also some dirt roads in the project area.

As additional information for the project develops, a traffic impact assessment report (TIAR) will be conducted. Baseline traffic data collection effort will be conducted on the roadways surrounding the proposed construction sites. Baseline condition of traffic operations will be determined and the results will be incorporated in the TIAR. Results from the TIAR will be incorporated in the DEIS.

Construction Impacts and Mitigation Measures

During construction of storage tanks and additional force main(s), construction-related vehicles near the construction sites would increase and may cause localized traffic delays. Storage facilities are proposed to be located at the site of existing facilities or on the former Pearl City WWTP site. Construction of the storage facility near the Halawa WWPS may impact traffic and parking at Aloha Stadium. There may be impacts to traffic and parking at the Neal Blaisdell Park during construction at the Waimalu WWPS site. The Pearl City storage facility is in a low traffic area; therefore, it is expected that there would be minimal impacts on traffic. Potential locations for additional force mains for Pearl City and Waipahu (which would potentially be near and possibly paralleling the existing force mains), for the most part, are not in high traffic areas.

There is expected to be increased traffic in localized areas near the tunnel shafts during construction. Construction vehicles would be used to transport construction equipment and trucks carrying tunnel spoils from the construction site to the designated disposal area may add to the congestion. Construction at the entrance shaft near the Halawa WWPS would affect traffic and parking at or near Aloha Stadium. Some parking spaces would be lost during construction. Trips generated by the construction activity will be estimated and added to the projected traffic demand on the roadways surrounding the construction site. The TIAR will recommend mitigative measures to reduce or eliminate adverse impact(s) on traffic operations resulting from trips generated by the construction activities.

Construction at the Honouliuli WWTP is likely to increase traffic near the Honouliuli WWTP site due to increase construction vehicles. Construction vehicles are expected to stay on-site when not in transit; therefore lane closures are not expected.

In addition to motorists, short-term traffic impacts during construction include inconvenience to bicyclists, pedestrians, joggers, residents, businesses, etc. Additional information will be provided in the DEIS.

The City Department of Facility Maintenance (DFM) requests that open trench construction and buried temporary bypass sewer lines within City roadways be kept to a minimum and utilized only where less destructive methods may not be feasible. DFM also requests that flowable fill or Controlled Low Strength Material (CLSM) be evaluated and/or considered for use as backfill material to allow for adequate compaction (see DFM letter in **Appendix A).**

A Department of Transportation (DOT) Highways Division permit is required to transport any oversized equipment/overweight loads on State highway facilities and the construction vehicles and types of equipment that would be used at the job site must be identified. DOT also requires compliance with their "Pipeline Removal Policy." A permit application and detailed construction plans must be submitted to the DOT Highways Division for review and approval for any work done within the State highway right-of-way.

Mitigation measures may include traffic control plans as necessary, adequate notice to the public and applying for required permits and approvals for work in the roadways. During construction, various agencies would be notified including Emergency Medical Services, Honolulu Police Department, Honolulu Fire Department, Department of Transportation Services and Oahu Transit Services.

Overall, it is anticipated that there may be some short-term construction-related impacts to the traffic in project area. As additional information for the project develops and additional information becomes available, a traffic impact assessment will be conducted to determine current and future traffic conditions. The DEIS will discuss the effects of construction and operation of the recommendations on traffic in further detail.

Operational Impacts and Mitigation Measures

Anticipated operational impacts associated with traffic at the storage facilities and additional force main(s) are minimal as there will be space on-site at the storage facilities for the additional maintenance vehicles. Access to the storage facilities from the public roadways will be examined to determine if any roadway improvements are required to accommodate the future operational traffic.

Operational impacts associated with traffic for the tunnel include possible lane closures for tunnel maintenance at the shaft locations located within roadways. The GST alternative may reduce the number of pump stations in the project area, thus, reducing maintenance and rehabilitation of force mains and associated required lane closures.

Operation of the Honouliuli WWTP should not increase nearby traffic as no increase in operational staff is anticipated. Possible alternatives to reduce solids production at the Honouliuli WWTP will be evaluated. If successful, trucking of solids to the landfill would be reduced, therefore reducing traffic near Honouliuli WWTP.

As additional information for the project is developed and additional information and locations are evaluated, a traffic impact assessment will be conducted to determine current traffic conditions, future traffic conditions and if required will recommend mitigative measures to reduce or eliminate the traffic impacts.

6.2 WATER

Existing Environment

The emergency fire and potable water supply for the island of Oahu is provided by the CITY's BWS, which is a semi-autonomous agency that constructs, operates, and maintains the pumping stations and associated distribution network. The BWS relies solely on groundwater for potable water supply. For industrial and irrigation purposes, the BWS utilizes the Honouliuli Water Recycling Facility, which recycles wastewater for non potable uses.

Construction Impacts and Mitigation Measures

A thorough evaluation of the existing water distribution system would be performed to minimize conflicts with the proposed construction activities. Coordination with the BWS would be necessary during design to avoid or minimize the potential for conflicts. Requests for additional potable water or recycled water must be submitted to BWS for review. Construction drawings should be submitted to BWS review as part of the building permit application process and the availability of the water would be confirmed during the review and approval of the building permit application. Additional information would be incorporated into the DEIS as additional information becomes available and is further developed for the project.

Operational Impacts and Mitigation Measures

The engineering alternatives include the upgrade, relocation, or construction of wastewater facilities, and may require additional potable and/or emergency water service during operation. BWS recommends the use of drought tolerant/low water use plants and xeriscaping principles for all landscaping and installation of an efficient irrigation system, such as drip irrigation, incorporating moisture sensors to avoid the operation of the system in the rain and if the ground has adequate moisture. Honouliuli WWTP

6.3 WASTEWATER

Existing Environment

The existing wastewater infrastructure in the project area is described in **Section 2**. Improvement of the existing wastewater collection and treatment system is the focus of the ongoing evaluation and the subject of this FEA/EISPN. Wastewater is drained primarily by gravity to 16 pump stations distributed throughout the Honouliuli Sewershed. Wastewater is then pumped through force mains to the Honouliuli Wastewater Treatment Plant, where it is treated and discharged through the Barbers Point Deep Ocean Outfall, located approximately 1.7 miles offshore at a depth of 200 feet. Refer to **Figure 2-1** and **Figure 2-2**) for the locations of existing pump stations and force mains.

Construction Impacts and Mitigation Measures

Further information regarding the impacts of incorporating the proposed improvements into the existing wastewater system will be provided in the DEIS.

Operational Impacts and Mitigation Measures

As mandated by the EPA, the long-term goal of this project is to recondition the existing sanitary sewer system to reduce I/I and provide an engineering solution for managing peak wastewater flows. Additional information on the recommended engineering solutions will be provided in the

DEIS. These improvements would contribute to improved water quality in the project area, and thus result in a beneficial effect.

6.4 Solid Waste Disposal

Existing Environment

The ENV, Refuse Division provides collection, disposal, and recycling services to the island of Oahu. Solid waste, excluding construction debris, is transported to the HPower waste-to-energy facility, a recycling center, composting center, or directly to the Waimanalo Gulch Landfill by the ENV or private haulers. Construction debris is transported to the PVT Land Company located in Nanakuli by private haulers.

Construction Impacts and Mitigation Measures

The construction of the proposed wastewater system improvements may have some impact on the solid waste disposal operations within the project area. Solid waste from the construction of the collection system (force main, relief sewer or GST) may be a significant amount. The quality and quantity of the solid waste to be disposed will be discussed in further detail in the forthcoming DEIS. Coordination with local landfills and recycling centers for the disposal of construction debris and/or hazardous materials may be required. Disposal would be in accordance with appropriate regulations and standards.

Operational Impacts and Mitigation Measures

The proposed wastewater system improvements are expected to have minimal impact on the solid waste disposal operations within the project area. Solid waste generated at the pump stations and treatment facilities would continue to be disposed of in accordance with local requirements.

6.5 Electrical and Communication

Existing Environment

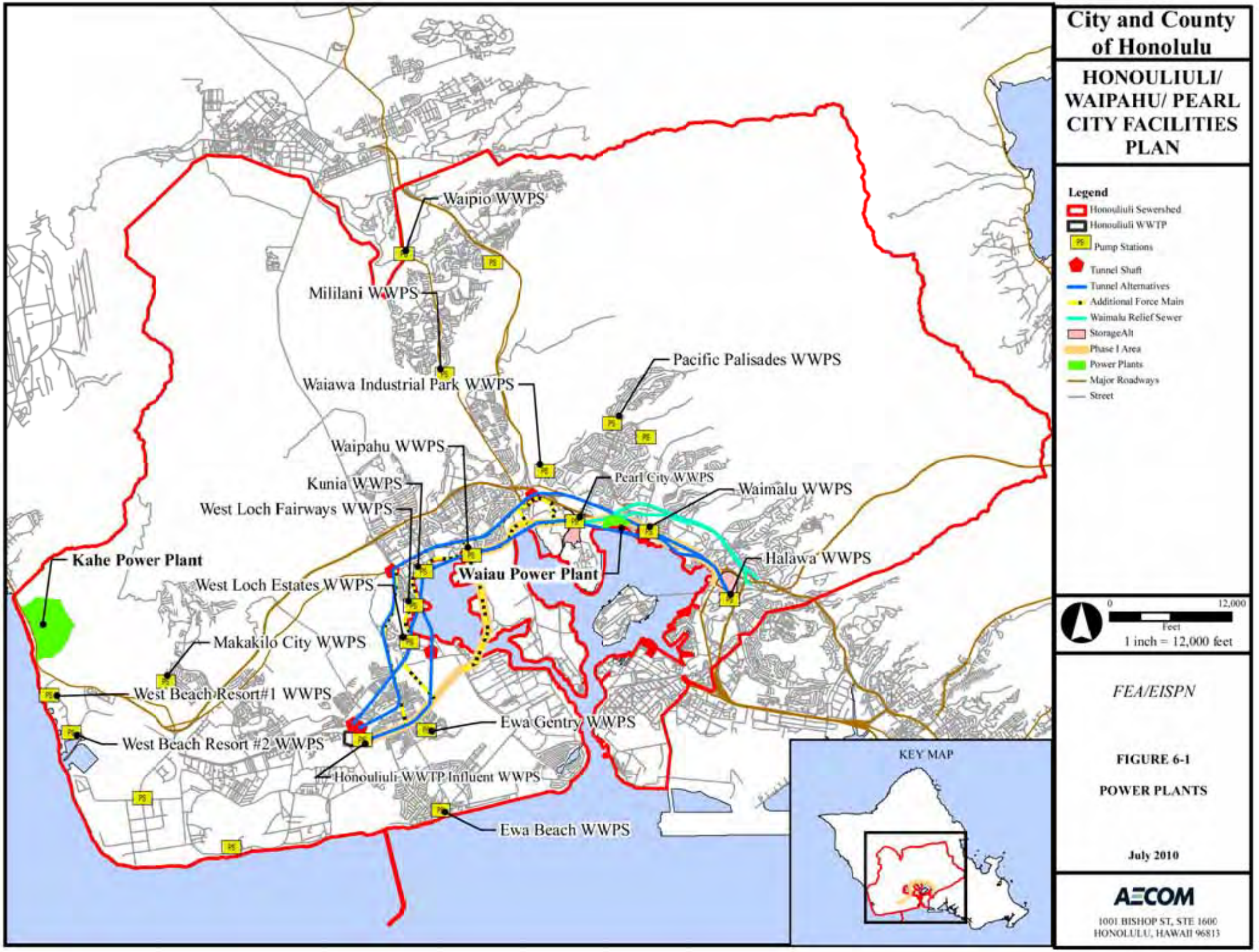
HECO supplies electricity to the majority of Oahu. Two of HECO's major facilities, the Kahe and Waiau Power Plants, are located within the Honouliuli Sewershed (see **Figure 6-1**). Telephone and internet services within the project area are provided by Hawaiian Telcom and Oceanic Time Warner Cable. Oceanic Time Warner Cable also provides cable services within the project area. These services are transmitted through underground and aerial lines located in the project area.

Construction Impacts and Mitigation Measures

A thorough analysis of the electrical and communication systems would be performed in order to minimize conflicts with transmission lines during construction. Coordination with HECO, Hawaiian Telcom, and Oceanic Time Warner Cable, would be necessary to minimize and/or avoid these potential conflicts.

Operational Impacts and Mitigation Measures

The engineering alternatives including the upgrade, relocation, or construction of wastewater facilities may require additional electrical and/or communication services for operation. The need for provision of additional services will be analyzed in the DEIS.



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Honouliuli Sewershed
- Honouliuli WWTP
- Pump Stations
- Tunnel Shaft
- Tunnel Alternatives
- Additional Force Main
- Waimalu Relief Sewer
- StorageAlt
- Phase I Area
- Power Plants
- Major Roadways
- Street

0 12,000 Feet

1 inch = 12,000 feet

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FIGURE 6-1

POWER PLANTS

July 2010

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6.6 GAS

Existing Environment

The Gas Company, LLC maintains underground utility gas mains which serve commercial and residential customers in the project area.

Construction Impacts and Mitigation Measures

A thorough analysis of the gas mains would be performed in order to minimize conflicts with the underground lines during construction. Coordination with The Gas Company, LLC would be necessary to minimize and/or avoid these potential conflicts.

Operational Impacts and Mitigation Measures

The engineering alternatives including the upgrade, relocation, or construction of wastewater facilities are not likely to require gas lines for operation.

6.7 PUBLIC SERVICES

Existing Environment

The Honolulu Police Department (HPD) and Honolulu Fire Department (HFD) provide emergency services to the island of Oahu. The HPD has divided the island into eight patrol districts with five district stations. The Pearl City and Kapolei district stations are located within the project area.

Construction Impacts and Mitigation Measures

Coordination with the HPD and/or HFD during construction would be necessary to mitigate traffic congestion and ensure public safety. Coordination with the HFD for the safe design of new or upgraded structures would also be necessary. Construction operations that require HPD or HFD involvement will be examined further in the DEIS.

Operational Impacts and Mitigation Measures

The operation of the proposed wastewater system improvements is expected to have minimal impact on the HPD and HFD. Operational components that may require HPD or HFD involvement will be examined further in the DEIS.

6.8 SCHOOLS

There are numerous public schools in the vicinity of the project area including:

- Aiea Elementary School
- Aiea High School
- Aiea Intermediate School
- Alvah A Scott Elementary School
- August Ahrens Elementary School
- Ewa Elementary School
- Holomua Elementary School
- Lehua Elementary School
- Keoneula Elementary School
- Pearl City Elementary School
- Pearl Ridge Elementary School
- Waimalu Elementary School
- Waipahu Elementary School
- Waipahu High School
- Waipahu Intermediate School

Of these fifteen public schools, only Lehua Elementary and Pearl Ridge Elementary are anticipated to be directly affected by at least one of the alternatives. **Figure 6-2** shows the public schools in the project area.

Construction Impacts and Mitigation Measures
Prior to construction, the State Department of Education and the individual schools in the area would be consulted to coordinate work in the vicinity. During construction, there may be additional noise and traffic at or near the schools. Construction related impacts would be short term and is not anticipated to have any significant impacts. Mitigation measures may include working after school hours and proper traffic control. Additional mitigation measures will be discussed in the DEIS.

Operational Impacts and Mitigation Measures
No operational effects to schools are anticipated, other than periodic inspection and/or maintenance of proposed wastewater management facilities located on or near school property. Mitigation measures include the proper design and construction of the sewers.

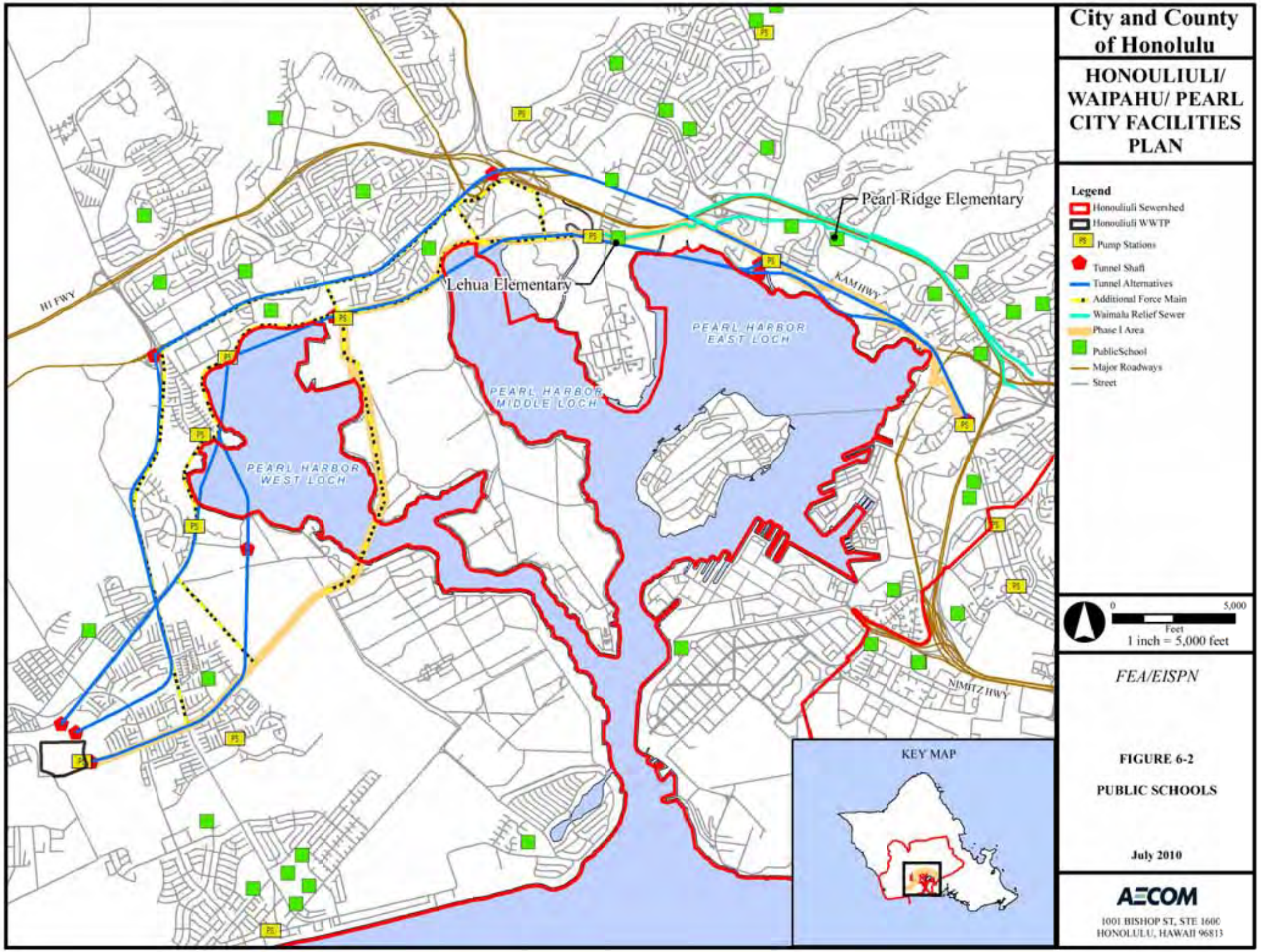
6.9 PARKS AND RECREATIONAL AREAS

There are numerous parks and recreational areas in the vicinity of the project area including:

- Aiea Bay Recreation Area
- Aiea District Park
- Asing Community Park
- Ewa Mahiko District Park
- Ewa Villages Golf Course
- Geiger Community Park
- Halawa District Park
- Iroquois Point Neighborhood Park
- Lehua Community Park
- Neal S. Blaisdell Park
- Pacheco Neighborhood Park
- Pearl Ridge Community Park
- Pupuole Street Mini Park
- Ted Makalena Golf Course
- Waimalu Neighborhood Park
- Waipahu Cultural Garden
- Waipahu District Park
- Waipio Peninsula Sports Complex
- West Loch Community Shoreline Park
- West Loch Golf Course

Of these twenty parks and recreational areas, only Lehua Community Park, Neal S. Blaisdell Park, Pearl Ridge Community Park, Waipio Pennisula Sports Complex and West Loch Community Shoreline Park are expected to be directly affected by at least one of the alternatives.

Figure 6-3 shows the parks and recreational areas in the project area.



City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Honouliuli Sewershed
- Honouliuli WWTP
- Pump Stations
- Tunnel Shaft
- Tunnel Alternatives
- Additional Force Main
- Waimalu Relief Sewer
- Phase I Area
- PublicSchool
- Major Roadways
- Street

0 5,000 Feet

1 inch = 5,000 feet

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FIGURE 6-2

PUBLIC SCHOOLS

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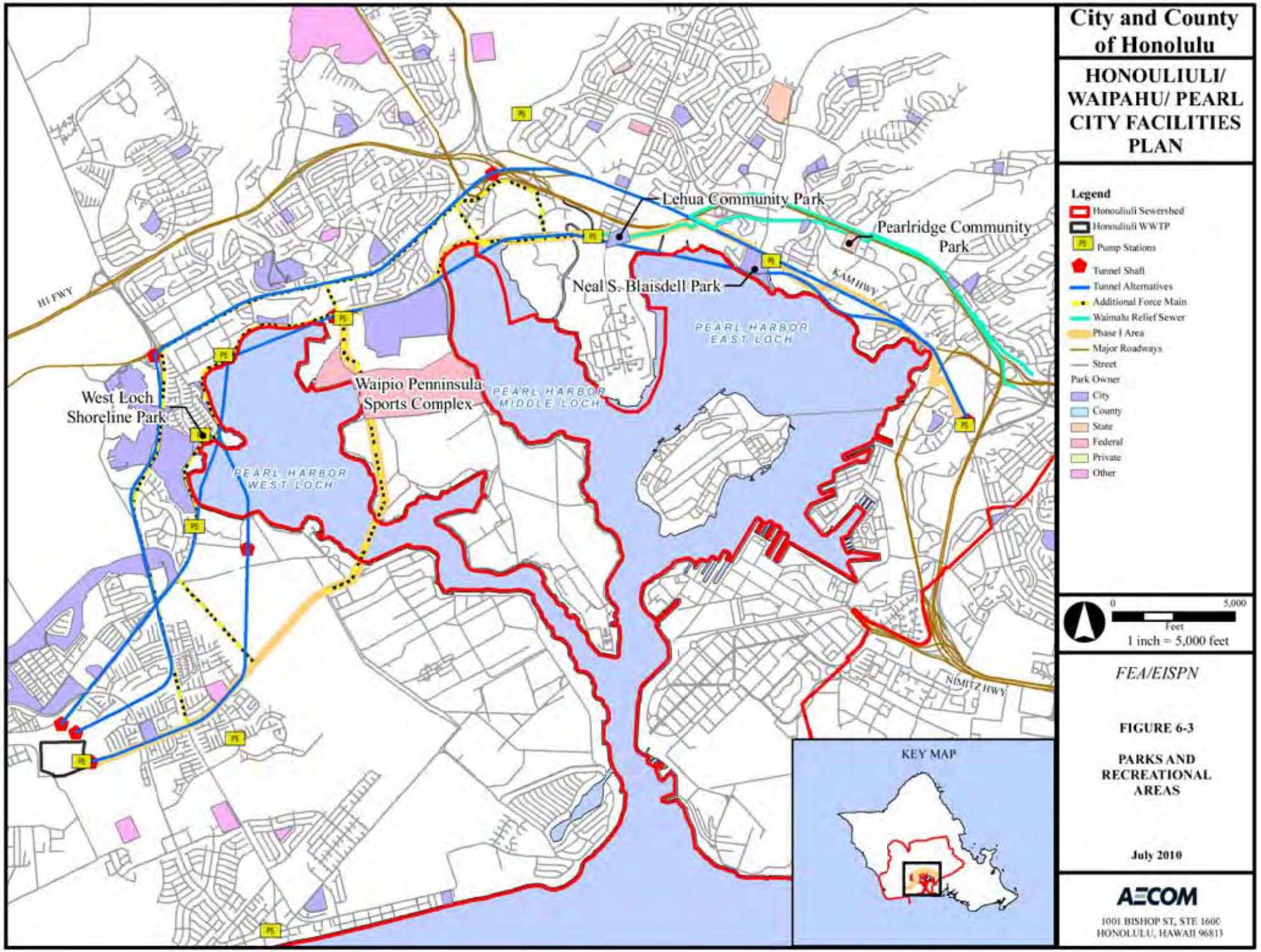

City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN

Legend

- Honouliuli Sewershed
- Honouliuli WWTP
- PS Pump Stations
- Tunnel Shaft
- Tunnel Alternatives
- Additional Force Main
- Waimalu Relief Sewer
- Phase I Area
- Major Roadways
- Street

Park Owner

- City
- County
- State
- Federal
- Private
- Other

0 5,000 Feet

1 inch = 5,000 feet

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FIGURE 6-3

PARKS AND RECREATIONAL AREAS

July 2010

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Construction Impacts and Mitigation Measures
Prior to construction, State DLNR Division of State Parks and CITY Department of Parks and Recreation would be consulted to coordinate work in the vicinity. During construction, there may be additional noise and traffic at or near the parks and recreational areas. As specific construction sites and routes are identified, effects on parks and recreational areas will be evaluated and presented in the DEIS. Mitigation measures may include proper traffic control. Additional mitigation measures will be discussed in the DEIS.

Operational Impacts and Mitigation Measures
No operational effects to schools are anticipated, other than periodic inspection and/or maintenance of proposed wastewater management facilities located on or near school property. Mitigation measures include the proper design and construction of the sewers.

7.0 CUMULATIVE IMPACTS

According to HAR Chapter 200, cumulative impacts means the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Additionally, cumulative impacts can result from individually minor but collectively significant actions taking place over time.

It is expected that this project would result in cumulative impacts when considered in conjunction with present and reasonably foreseeable future actions to the environment. Present and reasonably foreseeable future actions in the sewershed include the Honolulu High-Capacity Transit Corridor Project (HHCTCP), the new University of Hawaii West Oahu Campus in Kapolei, master planned communities, retail developments, commercial developments and industrial developments in the sewershed. These potential cumulative impacts will be further assessed in the DEIS.

8.0 LAND USE PLANS, POLICIES AND CONTROLS

Development within the State of Hawaii is guided through a combination of land use plans, policies and controls set at the State level and tiered down to the CITY level. This section addresses the various guidance documents, rules and regulations that will be analyzed in the preparation of the DEIS. The plans will be reviewed to assess consistency of the proposed project alternatives with development, plans, zoning, and special management area goals and requirements. The project area includes potential development activity within three of the eight planning areas of Oahu: Ewa, Central Oahu, and the Primary Urban Center.

8.1 STATE OF HAWAII

The State of Hawaii maintains a statewide planning system that includes State and County Land Use Plans, Policies and Controls to provide standards and guidelines for development. Updating the Wastewater Facilities Plan and evaluating the need for expansion and upgrade to the system is necessary to accommodate future growth and development. The DEIS will reference the appropriate Plans, Policies and Controls to assist in evaluating the system alternatives to best meet future needs.

8.1.1 Hawaii State Plan

The Hawaii State Plan sets forth overall goals, objectives, policies and priorities for the State to guide future long-range development. In accordance with HRS 226-14 and 226-15, the DEIS will evaluate the Honouliuli wastewater system to maintain basic public health and sanitation standards, plan to accommodate the needs of Hawaii's people through coordination of facility systems and to promote the adequate development of sewerage facilities that complement planned growth.

8.1.2 State Land Use Classification

The Land Use Commission (LUC) administers the state wide zoning law as outlined in Chapter 205 of the HRS and Title 15, Chapter 15 of the HAR. The purpose of the LUC is to designate all lands in the state into one of four land use districts: Urban, Rural, Agricultural, and Conservation to preserve, protect and encourage development and preservation of lands for those uses to which they are best suited in the interest of public health and welfare of the people. A brief description of each land use is provided in the following list:

- Urban District - areas with "city-like" concentrations of people, structures and services and vacant areas for future development. Jurisdiction lies with the respective county through ordinances and rules.
- Rural District – primarily small farms intermixed with low density residential lots of ½ acre or more. Jurisdiction of these areas lies with the Land Use Commission and respective counties and permitted uses generally include those relating to agricultural use and low-density residential lots; however, variances may be obtained.
- Agricultural District – includes lands for cultivation of crops, aquaculture, raising livestock, wind energy facility, timber cultivation, agriculture support activities and land with significant potential for agriculture uses. Uses permitted within the district are based on the Land Study Bureau's productivity categories. Lands in the highest productivity categories (A or B) are governed by statute and uses in the lower categories (C, D, E or U) are established by the commission stated in HRS 205-4.5.
- Conservation District – lands comprised of existing forest and water reserve zones and area necessary to protect watersheds and water resources, scenic and historic areas, parks, wilderness, open space, recreational areas, habitats of endemic plants, fish and wildlife, and all submerged lands seaward of the shoreline. These areas are governed by the State DLNR.

The project area extends over portions of land within three of the four land use districts, with a majority of the project area within urban and agricultural districts. A portion of the storage alternative may be located within or adjacent to land within a conservation district near the Waipahu WWPS (see **Figure 8-1**). Permissible Uses within each district are defined in HAR Title 15, Chapter 15-24. Conservation districts, governed by the DLNR, are further divided into subzones. A portion of the GST alternative would be located within a 'protective' subzone. If necessary, a temporary variance may be requested for the proposed work.

8.2 CITY AND COUNTY OF HONOLULU

The CITY DPP manages anticipated future population and land use growth through policies, planning principles, guidelines and regulations set forth in the Oahu General Plan, Development and Sustainable Community Plans, and implementing ordinances and regulations. The DPP maintains and updates the Oahu General Plan, regional Development/Sustainable Community Plans, Development Plan Land Use Annual Reports, and Special Area and Neighborhood Master Plans to guide the policy, investment and decision making process. The DEIS will be prepared in conformance with the guidelines set forth in these documents for analysis on the advantages and disadvantages of the proposed project and its alternatives for the City and County of Honolulu.

8.2.1 General Plan

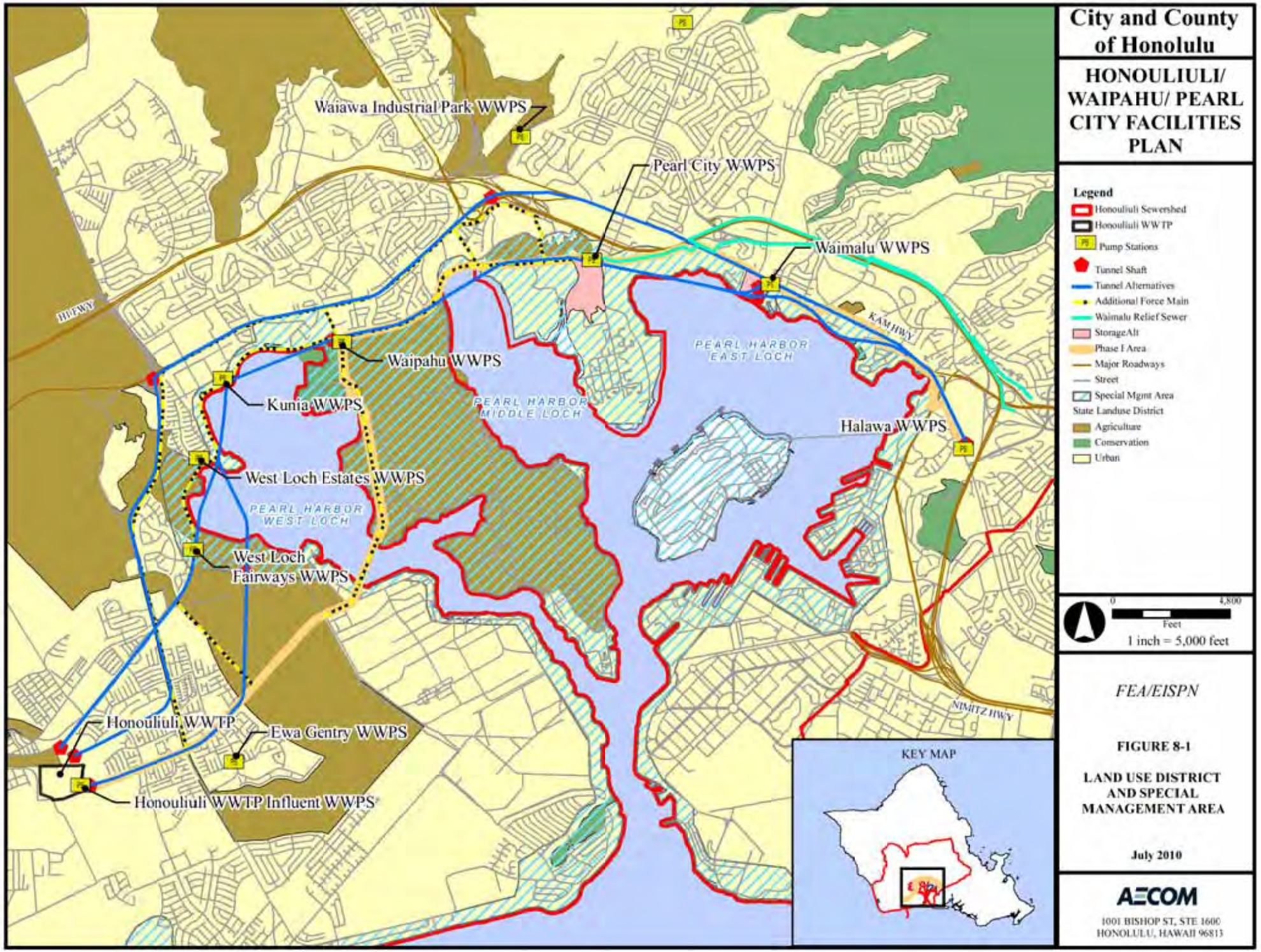
The General Plan was adopted in 1977 with subsequent amendments leading to the revised 1992 edition. The work associated with updating the Wastewater Facilities Plan is consistent with the objectives within the General Plan. These objectives include planning for anticipated future population growth and the increased demands for future sewerage, and solid waste disposal services. Policies contained in the General Plan are implemented by the CITY government through ordinances and resolutions as well as rules and regulations. Development Plans for each community provide for the land use and public facilities planning and the sequence in which the development would occur in accordance with the objectives and policies outlined in the General Plan.

8.2.2 Community Plan

Development plans required by CITY Charter are prepared to guide population and land use growth over a 20+ year time span. The future growth and plans for the areas of Ewa, Central Oahu, and the Primary Urban Center are a vital element in determining the appropriate alternative for the upgrade and expansion of the Honouliuli wastewater system. A major revision to these plans was completed in 2004, and the revised plans are reviewed every 5 years to revalidate the overall goals and make appropriate adjustments. As of October 2009, the Ewa Development Draft Revised Plan was distributed to the public for review, the Central Oahu Public Review Draft Revised Plan is being prepared for distribution, and the Review of the Primary Urban Plan had been postponed.

The development plans for Ewa and the Primary Urban Center are directed toward considerable growth and significant progress to provide a Secondary Urban Center for Oahu, centered in the Kapolei area, and to guide development decisions and actions needed to support the growth. The Central Oahu plan is a 'Sustainable Community Plan' with goals directed toward public actions to support the existing population.

Future projects described in these community plans include but are not limited to the Transit Oriented Development Program to expand the transit system in the Aiea-Pearl City, East Kapolei and Waipahu Neighborhoods, pedestrian ways and bike paths, and community centers.


Waiawa Industrial Park WWPS
Pearl City WWPS
Waimalu WWPS
Waipahu WWPS
Kunia WWPS
West Loch Estates WWPS
West Loch Fairways WWPS
Halawa WWPS
Honouliuli WWTP
Ewa Gentry WWPS
Honouliuli WWTP Influent WWPS
PEARL HARBOR EAST LOCH
PEARL HARBOR MIDDLE LOCH
PEARL HARBOR WEST LOCH
H1FWY
KAM HWY
NIMITZ HWY
KEY MAP
City and County of Honolulu
HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN
Legend
Honouliuli Sewershed
Honouliuli WWTP
Pump Stations
Tunnel Shaft
Tunnel Alternatives
Additional Force Main
Waimalu Relief Sewer
StorageAlt
Phase I Area
Major Roadways
Street
Special Mgmt Area
State Landuse District
Agriculture
Conservation
Urban
0
4,800
Feet
1 inch = 5,000 feet
FEA/EISPN
FIGURE 8-1
LAND USE DISTRICT AND SPECIAL MANAGEMENT AREA
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The DEIS will evaluate the system upgrades and expansion in conjunction with the Revised Community Plans and projects.

Construction impacts may occur with residential, urban and open space areas; however the operational impacts could assist in implementing the future development goals by helping guide and/or accommodate development as described in the Community Plans.

8.2.3 Zoning

The Land Use Ordinance (LUO), Chapter 21, also referred to as the Zoning Ordinance, regulates land to encourage orderly development in accordance with policies including the Oahu General Plan and development plans. **Figure 8-2** shows zoning in the project area. The DEIS will evaluate the proposed alternatives for any potential conflicts with zoning within the 11 different designated zone types throughout the project area (**Table 8-1**). The zones include districts associated with apartment, agricultural, business, preservation or residential uses.

Table 8-1. Zoning District Classifications and Map Designations (LUO Sec. 21-3.10)

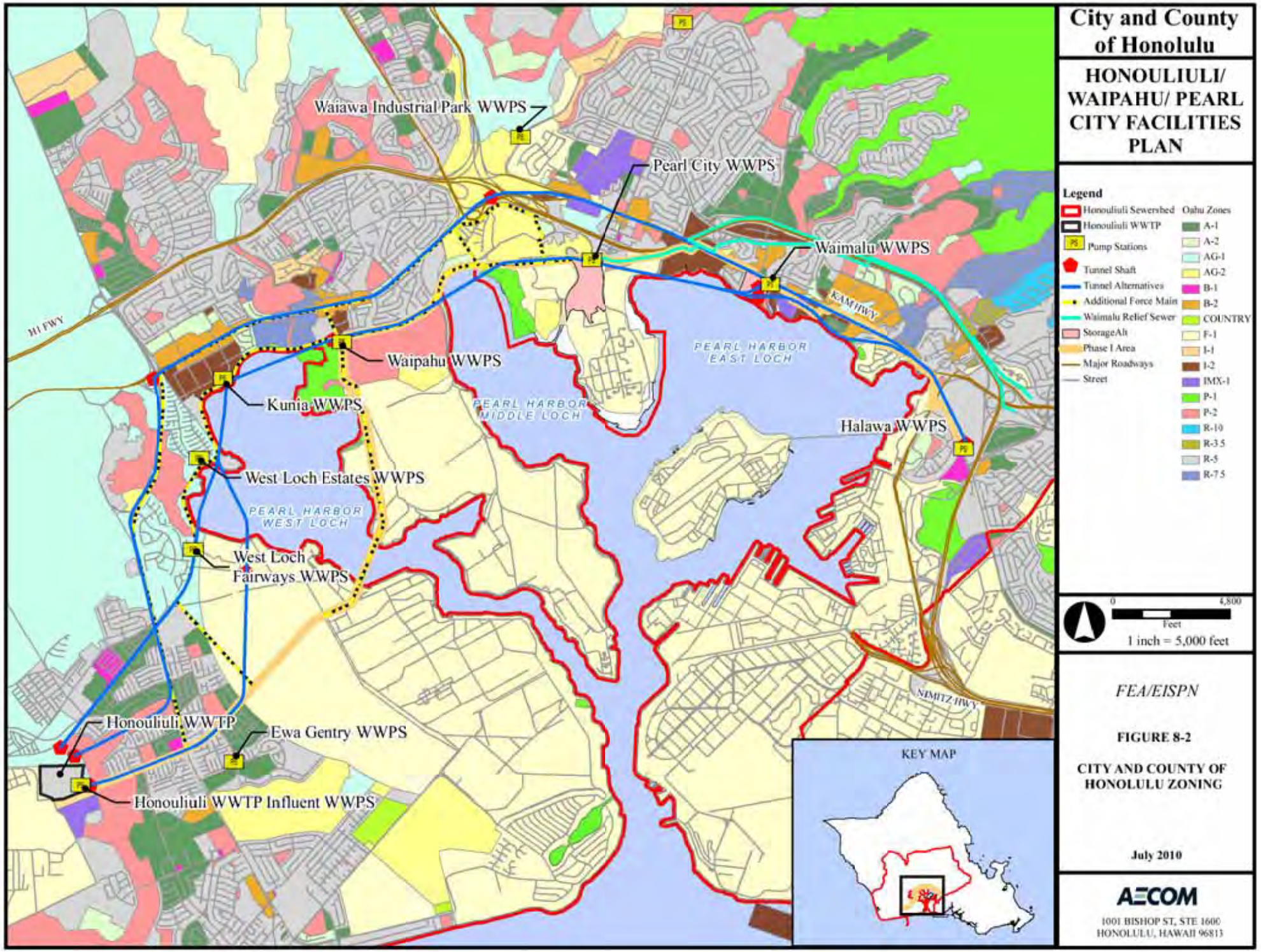
Map Designation	Description
A-1	Low-density Apartment District
A-2	Medium-density Apartment District
AG-1	Restricted Agriculture District
AG-2	General Agriculture District
B-2	Community Business District
F-1	Federal and Military Preservation District
I-2	Intensive Industrial District
P-1	Restricted Preservation District
P-2	General Preservation District
R-5	Residential District
R-7.5	Residential District

Source: City and County of Honolulu, Department of Planning and Permitting

The analysis will identify zoning amendments that may be necessary to allow implementation of the proposed alternatives.

8.2.4 Special Management Area

Portions of the project area lie within the Special Management Area (SMA) pursuant to HRS Chapter 205A (see **Figure 8-1**). Regulations and procedures within the SMA are further defined in Chapter 25 of the revised Ordinances of Honolulu to preserve and protect the natural resources of the coastal zone of Hawaii. No development shall be allowed in any county within the special management area without obtaining a permit in accordance with HRS 205A-28; therefore, a SMA Major Use permit would be obtained prior to construction, as needed.


Waiawa Industrial Park WWPS
Pearl City WWPS
Waimalu WWPS
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West Loch Estates WWPS
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Halawa WWPS
Honouliuli WWTP
Ewa Gentry WWPS
Honouliuli WWTP Influent WWPS
H1 FWY
KAM HWY
NIMITZ HWY
PEARL HARBOR EAST LOCH
PEARL HARBOR MIDDLE LOCH
PEARL HARBOR WEST LOCH
KEY MAP
City and County of Honolulu
HONOULIULI/ WAIPAHU/ PEARL CITY FACILITIES PLAN
Legend
Honouliuli Sewershed
Honouliuli WWTP
Pump Stations
Tunnel Shaft
Tunnel Alternatives
Additional Force Main
Waimalu Relief Sewer
StorageAlt
Phase I Area
Major Roadways
Street
Oahu Zones
A-1
A-2
AG-1
AG-2
B-1
B-2
COUNTRY
F-1
I-1
I-2
IMX-1
P-1
P-2
R-10
R-3.5
R-5
R-7.5
0
4,800
Feet
1 inch = 5,000 feet
FEA/EISPN
FIGURE 8-2
CITY AND COUNTY OF HONOLULU ZONING
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8.2.5 Shoreline Setback

Portions of the project area lie within the shoreline setback pursuant to HRS Chapter 205A. Regulations and procedures within the shoreline setback are further defined in Chapter 23 of the Revised Ordinances of Honolulu to protect and preserve the natural shoreline and to reduce hazards to property from coastal floods. No development shall be allowed in any county within the shoreline setback without obtaining a shoreline setback variance; therefore, a shoreline setback variance may need to be obtained prior to construction.

9.0 PERMITS AND APPROVALS

The following is a list of the permits and approvals that may be required for the project prior to construction of the proposed improvements. The permits that would be required would be identified during the development of the DEIS and EIS.

9.1 FEDERAL

U.S. Army Corps of Engineers
- Department of the Army Permit (CWA Section 404; Rivers and Harbors Act Section 10)

U.S. Coast Guard
- USCG Section 9 Permit Applicability Guidance

U.S. Environmental Protection Agency
- NPDES Form 2A – Discharge of Municipal Wastewater from New and Existing Publicly Owned Treatment Works)

U.S. Fish and Wildlife Service
- Section 7 Review

9.2 STATE OF HAWAII

Department of Business, Economic Development and Tourism, Office of Planning
- Coastal Zone Management Consistency Determination

Department of Health (DOH)
- Air Pollution Control Permits (Covered Source Permit and/or Noncovered Source Permit)
- Construction Plan Review and Approval
- Noise Variance Permit
- NPDES NOI Form C – Storm Water Discharges Associated with Construction Activities
- NPDES NOI Form F – Discharges Associated with Hydrotesting Waters
- NPDES NOI Form G – Discharges Associated with Construction Activity Dewatering
- Section 401 Water Quality Certificate

Department of Land and Natural Resources Historic Preservation Division
- Chapter 6E, HRS Historic Preservation Review

Department of Transportation (DOT)
- Highways – Permit to Perform Work Within State Highways
- Harbors – Work within the Energy Corridor

9.3 CITY AND COUNTY OF HONOLULU

Board of Water Supply (BWS)
- Water and Water System Requirements
- Construction Plan Review and Approval

Department of Environmental Services
- EIS Approval

Department of Planning and Permitting (DPP)

Building Permit
Construction Plan Review and Approval
Development Plan Public Facilities Map Amendment
Dewatering Permit
Electrical Permit
Grading and Erosion Control Plan Review
Grading, Grubbing, and Stockpiling Permit
Plumbing Permit
Shoreline Setback Variance
Sidewalk/Driveway Work Permit
Special Management Area Use Permit (Major)
Street Usage Permit

9.4 OTHERS

Utility Companies
Utility Service Requirements
Permit Regarding Work on Utility Lines

10.0 SIGNIFICANCE CRITERIA

The DEIS will evaluate the environmental impacts of the project based on criteria established in the HAR, Chapter 200 (Environmental Impact Statement Rules). The following is a summary of the potential impacts of the proposed project:

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

   The proposed project is not expected to involve the loss or destruction of any natural or cultural resources. The facilities are located in previously developed areas and natural and cultural resources would be avoided where possible. As additional information for the project is developed, flora, fauna, archaeological and cultural surveys will be completed and used in the evaluations in the DEIS.

   Should any archaeologically significant artifacts, bones or other cultural or archaeological resources be discovered during construction, excavation or grading, work in the area would cease immediately and the SHPD would be notified immediately. Appropriate action and mitigation would be under SHPD advisement.

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

   The proposed project is intended to increase the reliability and capacity of the existing Honouliuli wastewater system, thus reducing the potential of wet weather SSOs in the sewershed.

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

   The proposed project is consistent with the state's long-term environmental policies, goals and guidelines as defined in Chapter 344, HRS. This project is aiming to reduce pollution caused by wet weather SSOs.

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

   The proposed project would be beneficial to economic welfare and social welfare and should not affect cultural practices in the project area. This project would increase the capacity of the wastewater system, thus allowing for the future development in the sewershed as described in the Primary Urban Center and Ewa Development Plan. Issues related to increased need for public services due to indirect growth will be addressed in the DEIS.

5. **Substantially affects public health.**

   The proposed project is beneficial to public health. It would increase capacity at the existing facilities and, therefore, reduce the likelihood of wet weather SSOs in the sewershed. It may also eliminate some WWPSs; thus reducing mechanical and operational issues associated with these facilities.

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

   The proposed project may result in secondary impacts to the sewershed. As approved by the Primary Urban Center and Ewa Development Plans, this project would allow for further development and thus may increase in population in the sewershed by increasing the capacity of the existing wastewater infrastructure. As a result, additional utility infrastructure may be required in the sewershed. Additional information will be evaluated in the DEIS to allow determination of the potential significance.

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

   The proposed project is not expected to cause substantial degradation of environmental quality. Construction impacts would be short-term and would utilize BMPs to reduce potential of substantial degradation of environmental quality. The DEIS will identify long-term environmental impacts and mitigation measures in the project area.

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

   The proposed project is anticipated to have a cumulative impact on the environment when taking into account other past, present and reasonably foreseeable actions. The DEIS will discuss the cumulative impacts of this project as additional information for the project is developed and becomes available.

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

   The proposed project is not expected to affect rare, threatened, or endangered species, or habitats in the sewershed. There are known rare, threatened, or endangered species or its habitats that are in the undeveloped portions of the project area. The water bird critical habitat, fishponds, wildlife reserves and wetlands in the project area would be avoided where possible. Flora and fauna surveys will be conducted prior to submittal of the DEIS and information from the surveys will be used in the evaluations conducted in the DEIS.

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

    The proposed project is expected to have short-term construction impacts on air and water quality and ambient noise levels in the sewershed. Construction activities would increase particulate matter (dust) and vehicular emissions in the air. The dust may end up in the nearby waters, including Pearl Harbor since the project area is located near Pearl Harbor. Ambient noise levels are expected to increase from construction equipment and vehicles during construction.

    Long-term operational impacts to air quality include providing additional treatment processes with associated emissions at the Honouliuli WWTP and potentially eliminating several WWPSs, thereby improving air quality in the project area. The Honouliuli WWTP will be expanded to handle more flow; thus, greater process facilities will be needed. These facilities will generate higher air emissions. However, one alternative calls for elimination of several existing pump stations; thus there may be an overall decrease in

emissions in the project area. The overall impact of the proposed project on air quality will be evaluated in further detail in the DEIS when additional information is available. Honouliuli WWTPHonouliuli WWTP

Long-term operational impacts to water quality are anticipated to be in compliance with Clean Water Act Section 301 (h) due to upgrading the treatment at the WWTP from primary to secondary and discharging secondary effluent instead of primary effluent. The overall impact of the proposed project on water quality will be evaluated in further detail in the DEIS when additional information is available.

Long-term operational impacts to noise would be beneficial for one of the alternatives being evaluated for implementation (the GST alternative). Noise may increase in localized areas for alternatives that call for the continued operation of the pump stations. The overall impact of the proposed project on noise will be evaluated in further detail in the DEIS when additional information is available.

Overall, the impacts to air and water quality and ambient noise levels are not expected to be significant. Mitigative measures to minimize the effects of the project on air, water and noise include BMPs to control dust and SSOs and properly locating equipment on site. The DEIS will further discuss the impacts of the project on air and water quality and noise in the project area.

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

Portions of the project area are in the flood plain, tsunami zone, Special Management Area and coastal waters. The existing Pearl City WWPS is currently located in a flood prone area; one alternative proposes to relocate the WWPS outside of the flood plain. A portion of the existing force main and proposed additional force main and proposed tunnel alignment would be under Pearl Harbor. The effects or likelihood of damage from a natural disaster is not able to be predicted; however, all facilities would be designed to Federal, State and CITY standards and regulations.

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

The proposed project is not expected to substantially affect scenic vistas and viewplanes in the project area. Most of the improvements would be underground and would not affect the scenic vistas and viewplanes except for improvements to Honouliuli WWTP and the new storage facilities. Improvements to the existing WWTP would be onsite and would look similar to the existing facilities. The new facilities would be located near the existing facilities and would also look similar to the existing facilities. The elimination of several WWPSs would have a positive impact on visual aesthetics in the project area.

Overall, no significant impact to scenic vistas and viewplanes in the project area is anticipated. The upcoming DEIS will discuss the effects of the project to scenic vistas and viewplanes in the project area.

13. Requires substantial energy consumption.

The proposed project involves an increase in energy consumption at the existing Honouliuli WWTP and WWPSs for storage and additional force main and decrease in energy consumption at the WWPSs if the tunnel eliminates the WWPSs. The increase in energy usage to upgrade the WWTP from primary treatment to secondary treatment and additional solid treatment could be substantial in the WWTP's overall energy consumption. Secondary treatment under aerobic conditions is typically done at the expense of increasing energy consumption while also increasing the solids from microbial synthesis that adds to disposal burden. An increase in energy consumption is also expected for the storage facilities as pumping may be required to and/or from the storage facilities. With the tunnel alternative, there is a possibility of eliminating up to eight WWPSs (Halawa, Waimalu, Pearl City, Waipahu, Kunia, West Loch Estates, West Loch Fairways and Ewa Gentry), thus eliminating existing energy consumption at these WWPSs. Instead of having to pump the wastewater from one WWPS to the next, the wastewater at these WWPS would be rerouted to gravity into the tunnel system.

There is a potential for energy recovery from digester gas or by utilizing new emerging technology for gasification of sewage sludge. However, at this time, it is not known if the net energy consumption could be feasibly reduced to favorable levels through the implementation of new technologies that are emerging on the market. The DEIS will identify the energy consumption for the recommended facilities.

11.0 DETERMINATION

The proposing agency, ENV, has determined, based on the requirements of Chapter 343, HRS, the significance criteria (from HAR, Chapter 200) in the previous section and the *West Mamala Bay Facilities Plan*, that the proposed project may result in significant effects on the environment; therefore, an EIS will be prepared. The DEIS will examine the existing environmental conditions and evaluate the potential impacts of the proposed project on these conditions and describe mitigation measures.

12.0 CONSULTATION

12.1 AGENCIES AND PERSONS CONSULTED IN PREPARING THE EISPN

Various agencies, organizations and people have been consulted through pre-assessment letters and meetings. The pre-assessment letters were sent on December 1, 2009 to notify the public of the project and request for comments, concerns or impacts the project may have on the environmental resources in the project area. The pre-assessment letter and attachments, comments, AECOM's responses to the comments and a matrix summarizing the comments and responses are available in **Appendix A**. In addition to pre-assessment letters (Ltr), informational meetings (Mtg) were held to notify the public of the proposed project. Minutes from these informational meetings are in **Appendix B.**

12.1.1 Federal

Federal agencies consulted during the FEA/EISPN process include:

- U.S. Congress
  - Daniel Akaka (Ltr and Mtg with his representative)
  - Daniel Inouye (Ltr and Mtg with his representative)
  - Mazie Hirono (Ltr and Mtg with her representative)
  - Neil Abercrombie (Ltr and Mtg with his representative)
- NAVFAC Hawaii (2 Ltrs and Mtg)
- U.S. Army Corp of Engineers (Ltr)
- U.S. Coast Guard, 14th C.G. District (Ltr)
- U.S. Congress
- U.S. Environmental Protection Agency (to be consulted during the DEIS)U.S. Fish and Wildlife Service, Pacific Division (Ltr and Mtg))
- U.S. National Marine Fisheries Service (Ltr)
- U.S. Natural Resources Conservation Services (Ltr)
- U.S. Naval Station, Pearl Harbor (Ltr)

12.1.2 State of Hawaii

State agencies consulted during the FEA/EISPN process include:

- Department of Agriculture (Ltr)
- Department of Accounting and General Services (Ltr and Mtg)
- Department of Accounting and General Services – Stadium Authority (Ltr and Mtg)
- Department of Business, Economic Development and Tourism (Ltr)
- Department of Business, Economic Development and Tourism – Energy Division (Ltr)
- Department of Business, Economic Development and Tourism – Hawaii Housing Finance and Development Corporation (Ltr)
- Department of Business, Economic Development and Tourism – Office of Planning (Ltr)
- Department of Defense (Ltr)
- Department of Education (Ltr)
- Department of Hawaiian Home Land (Ltr)
- Department of Health (Ltr)
- Department of Health – Clean Water Branch (Ltr and Mtg)
- Department of Health – Environmental Management Div (Ltr)
- Department of Health – Office of Environmental Quality Control (Ltr)

- Department of Health – Wastewater Branch (Ltr and Mtg)
- Department of Human Services (Ltr)
- Department of Labor and Industrial Relations (Ltr)
- Department of Land and Natural Resources (Ltr and Mtg)
- Department of Land and Natural Resources – Division of Aquatic Resources (Ltr)
- Department of Land and Natural Resources – Division of Forestry and Wildlife (Ltr)
- Department of Land and Natural Resources – Division of Historic Preservation (Ltr and Mtg)
- Department of Land and Natural Resources – Division of Land Management (Ltr)
- Department of Land and Natural Resources – Land Division (Mtg)
- Department of Land and Natural Resources – Office of Conservation and Coastal Lands (Mtg)
- Department of Land and Natural Resources – Parks Division (Ltr)
- Department of Transportation (Ltr and Mtg)
- Department of Transportation – Highways Division (Ltr)
- Department of Land and Natural Resources - Commission on Water Resource Management (Ltr)
- House of Representatives
- District 31 – Glenn Wakai (Ltr and Mtg)
- District 32 – Lynn Finnegan (Ltr and Mtg)
- District 33 – Blake Oshiro (Ltr and Mtg)
- District 34 – Mark Takai (Ltr and Mtg)
- District 35 – Henry Aquino (Ltr and Mtg)
- District 36 – Roy Takumi (Ltr and Mtg)
- District 37 – Ryan Yamane (Ltr and Mtg)
- District 38 – Marilyn Lee (Ltr and Mtg)
- District 39 – Marcus Oshiro (Ltr and Mtg)
- District 40 – Sharon Harrison (Ltr and Mtg)
- District 42 – Rida Cabanilla (Ltr and Mtg)
- District 43 – Kymberly Pine (Ltr and Mtg)
- District 44 – Karen Awana (Ltr and Mtg)
- District 48 – Jon Karamatsu (Ltr and Mtg)
- Office of Hawaiian Affairs (Ltr)
- Senate
- District 14 – Donna Mercado Kim (Ltr and Mtg)
- District 15 – Norman Sakamoto (Ltr and Mtg)
- District 16 – David Ige (Ltr and Mtg)
- District 17 – Michelle Kidani (Ltr and Mtg)
- District 18 – Clarence Nishihara (Ltr and Mtg)
- District 19 – Mike Gabbard (Ltr and Mtg)
- District 20 – Would Espero (Ltr and Mtg)
- District 22 – Robert Bunda (Ltr and Mtg)

12.1.3 City and County of Honolulu

City and County of Honolulu agencies to be consulted during the FEA/EISPN process include:

- Board of Water Supply (Ltr and Mtg)
- Council Members

  - City Council, District 1 – Todd Apo (Ltr and Mtg)
  - City Council, District 2 – Donovan Dela Cruz (Ltr and Mtg)
  - City Council, District 5 – Ann Kobayashi (Ltr and Mtg)
  - City Council, District 7 – Romy Cachola (Ltr and Mtg)
  - City Council, District 8 – Gary Okino (Ltr and Mtg)
  - City Council, District 9 – Nestor Garcia (Ltr and Mtg)
- Department of Design and Construction (Ltr and Mtg)
- Department of Facility Maintenance (Ltr and Mtg)
- Department of Parks and Recreation (Ltr)
- Department of Planning and Permitting (Ltr)
- Department of Transportation Services (Ltr and Mtg)
- Fire Department (Ltr)
- Police Department (Ltr)
- Emergency Services Department (Ltr)
- Office of Mayor Mufi Hannemann (Ltr)
- Mayor's Office (Ltr)

12.1.4 Other Organizations

- Ahahui Siwila Hawaii O Kapolei Hawaiian Civic Club (Ltr)
- Coral Creek Golf Course (Mtg)
- Ewa Beach Boys & Girls Club (Ltr)
- Ewa Beach Community Association (Ltr)
- Ewa by Gentry Community Association (Ltr)
- Ewa Task Force (Ltr)
- Hawaii Audubon Society (Ltr)
- Hawaii Farm Bureau Federation (Ltr and Mtg)
- Hawaii Natural Heritage Program (Ltr)
- Hawaii Rail Society (Ltr)
- Hawaiian Telecom Company (Ltr)
- Hawaii's Thousand Friends (Ltr)
- Honokai Hale/Nanakai Gardens Community Assn (Ltr)
- Ewa Beach Lions Club (Ltr)
- Kapolei Rotary Club (Ltr)
- Kapolei Chamber of Commerce (Ltr)
- Makakilo Community Association (Ltr)
- Neighborhood Commission Office (Ltr and Mtg)
- Oceanic Cable (Ltr)
- Outdoor Circle (Ltr)
- Palelehua Community Association (Ltr)
- Rotary Club of Kapolei (Ltr)
- UH Environmental Center (Ltr)
- Villages of Kapolei Association (Ltr)
- Waipahu Community Association (Ltr)
- West Loch Estates Homeowner Association (Ltr)
- West Oahu Economic Development Association (Ltr)
- Neighborhood Board
- Aiea Neighborhood Board #20 (Ltr)
- Aliamanu/Salt Lake/Foster Village Neighborhood Board #18 (Ltr)

- Ewa Neighborhood Board #23 (Ltr)
- Makakilo/Kapolei/Honokai Hale Neighborhood Board #34 (Ltr)
- Mililani Mauka/Launani Valley Neighborhood Board #35 (Ltr)
- Mililani/Waipio/Melemanu Neighborhood Board #25 (Ltr)
- Pearl City Neighborhood Board #21 (Ltr)
- Waipahu Neighborhood Board #22 (Ltr)
- Utilities
- Hawaii Electric Company (HECO) (3 Ltrs and Mtg)
- The GAS Company (Ltr)

12.2 AGENCIES AND PERSONS TO BE CONSULTED IN PREPARING THE DRAFT EIS

The agencies and persons consulted during the FEA/EISPN process would be notified of the publication of the FEA/EISPN and the comment period. The comments received during the comment period would be incorporated into the DEIS. In addition if it is determined that other agencies and persons would be affected by the project, they would be notified and consulted.

13.0 REFERENCES

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City and County of Honolulu Department of Public Works, *Design Standards of the Division of Wastewater Management, Volume 2*. July 1984.

City and County of Honolulu Department of Wastewater Management, *Design Standards of the Department of Wastewater Management, Volume 1*. July 1993.

Fukunaga and Associates, Inc. for the City and County of Honolulu, *Final Sewer I/I Plan*, December 1999.

Fukunaga and Associates, Inc. for the City and County of Honolulu, *Force Majeure Report*, May 1997.

Fukunaga and Associates, Inc. for the City and County of Honolulu, Sewer Rehabilitation and Infiltration & Inflow Minimization Study Volume 1 0f 9 – Honouliuli I/I Engineering Report, December 1999.

Fukunaga and Associates, Inc. for the City and County of Honolulu, Sewer Rehabilitation and Infiltration & Inflow Minimization Study Volume 9 0f 9 – Methodology Technical Memorandums, December 1999.

Park Engineering, Ewa By Gentry - East Wastewater Pump Station Inspector Copy Plans, December 1996.

Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, *Recommended Standards for Wastewater Facilities* (*Ten States Standards*), 2004 Edition.

Metcalf and Eddie, *Wastewater Engineering: Treatment & Reuse*, 4th Edition, McGraw-Hill, 2003.

State of Hawaii Department of Health, *State of Hawaii Annual Summary 2008 Air Quality Data*, August 2009.

United States Department of Agriculture Soil Conservation Services and University of Hawaii Agricultural Experiment Station, *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, August 1972.

University of Hawaii at Hilo Department of Geography, *Atlas of Hawaii Third Edition*, University of Hawaii Press: Honolulu, 1998.

Wilson Okamoto & Associates, Inc. and Brown and Caldwell Consultants for the City and County of Honolulu Department of Design and Construction, *Environmental Impact Statement Preparation Notice - West Mamala Bay Facilities Plan*, May 2000.

Wilson Okamoto & Associates, Inc. and Brown and Caldwell Consultants for the City and County of Honolulu Department of Design and Construction, *Final Environmental Impact Statement - West Mamala Bay Facilities Plan*, March 2001.

Wilson Okamoto & Associates, Inc. and Brown and Caldwell Consultants for the City and County of Honolulu Department of Design and Construction, *West Mamala Bay Facilities Plan*, December 2001.

Wastewater Engineering: Treatment & Reuse (Metcalf & Eddy/AECOM, 4th Edition), and typical standards of practice were used.

APPENDICES

Appendix A – Pre-Assessment Letters and Responses

Pre-Assessment Distribution List

Title	First Name	Last Name	Company Name	Date Comments Received	Comments
Pelekikena (President)	Lance	Holden	Ahahui Siwila Hawaii O Kapolei Hawaiian Civic Club		
Chair	William	Clark	Aiea Neighborhood Board #20		
Chair	Maurice	Morita	Aliamanu/Salt Lake/Foster Village Neighborhood Board #18		
Council Chair	Todd	Apo	C&C Honolulu, City Council, District 1		
Councilmember	Donovan	Dela Cruz	C&C Honolulu, City Council, District 2		
Councilmember	Ann	Kobayashi	C&C Honolulu, City Council, District 5		
President	Dan	Fullenwider	Rotary Club of Kapolei		
Councilmember	Romy	Cachola	C&C Honolulu, City Council, District 7		
Councilmember	Gary	Okino	C&C Honolulu, City Council, District 8		
Councilmember	Nestor	Garcia	C&C Honolulu, City Council, District 9		
Director	Craig	Nishimura, P.E.	C&C Honolulu, Dept of Design and Construction		
Director	Jeoffrey	Cudiamat	C&C Honolulu, Dept of Facility Maintenance	12/28/2009	We have no comments to offer regarding proposed improvements located entirely within wastewater treatment plant and pump station sites. These improvements will have negligible impact on our facilities and operations. However, during the Environmental Assessment, design and construction phases for the various projects comprising the wastewater facilities plan we request that open trench construction and buried temporary bypass sewer lines within City roadways be kept to a minimum and utilized only where less destructive methods may not be feasible. A problem inherent with open trench construction is adequate compaction of the backfill. Therefore, we also request that flowable fill or Controlled Low Strength Material (CLSM) be evaluated and/or considered for use as backfill material.
Director	Lester	Chang	C&C Honolulu, Dept of Parks and Recreation		
Director	David	Tanoue	C&C Honolulu, Dept of Planning and Permitting	12/28/2009	Any of the proposed work which is in the shoreline setback area and/or special management area may be subject to the requirements of the Revised Ordinances of Honolulu Chapter 23 and/or 25, as appropriate
Director	Wayne	Yoshioka	C&C Honolulu, Dept of Transportation Services	1/14/2010	DETS' review process for ownership of streets and impact of the project and construction on area streets. Work on City streets Monday through Friday, 8:30 am to 3:30 pm, unless otherwise permitted. Honolulu High-Capacity Transit Corridor Project (HHCTCP) construction anticipated to begin in 2010. Concerned with conflicts between HHCTCP and sewer projects especially by the guideway columns along Kamehameha Highway in the vicinity of the Waimalu WWPS and potential Waimalu storage facility. DEIS should include a description and impact of project on public transit. All construction should include the transit note: "This project will affect bus routes, bus stops, and para-transit operations, therefore, 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."
Director	Elizabeth	Char, M.D	C&C Honolulu, Emergency Services Department		
Executive Asst.	Chrysin	Eads	C&C Honolulu, Office of Mayor Mufi Hannemann		
Commander	R.W.	Kitchens	Department of the Navy	2/9/2010	Comments: Natural Resources- The alternate conveyance, alternate storage and alternate hybrid lines would pass across wetland areas, see enclosure 1. Digging across wetland areas would require permitting from U.S. Army Corps of Engineers under the Clean Water Act. This usually requires due diligence that alternatives were duly considered, and if no alternatives are feasible, that effects on wetlands are minimized and mitigated. Also, the alternate storage lines appear to intersect (or come close) to the Honouliuli and Waiawa Refuge units of the Pearl Harbor National Wildlife Refuge Complex. Therefore, the US Fish and Wildlife Service refuge office should be consulted as well during the EIS process. Lastly, there is a site for potential Pearl City Storage at Pearl City Peninsula. THis site is on or adjacent to wetlands. It is recommended that this site be consolidated as much as possible with existing facilities and developed land-used characteristics. Our Integrated Natural Resources Management Plan guides us that facilities should be developed on previously developed land where possible. Cultural Resources-No potential storage or conveyances will affect known high-probability areas of archaeological concern. The attached archaeological resource map (Hawaiian burials or artifact sites) shows the high-probability areas of concern Additional study will be required before Navy can concur with any alternative involving Navy property, however, we are pleased to assist AECOM and wish you a
Clubhouse Director	Frances	Rivero	Ewa Beach Boys & Girls Club		
President	Charles	Beamer	Ewa Beach Community Association		
President	Susan	York	Ewa by Gentry Community Association		
Chair	Kurt	Fevella	Ewa Neighborhood Board #23		
	Rodolfo	Ramos	Ewa Task Force		
President	John	Harrison	Hawaii Audubon Society		
Executive Director	Ann	Yamamoto	Hawaii Farm Bureau Federation		
Database Manager	Roy	Kam	Hawaii Natural Heritage Program	Returned undelivered	
			Hawaiian Electric Company, Inc.		
President	Robert	Yatchemenoff	Hawaiian Railway Society	12/22/2009	We have the following concerns: 1. Project HN-CS-4 Renton Road, sewer and manhole rehabilitation. As Renton road fronts our property and the sewer may cross under the Oahu Railway & Land Company's tracks, will there be any impact? This remaining stretch of track is on the National Register of Historic Places and Sites and is maintained and used by the H.R.S. 2. Is there any planned work on the Makakilo and Kapolei Interceptor sewer lines which run side by side, via easement rights, thru our property? 3. Is there any planned work on the East Kapolei off-site sewer which connects with the Kapolei Interceptor line at the western end of our property and proceeds north under the OR&L's tracks, also via easement rights favorable to the City and County? We would appreciate any feedback from you regarding these concerns
President and CEO	Eric	Yeaman	Hawaiian Telecom Company		
President	Chuck	Prentiss	Hawaii's Thousand Friends		
Principal Engineer, Structural Di	Roy	Noda	HECO		
Engineer II	Noreen	Takeshita	HECO		
			Honokai Hale/Nanakai Gardens Community Assn	Returned undelivered	

Pre-Assessment Distribution List

Title	First Name	Last Name	Company Name	Date Comments Received	Comments
Manager	Wayne	Hashiro, P.E.	Board of Water Supply	1/15/2010	We have the following comments: 1. Water system improvements in the vicinity of the Honouliuli Wastewater Treatment Plant (WWTP) may be required to improve the reliability of the existing potable water system and for the potential expansion of the Honouliuli WWTP. 2. Please submit any requests for additional potable water or recycled water for Board of Water Supply (BWS) review. 3. Construction drawings should be submitted for BWS review as part of the building permit application process. 4. The availability of water will be confirmed when the building permit application is submitted for review and approval. 5. We recommend the use of drought tolerant/low water use plants and xeriscaping principles for all landscaping. We also recommend the installation of an efficient irrigation system, such as drip irrigation, incorporating moisture sensors to avoid the operation of the system in the rain and if the ground has adequate moisture. 6. We reserve further comments until the Environmental Assessment/Environmental Impact Statement Preparation Notice is submitted for our review.
Chief	Kenneth	Silva	Honolulu Fire Dept	12/30/2009	1. Provide a fire apparatus access road for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45 720 mm) from a fire apparatus access road as measured by an approved route around the exterior of the building or facility. (1997 Uniform Fire Code, Section 902.2.1.) 2. Provide a water supply, approved by the county, capable of supplying the required fire flow for fire protection to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed or moved into or within the county. On-site fire hydrants and mains capable of supplying the required fire flow shall be provided when any portion of the facility or building is in excess of 150 feet (45 920 mm) from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building. (1997 Uniform Fire Code, Section 903.2, as amended.) 3. Submit civil drawings to the HFD for review and approval
Chief	Louis	Kealoha	Honolulu Police Dept	12/8/2009	No comments at this time
Representative	Glenn	Wakai	House of Representatives, District 31		
Representative	Lynn	Finnegan	House of Representatives, District 32		
Representative	Blake	Oshiro	House of Representatives, District 33		
Representative	Mark	Takai	House of Representatives, District 34		
Representative	Henry	Aquino	House of Representatives, District 35		
Representative	Roy	Takumi	House of Representatives, District 36		
President	Kurt	Fevella	Ewa Beach Lions Club		
President	Catherine	Barnes	Kapolei Rotary Club		
Representative	Ryan	Yamane	House of Representatives, District 37		
Representative	Marilyn	Lee	House of Representatives, District 38		
Representative	Marcus	Oshiro	House of Representatives, District 39		
Representative	Sharon	Hartinson	House of Representatives, District 40		
Representative	Rida	Cabanilla	House of Representatives, District 42		
Representative	Kymberly	Pine	House of Representatives, District 43		
Representative	Karen	Awana	House of Representatives, District 44		
Representative	Jon	Karamatsu	House of Representatives, District 48		
Vice President	Theresia	McMurdo	Kapolei Chamber of Commerce		
			Makakilo Community Association	Returned undelivered	
Chair	Maoloa	Timson	Makakilo/Kapolei/Honokai Hale Neighborhood Board #34		
Mayor	Mufi	Hannemann	Mayor's Office		
Chair	Dean	Hazama	Mililani Mauka/Launani Valley Neighborhood Board #35		
Chair	Dirk	Poirier	Mililani/Waipio/Melemanu Neighborhood Board #25		
Facility Engineer	Norm	Glenn	NAVFAC Hawaii		
Wildlife Refuge	Patricia	Coleman	NAVFAC Hawaii	12/23/2009	Requests an extension on the comment period for the EA/EISPN
Executive Secretary	Joan	Manke	Neighborhood Commission Office		
			Oceanic Cable		
Trustee			Office of Hawaiian Affairs		
CEO	Mary	Steiner	Outdoor Circle		
Covenants Manager	Al	Shibuya	Palolehua Community Association	Returned undelivered	
Chair	James "Kimo"	Pickard	Pearl City Neighborhood Board #21		
Senator	Donna	Kim	Senate, District 14		
Senator	Norman	Sakamoto	Senate, District 15		
Senator	David	Ige	Senate, District 16		
Senator	Michelle	Kidani	Senate, District 17		
Senator	Clarence	Nishihara	Senate, District 18		
Senator	Mike	Gabbard	Senate, District 19		
Senator	Will	Espero	Senate, District 20		
Senator	Robert	Bunda	Senate, District 22		
Comptroller	Russ	Saito	SoH Dept of Accounting and General Svc	12/16/2009	Please keep us informed of any changes being planned
Stadium Manager			SoH Dept of Accounting and General Svcs - Stadium Authority		
Chairperson	Sandra	Lee Kunimoto	SoH Dept of Agriculture		
Director	Theodore	Liu	SoH Dept of Bus, Econ Dev and Tourism		
			SoH Dept of Bus, Econ Dev and Tourism - Energy		
			SoH Dept of Bus, Econ Dev and Tourism - Office of Planning		

Pre-Assessment Distribution List

Title	First Name	Last Name	Company Name	Date Comments Received	Comments
Adjutant General	Robert	Lee	SoH Dept of Defense		
Acting Superintendent	Kathryn	Matayoshi	SoH Dept of Education	12/23/2009	Presently has no specific concerns. Would appreciate continued updates as these plans may impact upon existing or planned schools.
Chairman	Kaulana	Park	SoH Dept of Hawaiian Home Lands		
Health Director	Chiyome	Fukino, MD	SoH Dept of Health		
Director	Alec	Wong	SoH Dept of Health - Clean Water Branch	12/22/2009	The DOH-CWB has reviewed the document and offers these comments on your project. Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible For fulfilling additional requirements related to
Deputy Director	Laurence	Lau, Esq.	SoH Dept of Health - Environmental Management Div		
Director			SoH Dept of Health - Office of Environmental Quality Control		
Director	Tomas	See	SoH Dept of Health - Wastewater Branch		
Director	Lillian	Koller	SoH Dept of Human Services		
Director	Darwin	Ching	SoH Dept of Labor and Industrial Relations	12/21/2009	No comments or recommendations
Chairperson	Laura	Thielen	SoH Dept of Land and Natural Resources		
Administrator	Daniel	Quinn	SoH Dept of Land and Natural Resources, Division of State Parks	12/29/2009	We wish to continue to be a consulted party for the EIS
Director	Brennon	Morioka	SoH Dept of Transportation		Salt Lake Boulevard, H-1 Freeway, and Kamehameha Highway) facilities, such as, but not limited to: 1. Short-t-rerin traffic impacts generated by the project during construction, including inconvenience to the motoring public, bicyclists, pedestrians, joggers, residents, business merchants, etc. should be addressed. 2. Please note that a DOT Highways Division permit is required to transport any oversized equipment/overweight loads on State highway facilities and the construction vehicles and types of equipment that will be used at the job site must be identified. 3. The hours that construction activity will be occurring should be noted and included in any impact assessment. 4. The applicant must comply with DOT's "Pipeline Removal Policy." For example, if the applicant encounters any abandoned pipes/conduits within the State highway right-of-way, the pipeline should not be abandoned in place and allowed to cause future problems such as creating "voids" in the ground when the lines eventually rust, deteriorate and break. The applicant must also prepare and submit as-built plans. 5. A permit application and detailed construction plans must be submitted to the DOT Highways Division for review and approval for any work done within the State highway right-of-way. All improvements within the State highway right-of-way must conform to nationally accepted design standards and must be done at no cost to the State. DOT further recommends that the DEIS discuss and evaluate project impacts to the State harbor right-of-way along the energy corridor and other harbor facilities.
Administrator	Glenn	Yasui	SoH Dept of Transportation - Highways Div	12/22/2009	No further formal comments at this time. Please combine multiple Facility Plans meetings when possible. Would also greatly appreciate the preparation and receipt of meeting summaries that document discussions and comments.
Deputy Director	Ken	Kawahara, P.E.	SoH DLNR - Commission on Water Resource Management	12/15/2009	A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the made to the bed and/or banks of a stream channel.
Administrator	Dan	Polhemus, PhD	SoH DLNR - Div of Aquatic Resources		The Division of Aquatic Resources (DAR) notes that wastewater spills have been frequent occurrences over the last several years in Hawaii as our population has grown and our existing wastewater system has aged. Because of the detrimental effects that inadequately treated wastewater can have on fresh and marine waters and the living communities they sustain, the development and maintenance of a reliable and effective wastewater management system is of particular concern to the DAR. The map attached to the pre-assessment consultation document indicates that the system used to transport and treat wastewater through the study area traverses a number of potentially sensitive habitats that encompass a broad spectrum of aquatic environments. For example, the watershed in the study area encompasses a number of small streams that cross through wastewater pipelines. Pipelines also run adjacent to or through Pearl Harbor, which is a large, sheltered nursery area for a number of species of marine fish. The shoreline area in Ewa has long been a popular location to harvest edible limu, and freshwater springs in these areas provide a beneficial balance of nutrients and salinity for this resource. At its end, the outfall pipe passes through and discharges wastewater into the nearshore marine environment where a diverse fish community is found. At any of these locations, a discharge of untreated wastewater can severely impact natural resources through eutrophication or chemical pollution. For these reasons we strongly support efforts to maintain and upgrade the wastewater system in Oahu. Because the quality and flow rate of both surface and subterranean freshwater streams can impact associated aquatic resources, we urge that these features be considered during planning. Compromising these flows though pollution or interruption could impact a number of native freshwater, estuarine, and marine species. Finally, the U.S. Environmental Protection Agency has determined that the current level of treatment is inadequate, still leaves high levels of environmental contaminants in the effluent from the outfall pipe. DAR concurs that further treatment of effluent prior to discharge would provide additional safeguards against continued nutrient and chemical pollution of the nearshore environment. The current level of treatment may have been adequate when the population of Oahu was relatively small, but it will likely
Administrator	Ed	Underwood	Soh DLNR - Div of Boating & Ocean Recreation	12/29/2009	See letter from DLNR, Land Division (Morris Atta). no comments
Program Manager	Paul	Conry	SoH DLNR - Div of Forestry and Wildlife	12/29/2009	See letter from DLNR, Land Division (Morris Atta). no comments
Administrator	Pua	Aiu, PhD	SoH DLNR - Div of Historic Preservation		
Administrator	Morris	Atta	SoH DLNR - Land Division	12/29/2009	Letter including comments from Division of Aquatic Resources, Division of Boating & Ocean Recreation, Division of Forestry & Wildlife, Division of State Parks and Land Division - Oahu District.
Administrator	Timmy	Chee	SoH DLNR - Land Division, Oahu District	12/29/2009	See letter from DLNR, Land Division (Morris Atta). Depending on the final design of the system, some improvements may require a land deposition from the Land Board, e.g. set aside or easement.
Executive Director	Karen	Seddon	SoH Hawaii Housing Fin and Dev Corp		
Engineering Manager	Charles	Calvet, P.E.	The GAS Company	1/12/2010	Please be advised that The Gas Company, LLC maintains underground utility gas mains in the project vicinity, which serves commercial and residential customers in the area. We would appreciate your consideration during the project planning and design process to minimize any potential conflicts with the existing gas facilities in the project area.
Director	James	Moncur	UH Environmental Center		
Commander			US Army Corps of Engineers		

Pre-Assessment Distribution List

Title	First Name	Last Name	Company Name	Date Comments Received	Comments
Commander			US Coast Guard, 14th C.G. District		
Senator	Daniel	Inouye	US Congress		
Senator	Daniel	Akaka	US Congress		
Representative	Neil	Abercrombie	US Congress		
Representative	Mazie	Hirono	US Congress		
Field Supervisor	Patrick	Leonard	US Fish and Wildlife Service, Pacific Division		
Pacific Islands Regional Admini	Bill	Robinson	US National Marine Fisheries Service		
Coral Ref Ecologist	Danielle	Jayewardene, Ph.D.	NOAA Fisheries Service, Pacific Islands Regional Office	12/28/2009	We have no major concerns, but do have a couple of recommendations. Since the work includes waste water facility upgrades, sewer rehabilitation and manhole rehabilitation in areas adjacent to the marine waters of Pearl Harbor, we would like to see that the EA/EIS clearly defines: - Any potential impacts (direct, indirect and cumulative) to Essential Fish Habitat and coral/seagrass habitat in the marine near shore environment. - The Best Management Practices that will be applied to control pollution entering the marine environment both during and post construction (e.g. potential waste water spills, potential oil , sediments and any other contaminants, increased storm water run-off from paved areas).
State Conservationist	Lawrence	Yamamoto	US Natural Resource Conservation Service		
Commander			US Naval Station, Pearl Harbor		
President	Lori	Goeas	Villages of Kapolei Association		
President	Wayne	Opasawaro	Waipahu Community Association		
Chair	George	Yalcowenko	Waipahu Neighborhood Board # 22		
President			West Loch Estates Homeowners Assn		
President	Roy	Yonaoshi	West Oahu Economic Development Association		

DEPARTMENT OF THE NAVY
JOINT BASE PEARL HARBOR-HICKAM
850 TICONDEROGA ST STE 100
PEARL HARBOR HI 96860-5102

RECEIVED
AECOM PACIFIC, INC.

11000
Ser N00/048
9 Feb 10

Mr. Lambert Yamashita
AECOM Pacific, Inc.
841 Bishop Street
Suite 1900
Honolulu, HI 96813

Dear Mr. Yamashita:

Thank you for your letter of November 30, 2009. The below are our comments regarding this matter.

a. Natural Resources. The alternate conveyance, alternate storage and alternate hybrid lines would pass across wetland areas, see enclosure (1). Digging across wetland areas would require permitting from U.S. Army Corps of Engineers under the Clean Water Act. This usually requires due diligence that alternatives were duly considered, and if no alternatives are feasible, that effects on wetlands are minimized and mitigated. Also, the alternate storage lines appear to intersect (or come close) to the Honouliuli and Waiawa Refuge units of the Pearl Harbor National Wildlife Refuge Complex. Therefore, the US Fish and Wildlife Service refuge office should be consulted as well during the EIS process. Lastly, there is a site for Potential Pearl City Storage at Pearl City Peninsula. This site is on or adjacent to wetlands. It is recommended that this site be consolidated as much as possible with existing facilities and developed land-used characteristics. Our Integrated Natural Resources Management Plan guides us that facilities should be developed on previously developed land where possible.

b. Cultural Resources. No potential storage or conveyances will affect known high-probability areas of archaeological concern. The attached archaeological resource map (Hawaiian burials or artifact sites) shows the high-probability areas of concern.

Additional study will be required before Navy can concur with any alternative involving Navy property, however, we are pleased to assist AECOM and wish you a successful project. My point of contact for this project is Mr. Wesley Choy at (808) 471-0375 or email Wesley.Choy@navy.mil.

Sincerely,

R. W. KITCHENS
Captain, U.S. Navy
Commander

Enclosures: 1. Wet Land Map
2. Archaeological Resource Map

Enclosure (1)

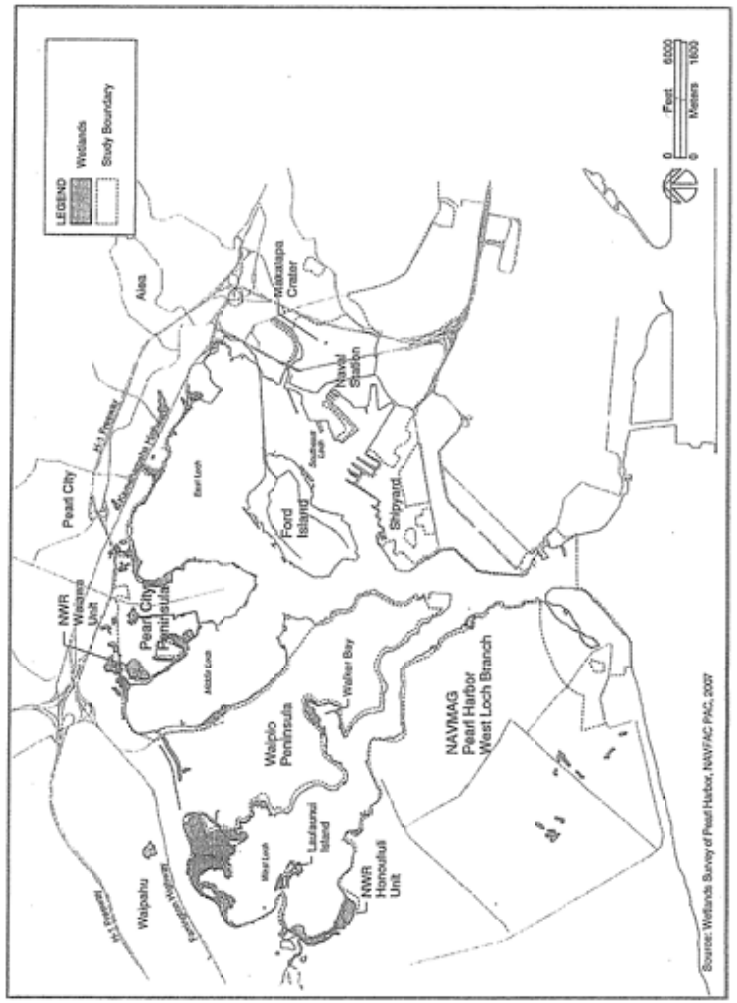

Figure 3-22: Wetlands of Pearl Harbor, O'ahu

Enclosure (2)

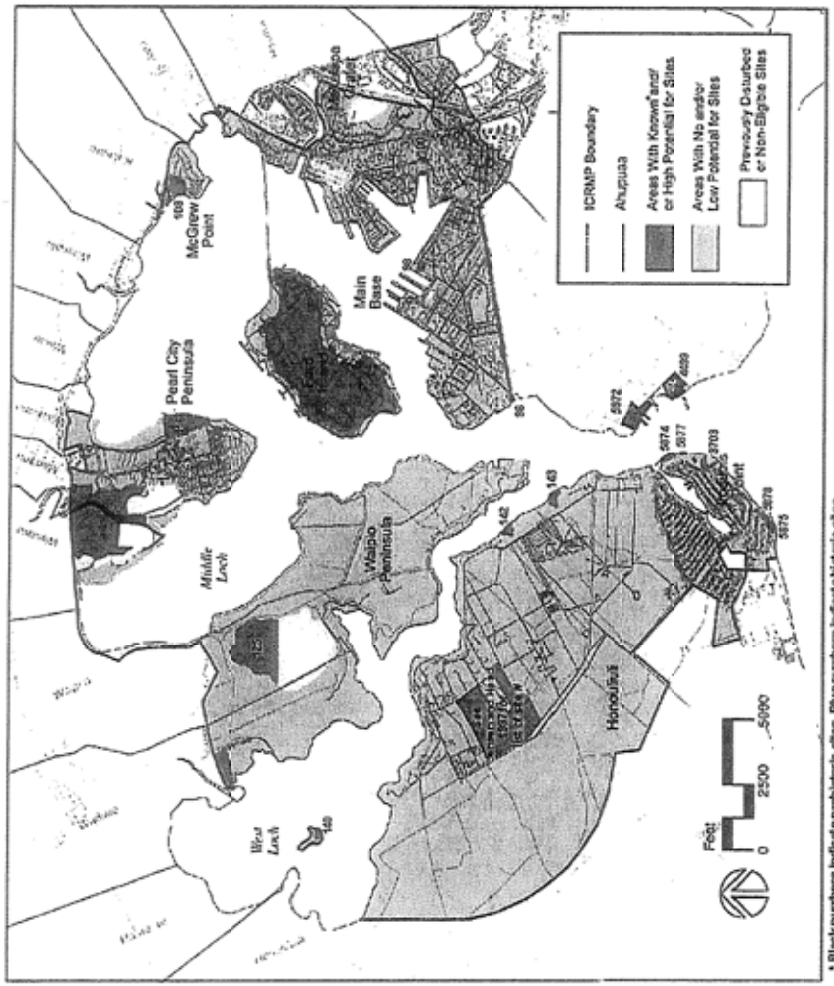

Figure 5
PHNC Archaeological Management Areas

* Black numbers indicate prehistoric sites, Blue numbers indicate historic sites

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0245 fax

July 8, 2010

Commander R.W. Kitchens
Department of the Navy
850 Ticonderoga St Ste 100
Pearl Harbor, HI 96860-5102

Dear Commander R.W. Kitchens:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter dated February 9, 2010 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We offer the following responses to your comments:

A. We recognize that there are natural resources in the project area. Where possible, we will try to avoid any natural resources; however, if no alternatives are feasible, potential impacts will be minimized and mitigated. In addition to the Navy, we will also be contacting other agencies including the U.S. Army Corp of Engineers and the U.S. Fish and Wildlife Service during the development of the draft EIS.

B. Our preliminary research also indicated that there are no cultural resources near the alternatives, however, additional investigation will be conducted during the development of the draft EIS.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

MUFI HANNEMANN
MAYOR

WAYNE YOSHIOKA
DIRECTOR

SHARON ANN THOM
DEPUTY DIRECTOR

TP12/09-343817R

January 13, 2010

Mr. Lambert Yamashita
AECOM
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Yamashita:

Subject: Honouliuli Facilities Plan EISPN

This responds to your letter of November 30, 2009, requesting consultation and comments in preparing an Environmental Impact Statement (EIS) for the subject project.

The Draft EIS should discuss the impact of the project and construction on area streets. The ownership of these streets should also be identified. Note that any work on City streets may be performed only between the hours of 8:30 a.m. and 3:30 p.m., Monday through Friday, unless otherwise permitted.

Construction for the Honolulu High-Capacity Transit Corridor Project (HHCTCP) is anticipated to begin in 2010. Our Rapid Transit Division (RTD) is concerned about potential conflicts between the HHCTCP and the sewer projects. These conflicts include the construction schedule and the actual laying of the pipelines, especially as it relates to the location of the guideway columns along Kamehameha Highway in the vicinity of the Waimalu Wastewater Pump Station and the potential Waimalu storage facility.

The Draft EIS should include a description of public transit and the impact of the plan on public transit during construction. Basic information is available on our websites at www.thebus.org and www.honolulu.gov/dts. For more detail, you may contact our staff at 768-8370 or 768-8369. All construction notes should include the following transit note:

"This project will affect bus routes, bus stops, and para-transit operations, therefore, 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 reserve comment on other traffic-related impacts pending the publication of a traffic impact study with the Draft EIS.

Very truly yours,

WAYNE Y. YOSHIOKA
Director

cc: Office of Environmental Quality Control

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0245 fax

July 8, 2010

Director Wayne Yoshioka
C&C Honolulu, Dept of Transportation Services
650 S King Street, 3rd Floor
Honolulu, HI 96813

Dear Mr. Wayne Yoshioka:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter dated January 13, 2010 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We offer the following responses to your comments:

1. The EA/EISPN will discuss the impact of the project and construction on streets in the area and will identify ownership of these streets. It is noted that work on City streets may be performed only between the hours of 8:30 a.m. and 3:30 p.m., Monday through Friday, unless otherwise permitted.

2. We recognize that one of the tunnel alignments is in the same corridor as the Honolulu High-Capacity Transit Corridor Project (HHCTCP) and we anticipate meeting with the Rapid Transit Division to coordinate any potential conflicts our project may have with the HHCTCP.

3. The draft EIS will include a description of public transit and the impact of construction on public transit.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Otaes
Project Files

BOARD OF WATER SUPPLY

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

January 13, 2010

Mr. Lambert Yamashita
Water/Wastewater Manager
AECOM Pacific, Inc.
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Yamashita:

Subject: Your Letter of November 30, 2009 Regarding the Environmental Assessment/Environmental Impact Statement Preparation Notice Pre-Assessment Consultation for the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii

Thank you for your letter requesting comments on the proposed Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan.

We have the following comments:

1. Water system improvements in the vicinity of the Honouliuli Wastewater Treatment Plant (WWTP) may be required to improve the reliability of the existing potable water system and for the potential expansion of the Honouliuli WWTP.

2. Please submit any requests for additional potable water or recycled water for Board of Water Supply (BWS) review.

3. Construction drawings should be submitted for BWS review as part of the building permit application process.

4. The availability of water will be confirmed when the building permit application is submitted for review and approval.

5. We recommend the use of drought tolerant/low water use plants and xeriscaping principles for all landscaping. We also recommend the installation of an efficient irrigation system, such as drip irrigation, incorporating moisture sensors to avoid the operation of the system in the rain and if the ground has adequate moisture.

6. We reserve further comments until the Environmental Assessment/ Environmental Impact Statement Preparation Notice is submitted for our review.

If there are any questions, please contact Scot Muraoka at 748-5942.

Sincerely,

Wayne M Hashiro

WAYNE M. HASHIRO, P.E.
Manager and Chief Engineer.

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Manager Wayne Hashiro, P.E.
Board of Water Supply
630 S Beretania Street
Honolulu, HI 96813

Dear Mr. Wayne Hashiro:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter dated January 13, 2010 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We offer the following responses to your comments:

1. We acknowledge that the proposed improvements may require improvements to the water system to improve reliability of the existing potable water system and to meet potable water demands for the expansion of the Honouliuli WWTP.

2. Additional potable water demands for the expansion of the Honouliuli WWTP will be evaluated in the preliminary engineering report and this information will be incorporated into the draft EIS.

3. This project does not include construction drawings; however, it is noted that during design construction drawings should be submitted to BWS for review as part of the building permit application process.

4. This project does not include the design of the improvements; however, we understand that the availability of water will be confirmed when the building permit application is submitted for review and approval.

5. We acknowledge the recommendation to use drought tolerant/low water use plants and xeriscaping principles and installation of efficient irrigation system for all landscaping.

6. We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

THE GAS COMPANY

P.O. Box 3000
Honolulu, Hawaii 96802-3000
www.hawaiigas.com

January 7, 2010

AECOM Pacific, Inc.
841 Bishop Street
Suite 1900
Honolulu, Hawaii 96813

Attention: Mr. Lambert Yamashita
Water/Wastewater Manager

Gentlemen:

Subject: Environmental Assessment/Environmental Impact Statement Preparation Notice Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii

Please be advised that The Gas Company, LLC maintains underground utility gas mains in the project vicinity, which serves commercial and residential customers in the area. We would appreciate your consideration during the project planning and design process to minimize any potential conflicts with the existing gas facilities in the project area.

Thank you for the opportunity to comment on the Draft Environmental Assessment. Should there be any questions, or if additional information is desired, please call Karen Lung at 594-5008.

Sincerely,

Charles E. Calvet, P.E.
Manager, Engineering

CEC:kn
10-100

AECOM

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Engineering Manager Charles Calvet, P.E.
The GAS Company
515 Kamakee Street
Honolulu, HI 96814

Dear Mr. Charles Calvet:

Subject: Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii

Thank you for your letter dated January 7, 2010 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. The facilities plan submittal will be in the form of a preliminary engineering report and is essentially a planning document for the City and County of Honolulu to prioritize and budget for future sewer improvements. The draft EIS will incorporate recommendations from the PER and evaluate possible impacts the recommendations may have on the study area. During the planning and design, the consultant shall coordinate with The Gas Company to minimize any potential conflicts with the existing gas facilities.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

Yamashita, Lambert

From: Danielle Jayewardene [Danielle.Jayewardene@noaa.gov]
Sent: Monday, December 28, 2009 11:44 AM
To: Yamashita, Lambert
Cc: Hamic, Trudy; alan.everson
Subject: EA/EIS PN pre-assessment consultation Honouliuli/Wapahu/Pearl City Wastewater Facilities Plan

Dear Mr Yamashita,

Thank you for the early opportunity for us at NOAA Fisheries Service Habitat Conservation Division to review and provide comment on your EA/EIS preparation notice for the Honouliuli/Wapahu/Pearl City Wastewater Facilities Plan. We have no major concerns, but do have a couple of recommendations.

Since the work includes waste water facility upgrades, sewer rehabilitation and manhole rehabilitation in areas adjacent to the marine waters of Pearl Harbor, we would like to see that the EA/EIS clearly defines:
- Any potential impacts (direct, indirect and cumulative) to Essential Fish Habitat and coral/seagrass habitat in the marine near shore environment.
- The Best Management Practices that will be applied to control pollution entering the marine environment both during and post construction (e.g. potential waste water spills, potential oil, sediments and any other contaminants, increased storm water run-off from paved areas).

Feel free to get in touch with any questions.
Aloha and Happy New Year!
Danielle

--
Danielle Jayewardene Ph.D.
Coral Reef Ecologist
NOAA Fisheries Service, Pacific Islands Regional Office
1601 Kapiolani Blvd, Suite 1110
Honolulu, HI 96814
Phone # (808) 944 2162
Fax # (808) 973 2941

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
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808 521 3051 tel
808 524 0246 fax

July 8, 2010

Coral Reef Ecologist Danielle Jayewardene, Ph.D.
NOAA Fisheries Service, Pacific Islands Regional Office
1601 Kapiolani Boulevard, Suite 1110
Honolulu, HI 96814

Dear Ms. Danielle Jayewardene:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter email dated December 28, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We recognize that you have no major concerns; however you had a couple of recommendations. We offer the following responses to your recommendations:

1. The EA/EISPN will describe any potential impacts to Essential Fish Habitat and coral/seagrass habitat in the marine near shore environment; this information will be revised and updated after flora and fauna surveys and the draft preliminary engineering report has been completed.

2. We agree that Best Management Practices should be applied to control pollution entering the marine environment both during and post construction (e.g. potential wastewater spills, oil, sediments and any other contaminants, increased storm water run-off from paved areas)

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

Yamashita, Lambert

From: Yamashita, Lambert
Sent: Monday, December 28, 2009 11:16 AM
To: Colemon, Patricia A CIV NAVFAC HI, ARE1
Cc: Muraoka, John T CIV NAVREGHAWAII N45; Takara, Pamela N CIV NAVFAC HI, OPHBD1; Hamic, Trudy; Pobuk, Jack; Olaes, Marisol; Linda
Subject: RE: Request to extend comment period on EA/EISPN Pre-Assessment Consultation - Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan

Ms. Colemon,

Thank you for responding to the Pre-Assessment Letter that was sent to your agency for notification and review. While the 30 day comment period will lapse on or about December 30th, your comments submitted after this date will still be incorporated into the next phase of the EIS process. Please rest assured that this is only the first step of a three part notification process concerning this project. Future upcoming review periods for this project are as follows:

EA/EISPN Document: Approx. April 2010 (Out for Public Review)

Draft EIS Document: Approx. December 2010 (Out for Public Review)

In addition to these upcoming review periods, Public Information meetings specifically touching upon this project, will begin after the April 2010 date. Your agency can, at that time, request a meeting to specifically address any concerns that your agency may have.

Please feel free to email or call me with any additional questions or comments.

Mahalo,

Lambert

-----Original Message-----
From: Colemon, Patricia A CIV NAVFAC HI, ARE1 [mailto:patricia.colemon@navy.mil]
Sent: Wednesday, December 23, 2009 3:08 PM
To: Hamic, Trudy; Yamashita, Lambert
Cc: Muraoka, John T CIV NAVREGHAWAII N45; Takara, Pamela N CIV NAVFAC HI, OPHBD1
Subject: Request to extend comment period on EA/EISPN Pre-Assessment Consultation - Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan
Importance: High

Dear Mr. Hamic and Mr. Yamashita,

Understand that the comment period expires 30 days from the date of your letter, December 30, 2009. Respectfully request an extension on the comment period for the EA/EISPN noted above.

Very respectfully,
Patty A. Colemon
NEPA/Natural Resources PM
Assistant Regional Engineer's Office
Code ARE1, Bldg. 150 Basement
Ph: #808-473-4137 x224
Fax: #808-473-4155

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
AECOM PACIFIC, INC.

December 28, 2009

AECOM
841 Bishop Street Suite 1900
Honolulu, Hawaii 96813

Attention: Mr. Lambert Yamashita

Ladies and Gentlemen:

Subject: Pre-Assessment Consultation for Environmental Assessment/Environmental Impact State Preparation Notice for Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan

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 Division of Aquatic Resources, Division of Boating & Ocean Recreation, Division of Forestry & Wildlife, Division of State Parks, 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,

Morris M. Atta
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 4, 2009

MEMORANDUM

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

FROM: Morris M. Atta
SUBJECT: Pre-Assessment Consultation for Environmental Assessment/Environmental Impact Statement Preparation Notice for Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan
LOCATION: Island of Oahu
APPLICANT: AECOM on behalf of City & County of Honolulu, Department of Environmental Services

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by December 27, 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

Depending on the final design of the system, some improvements may require a land disposition from the Land Board, e.g. set aside or easement.

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed:
Date: 12/7/2009

LINDA LINGLE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 4, 2009

MEMORANDUM

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

RECEIVED
LAND DIVISION
2009 DEC -8 P 2:41
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

FROM: Morris M. Atta *Charlene*
SUBJECT: Pre-Assessment Consultation for Environmental Assessment/Environmental Impact Statement Preparation Notice for Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan
LOCATION: Island of Oahu
APPLICANT: AECOM on behalf of City & County of Honolulu, Department of Environmental Services

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by December 27, 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: 12/7/09

DEC 7'09am10:76BOR 1:00

LINDA LINGLE
GOVERNOR OF HAWAII

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

→ FORESTRY
planning

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 4, 2009

MEMORANDUM

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

RECEIVED
LAND DIVISION
2009 DEC -9 P 2:4
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

FROM: Morris M. Atta *Charlene*
SUBJECT: Pre-Assessment Consultation for Environmental Assessment/Environmental Impact Statement Preparation Notice for Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan
LOCATION: Island of Oahu
APPLICANT: AECOM on behalf of City & County of Honolulu, Department of Environmental Services

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by December 27, 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.
(X) We have no comments.
( ) Comments are attached.

Signed: [signature]
Date: 12/8/09

LINDA LINGLE
GOVERNOR OF HAWAII

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

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF STATE PARKS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 14, 2009

MEMORANDUM

To: Morris Atta, Administrator
Land Division

From: Daniel S. Quinn, Administrator

Subject: Pre-Assessment Consultation for an Environmental Assessment/Environmental Impact Statement Preparation Notice for the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Department of Environmental Services, City and County of Honolulu

We believe this request is a duplicate of the one we received on December 3, 2009 for which we responded to the effect that we wish to continue to be a consulted party for the EIS.

RECEIVED
LAND DIVISION
2009 DEC 16 P 3:02
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

LINDA LINGLE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 4, 2009

AQUATIC RESOURCES: 27418

DIRECTOR	
COMM. FISH	
AQ RES/ENV	
AQ REC	
PLANNER	
STAFF SVCS	
RCUH/UH	
STATISTICS	
AFRC/FED AID	
EDUCATION	
SECRETARY	
OFFICE SVCS	
TECH ASST	X
Return to:	
No. Copies	
Copies to:	
Due Date:	

BDS

RECEIVED
DEC 4 2009
AQUATIC RESOURCES

MEMORANDUM

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

FROM: Morris M. Atta
SUBJECT: Pre-Assessment Consultation for Environmental Assessment/Environmental Impact Statement Preparation Notice for Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan
LOCATION: Island of Oahu
APPLICANT: AECOM on behalf of City & County of Honolulu, Department of Environmental Services

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by December 27, 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

RECEIVED
LAND DIVISION
2009 DEC 17 P 3:11
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed:
Date: 14 Dec. 2009

State of Hawaii
Department of Land and Natural Resources
DIVISION OF AQUATIC RESOURCES

December 15, 2009

TO: Morris M. Atta, Acting Land Administrator
Land Division, DLNR

THROUGH: Dan A. Polhemus, Administrator

FROM: Brett D. Schumacher, Aquatic Biologist

SUBJECT: Comments on Pre-Assessment Consultation for Environmental Assessment/Environmental Impact Statement Preparation Notice for Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan

Thank you for the opportunity to provide comments regarding the proposal to update the West Mamala Bay Facilities Plan.

The Division of Aquatic Resources (DAR) notes that wastewater spills have been frequent occurrences over the last several years in Hawaii as our population has grown and our existing wastewater system has aged. Because of the detrimental effects that inadequately treated wastewater can have on fresh and marine waters and the living communities they sustain, the development and maintenance of a reliable and effective wastewater management system is of particular concern to the DAR.

The map attached to the pre-assessment consultation document indicates that the system used to transport and treat wastewater through the study area traverses a number of potentially sensitive habitats that encompass a broad spectrum of aquatic environments. For example, the watershed in the study area encompasses a number of small streams that cross through wastewater pipelines. Pipelines also run adjacent to or through Pearl Harbor, which is a large, sheltered nursery area for a number of species of marine fish. The shoreline area in Ewa has long been a popular location to harvest edible limu, and freshwater springs in these areas provide a beneficial balance of nutrients and salinity for this resource. At its end, the outfall pipe passes through and discharges wastewater into the nearshore marine environment where a diverse fish community is found.

At any of these locations, a discharge of untreated wastewater can severely impact natural resources through eutrophication or chemical pollution. For these reasons we strongly support efforts to maintain and upgrade the wastewater system on Oahu. Because the quality and flow rate of both surface and subterranean freshwater streams can impact associated aquatic resources, we urge that these features be considered during planning. Compromising these flows through pollution or interruption could impact a number of native freshwater, estuarine, and marine species.

Finally, the U.S. Environmental Protection Agency has determined that the current level of treatment is inadequate, still leaves high levels of environmental contaminants in the effluent from the outfall pipe. DAR concurs that further treatment of effluent prior to discharge would provide additional safeguards against continued nutrient and chemical pollution of the nearshore environment. The current level of treatment may have been adequate when the population of Oahu was relatively small, but it will likely become increasingly inadequate as our population continues to grow.

The area where this and other wastewater pipes discharge is largely sandy habitat that is frequently, though incorrectly, considered to be of low ecological or other value. Likely this perception is held because few fish are found in such soft-bottom habitats during the day. However, at night this area is used as feeding habitat by a number of species of reef fish that divers and fishers desire. Increasing nutrient and other inputs to these areas can alter the community. We urge that the cumulative effect of years of increasing inputs should be taken into account as future wastewater treatment plans are developed.

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Administrator Morris Atta
State of Hawaii DLNR - Land Division
1151 Punchbowl Street, Room 220
Honolulu, HI 96813

Dear Mr. Morris Atta:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter dated December 28, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We also appreciate your distribution of our Pre-Assessment Consultation letter to the various DLNR Divisions. We offer the following responses to the comments in your letter:

1. **Land Division – Oahu District** – We acknowledge that the proposed project may require land at the various facilities and for an easement for the deep tunnel.

2. **Division of Boating & Ocean Recreation** – We acknowledge that you have no comments at this time.

3. **Division of Forestry & Wildlife** – We acknowledge that you have no comments at this time.

4. **Division of State Parks** – To date we have not received a separate response; however, we acknowledge that you wish to continue to be a consulted party for the EIS.

5. **Division of Aquatic Resources** –We acknowledge that the study area traverses a number of potentially sensitive habitats that encompass a broad spectrum of aquatic environments. Preliminary impacts of the proposed project will be included in the EA/EISPN and will be updated in the draft EIS using information provided in the flora and fauna surveys and draft preliminary engineering report.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Land Division – Oahu District – Timmy Chee, Administrator
Division of Boating & Ocean Recreation – Ed Underwood, Administrator
Division of Forestry & Wildlife – Paul Conry, Administrator
Division of State Parks – Daniel Quinn, Administrator
Division of Aquatic Resources – Dan Polhemus, Administrator
Division of Aquatic Resources – Brett Schumacher, Aquatic Biologist
Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

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

KENNETH G. SILVA
FIRE CHIEF

ALVIN K. TOMITA
DEPUTY FIRE CHIEF

December 28, 2009

Mr. Lambert Yamashita
Water/Wastewater Manager
AECOM Pacific, Inc.
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Yamashita:

Subject: Environmental Assessment/Environmental Impact Statement
Preparation Notice - Preassessment Consultation
Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan
Ewa and Central Oahu, Hawaii

In response to your letter dated November 30, 2009, regarding the above-mentioned subject, the Honolulu Fire Department reviewed the material provided and requires that the following be complied with:

1. Provide a fire apparatus access road for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45 720 mm) from a fire apparatus access road as measured by an approved route around the exterior of the building or facility. (1997 Uniform Fire Code, Section 902.2.1.)

2. Provide a water supply, approved by the county, capable of supplying the required fire flow for fire protection to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed or moved into or within the county.

   On-site fire hydrants and mains capable of supplying the required fire flow shall be provided when any portion of the facility or building is in excess of 150 feet (45 720 mm) from a water supply on a fire

apparatus access road, as measured by an approved route around the exterior of the facility or building. (1997 Uniform Fire Code, Section 903.2, as amended.)

3. Submit civil drawings to the HFD for review and approval.

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

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Chief Kenneth Silva
City and County of Honolulu - Honolulu Fire Dept
636 South Street
Honolulu, HI 96813-5007

Dear Mr. Kenneth Silva:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter dated December 28, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. The facilities plan submittal will be in the form of a preliminary engineering report and is essentially a planning document for the City and County of Honolulu to prioritize and budget for future sewer improvements. The draft EIS will incorporate recommendations from the PER and evaluate possible impacts the recommendations may have on the study area. We understand that during the design of the improvements, the following must be complied with:

1. Provide a fire apparatus access road for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45 720 mm) from a fire apparatus access road as measured by an approved route around the exterior of the building or facility. (1997 Uniform Fire Code, Section 902.2.1.)

2. Provide a water supply, approved by the county, capable of supplying the required fire flow for fire protection to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed or moved into or within the county.

   On-site fire hydrants and mains capable of supplying the required fire flow shall be provided when any portion of the facility or building is in excess of 150 feet (45 720 mm) from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building. (1997 Uniform Fire Code, Section 903.2, as amended.)

3. Submit civil drawings to the HFD for review and approval.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

MUFI HANNEMANN
MAYOR

DAVID K. TANOUE
DIRECTOR

ROBERT M. SUMITOMO
DEPUTY DIRECTOR

09WWB102 (SG)
2009/ELOG-2857

December 24, 2009

Mr. Lambert Yamashita
AECOM
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Yamashita:

Subject: Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation - Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii

This is in response to your November 30, 2009 letter, requesting comments for the proposed Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan. We have reviewed the project and any of the proposed work which is in the shoreline setback area and/or special management area may be subject to the requirements of the Revised Ordinances of Honolulu Chapters 23 and/or 25, as appropriate.

Should you have any questions, please contact Mr. Scott Gushi of our Wastewater Branch at 768-8207.

Very truly yours,

Dennis M. Nishimura
For David K. Tanoue, Director
Department of Planning and Permitting

DKT:dl
[744573]

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Director David Tanoue
C&C Honolulu, Dept of Planning and Permitting
650 S King Street
Honolulu, HI 96813

Dear Mr. David Tanoue:

Subject: Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii

Thank you for your letter dated December 24, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We acknowledge that a portion of the proposed work is in the shoreline setback area and special management area and is subject to the requirements of the Revised Ordinances of Honolulu Chapters 23 and 25.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

LINDA LINGLE
GOVERNOR

PATRICIA HAMAMOTO
SUPERINTENDENT

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

OFFICE OF THE SUPERINTENDENT

RECEIVED
DEC 2 1
AECOM PACIFIC, INC.

December 23, 2009

Mr. Lambert Yamashita
AECOM Pacific, Inc.
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Yamashita:

SUBJECT: Early Consultation on Wastewater Facilities, Ewa and Central Oahu

The Department of Education presently has no specific concerns on the sewer improvements that you will be studying to update City and County plans for wastewater facilities in West and Central Oahu.

We would appreciate continued updates as these plans may impact upon existing or planned schools.

Should you have any questions, please call Heidi Meeker of the Facilities Development Branch at 377-8301.

Very truly yours,

Patricia Hamamoto
Superintendent

PH:jmb

c: Randolph Moore, Assistant Superintendent, OSFSS

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

AECOM

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Superintendent Kathryn Matayoshi
State of Hawaii Dept of Education
P.O. Box 2360
Honolulu, HI 96804

Dear Ms. Kathryn Matayoshi:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for the Department of Education's letter (from former Superintendent Patricia Hamamoto) dated December 23, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We acknowledge that there are no specific concerns at this time and that the DOE would appreciate continual updates on the proposed project.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

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

JEOFFREY S. CUDIAMAT, P.E.
DIRECTOR AND CHIEF ENGINEER

GEORGE YOSHIO MIYAMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO
DRM 09-1143

December 23, 2009

Mr. Lambert Yamashita
AECOM
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Yamashita:

Subject: Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation
Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan,
Ewa and Central Oahu, Hawaii

Thank you for the opportunity to provide comments on the pre-assessment consultation for the subject Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan.

We have no comments to offer regarding proposed improvements located entirely within wastewater treatment plant and pump station sites. These improvements will have negligible impact on our facilities and operations.

However, during the Environmental Assessment, design and construction phases for the various projects comprising the wastewater facilities plan we request that open trench construction and buried temporary bypass sewer lines within City roadways be kept to a minimum and utilized only where less destructive methods may not be feasible.

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

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

Sincerely,

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

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Director Jeoffrey Cudiamat
C&C Honolulu, Dept of Facility Maintenance
1000 Uluohia Street, Suite 215
Kapolei, HI 96707

Dear Mr. Jeoffrey Cudiamat:

Subject: Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii

Thank you for your letter dated December 23, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We offer the following responses to your comments:

1. We acknowledge that you have no comments regarding the facilities improvements at this time.

2. We understand that the City requests that open trench construction and buried temporary bypass sewer lines within City roadways be kept to a minimum and utilized only where less destructive methods are not feasible.

3. We also understand that the City requests that flowable fill or CLSM be evaluated and/or considered for use as backfill material.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

LINDA LINGLE
GOVERNOR

BRENNON T. MORIOKA
DIRECTOR

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

IN REPLY REFER TO:

HWY-PS
2.4141

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

December 21, 2009

RECEIVED
AECOM PACIFIC, INC.

Mr. Lambert Yamashita
AECOM Pacific, Inc.
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Yamashita:

Subject: Pre-Assessment Consultation, Environmental Impact Statement Preparation Notice
Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu

We are in receipt of your November 30, 2009 pre-assessment consultation letter for the subject project. We also acknowledge recent meetings held with our staff where comments were previously provided. We have no further formal comments to offer at this time.

It has been brought to our attention that the City and County of Honolulu is also pursuing similar updates to their Sand Island and Kaneohe Wastewater Facility Plans that are being pursued as separate and independent efforts. Where possible and appropriate, we would greatly appreciate the City consolidating meetings and information for these three separate efforts into a single meeting. Such consolidation would aid in reducing scheduling difficulties and hopefully reduce redundancy as we all struggle to cope with budget shortfalls and State worker furloughs. We would also greatly appreciate the preparation and receipt of meeting summaries that document discussions and comments. Please transmit these meeting summaries to the respective Branches in attendance, as well as to our Highways Planning Branch (HWY-P) as we wish to participate in the environmental process as a consulted party.

If you have any questions, contact Ken Tatsuguchi, Head Planning Engineer, Highways Division, at 587-1830.

Very truly yours,

GLENN M. YASUI
Administrator
Highways Division

AECOM

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Administrator Glenn Yasui
State of Hawaii Dept of Transportation - Highways Div
869 Punchbowl Street, Room 513
Honolulu, HI 96813

Dear Mr. Glenn Yasui:

Subject: Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii

Thank you for your letter dated December 21, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. The comments provided by DOT staff members at previous meetings will be incorporated into the EA/EISPN. We recognize that you have no further formal comments at this time.

The City and County of Honolulu is also in the process of updating the Sand Island and Kailua-Kaneohe wastewater facilities plans; however, these projects are separate and independent and may be on different schedules. We understand that the State is coping with budget shortfalls and State worker furloughs and where possible and appropriate, will consolidate meetings on the three projects into a single meeting.

In response to your request of meeting summaries, we will prepare meeting summaries following meetings with DOT to document the discussion and comments. These meeting minutes will be transmitted to all parties in attendance, as well as Ken Tatsuguchi of the Highways Planning Branch.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

The Director of Transportation has requested five copies of the EA/EISPN to facilitate review by the Highways and Harbors Divisions. We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

LINDA LINGLE
GOVERNOR

BRENNON T. MORIOKA
DIRECTOR

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

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

IN REPLY REFER TO

STP 8.3482

December 21, 2009

Mr. Lambert Yamashita
Water/Wastewater Manager
AECOM
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Yamashita:

Subject: Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan
Environmental Assessment (EA)/Environmental Impact Statement Preparation
Notice (EISPN) Pre-Assessment Consultation

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

DOT understands that the City and County of Honolulu (CCH), Department of Environmental Services (ENV) is proposing to update portions of the West Mamala Bay Facilities Plan (2001) with a Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan (Honouliuli Fac Plan). The plan will include the Honouliuli Wastewater Treatment Plant (WWTP) and its wastewater service area, including the Ewa and Central Oahu area from West Beach to Halawa with the focus being the main conveyance system from Halawa to Pearl City to Waipahu to the WWTP. The project will impact segments of various State highway and harbor facilities.

DOT recommends that the DEIS discuss and evaluate project impacts to various segments of the State highway (i.e. Geiger Road, Fort Weaver Road, Farrington Highway, Salt Lake Boulevard, H-1 Freeway, and Kamehameha Highway) facilities, such as, but not limited to:

1. Short-term traffic impacts generated by the project during construction, including inconvenience to the motoring public, bicyclists, pedestrians, joggers, residents, business merchants, etc. should be addressed.

2. Please note that a DOT Highways Division permit is required to transport any oversized equipment/overweight loads on State highway facilities and the construction vehicles and types of equipment that will be used at the job site must be identified.

3. The hours that construction activity will be occurring should be noted and included in any impact assessment.

4. The applicant must comply with DOT's "Pipeline Removal Policy." For example, if the applicant encounters any abandoned pipes/conduits within the State highway right-of-way, the pipeline should not be abandoned in place and allowed to cause future problems such as creating "voids" in the ground when the lines eventually rust, deteriorate and break. The applicant must also prepare and submit as-built plans.

5. A permit application and detailed construction plans must be submitted to the DOT Highways Division for review and approval for any work done within the State highway right-of-way. All improvements within the State highway right-of-way must conform to nationally accepted design standards and must be done at no cost to the State.

DOT further recommends that the DEIS discuss and evaluate project impacts to the State harbor right-of-way along the energy corridor and other harbor facilities.

Five copies of the DEIS should be provided to DOT to facilitate review by the Highways and Harbors Divisions. If there are any other questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at telephone number. (808) 587-2356.

Very truly yours,

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

c: Katherine Kealoha, Office of Environmental Quality Control

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Director Brennon Morioka
State of Hawaii Dept of Transportation
869 Punchbowl Street, Room 509
Honolulu, HI 96813

Dear Mr. Brennon Morioka:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter dated December 21, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We offer the following responses to your comments:

1. Short-term impacts associated with construction will be discussed in the EA/EISPN and will be revised in the draft EIS with information from a traffic impact assessment report and the preliminary engineering report.

2. It is noted that a DOT Highways Division permit is required to transport any oversized equipment/overweight loads on State highway facilities and the construction vehicles and types of equipment that will be used at the job site will be identified.

3. The hours of construction activity will be noted in the EA/EISPN and if necessary, updated in the draft EIS.

4. We recognize that the project must comply with DOT's "Pipeline Removal Policy."

5. It is noted that a permit application and detailed construction plans must be submitted to the DOT Highways Division for review and approval for any work done within the State highway right-of-way. All improvements within the State highway right-of-way must conform to nationally accepted design standards and must be done at no cost to the State.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

In reply, please refer to
File: 12071PDCL.09

12071PDCL.09

December 21, 2009

RECEIVED
DEC 22 2009
AECOM PACIFIC, INC.

Mr. Lambert Yamashita
Water/Wastewater Manager
AECOM Pacific, Inc.
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Yamashita:

Subject: Pre-Assessment Consultation Comments for the Environmental Assessment (EA)/ Environmental Impact Statement Preparation Notice (EISPN) Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan Ewa and Central Oahu, Island of Oahu, Hawaii

The Department of Health (DOH), Clean Water Branch (CWB), received your transmittal letter, dated November 30, 2009, requesting pre-assessment consultation comments for the preparation of an EA/EISPN for the subject project. The DOH-CWB has reviewed the document and offers these comments on your project. Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf.

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

   b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

   c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:

   a. Storm water associated with construction activities, including excavation, grading, clearing, demolition, uprooting of vegetation, equipment staging, and storage areas that result in the disturbance of one (1) acre or more of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the start of the construction activities.

   b. Hydrotesting effluent.

   c. Dewatering effluent.

   You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html.

3. For types of wastewater not listed in Item 2 above or wastewater discharging into Class 1 or Class AA waters, you must obtain an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html.

4. If this project involves work in, over, or under waters of the United States, it is recommended that you consult with the Army Corps of Engineers, Regulatory Branch (Tel. No.: 438-9258) in regards to their permitting requirements. Waters of the United States include essentially all surface waters, including wetlands.

5. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 Water Quality Certification are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation.

If you have any questions, please visit our website at http://www.hawaii.gov/health/environmental/water/cleanwater/index.html, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,

for ALEC WONG, P.E., CHIEF
Clean Water Branch

DCL:ml

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Chief Alec Wong
State of Hawaii Dept of Health - Clean Water Branch
P.O. Box 3378
Honolulu, HI 96801-3378

Dear Mr. Alec Wong:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter dated December 21, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We offer the following responses to your comments:

1. We recognize that any project and its potential impacts to State waters must meet the anticegradation policy (HAR, Section 11-54-1.1), designated uses (HAR, Section 11-54-3) and water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. NPDES permits will be required for discharges of wastewater into State surface waters (HAR, Chapter 11-55). Notice of Intent (NOI) C for storm water associated with construction activities, NOI F for discharges associated with hydrotesting waters and NOI G for discharges associated with construction activity dewatering effluent will be submitted for discharges into Class A or Class 2 State waters 30 calendar days prior to construction activity and/or discharge activity (NOI F).

3. At this point, we do not believe that an NPDES individual permit will be required for this project; however if an NPDES individual permit is required, it will be submitted 180 days before the commencement of the discharge.

4. We will be consulting the Army Corps of Engineers, Regulatory Branch for work in, over, or under waters of the United States.

5. We acknowledge that all discharges related to the project construction or operations must comply with the State's Water Quality Standards.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

LINDA LINGLE
GOVERNOR

DARWIN L.D. CHING
DIRECTOR

COLLEEN Y. LaCLAIR
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
830 PUNCHBOWL STREET, ROOM 321
HONOLULU, HAWAII 96813
www.hawaii.gov/labor
Phone: (808) 586-8842 / Fax: (808) 586-9099
Email: dir.director@hawaii.gov

December 17, 2009

RECEIVED
AECOM PACIFIC, INC.

Mr. Lambert Yamashita
Water/Wastewater Manager
AECOM
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Yamashita

In accordance with your request dated November 30, 2009, the Department of Labor and Industrial Relations has no comments or recommendation regarding the "environmental assessment (E/A)/environmental impact statement preparation notice (EISPN) pre-assessment consultation for the Honouliuli/Waipahu/Pearl City wastewater facilities plan for Ewa and Central Oahu".

Should you or staff have questions, please contact me 586-8844, or Mr. Patrick Fukuki, our Business Management Officer, at 586-8888.

Sincerely,

Darwin L.D. Ching

DARWIN L.D. CHING

AECOM

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Director Darwin Ching
State of Hawaii Dept of Labor and Industrial Relations
830 Punchbowl Street
Honolulu, HI 96813

Dear Mr. Darwin Ching:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter dated December 17, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We acknowledge that you have no comments or recommendations at this time.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

Hawaiian Railway Society
A Chapter of the National Railway Historical Society
P.O. Box 60369, Ewa Station, Ewa Beach, HI 96706
(808) 681-5461 or Hawaiianrailway.com

December 16, 2009

Lambert Yamashita
AECOM
841 Bishop St. Suite1900
Honolulu, HI 96813

Dear Mr. Yamashita.

Thank you for contacting the Hawaiian Railway Society, (H.R.S.) regarding the proposed City and County's Honoulilili FAC Plan. We have reviewed the information provided and have the following concerns:

1. Project HN-CS-4 Renton Road, sewer and manhole rehabilitation.
   As Renton road fronts our property and the sewer may cross under the Oahu Railway & Land Company's tracks, will there be any impact? This remaining stretch of track is on the National Register of Historic Places and Sites and is maintained and used by the H.R.S.

2. Is there any planned work on the Makakilo and Kapolei Interceptor sewer lines which run side by side, via easement rights, thru our property?

3. Is there any planned work on the East Kapolei off-site sewer which connects with the Kapolei Interceptor line at the western end of our property and proceeds north under the OR&L's tracks, also via easement rights favorable to the City and County?

We would appreciate any feedback from you regarding these concerns. Please address all correspondences to,

Robert Yatchmenoff
President, HRS
Ewa Station, P.O.Box 60369
Ewa Beach, Hi 96706-3402

Sincerely,

Robert Yatchmenoff
President, HRS

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

President Robert Yatchmenoff
Hawaiian Railway Society
Ewa Station
P.O. Box 60369
Ewa Beach, HI 96706-3402

Dear Mr. Robert Yatchmenoff:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter dated December 16, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We offer the following responses to your comments:

1. Your inquiry concerning Project HN-CS-4 Renton Road, sewer and manhole rehabilitation project, will be forwarded to the appropriate City agency. To the extent that this proposed project will impact areas being used by the Hawaiian Railway Society (H.R.S.), the draft EIS will include a description of any impacts of construction on areas being used by the H.R.S.

2. Your inquiry concerning any planned work on the Makakilo and Kapolei Interceptor sewer lines, which run side by side, via easement rights, thru your property will be forwarded to the appropriate City agency.

3. Your inquiry concerning any planned work on the East Kapolei off-site sewer which connects with the Kapolei Interceptor line at the western end of your property and proceeds north under the OR&L's tracks, also via easement rights favorable to the City and County will be forwarded to the appropriate City agency.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

LINDA LINGLE
GOVERNOR

RUSS K. SAITO
COMPTROLLER

SANDRA L. YAMBO
DEPUTY COMPTROLLER

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)1328.9

DEC 15 2009

RECEIVED
DEC 16 2009
AECOM PACIFIC, INC.

Mr. Lambert Yamashita
AECOM Pacific, Inc.
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Yamashita:

Subject: Environmental Assessment (EA)/ Environmental Impact Statement Preparation Notice (EISPN)
Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu

Thank you for the opportunity to provide input to this EA/ EISPN. Because our Aloha Stadium facility is adjacent to the Halawa Wastewater Pump Station, TMK 9-9-003:062, please keep us informed of any changes being planned for this facility.

If you have any questions, please call me at 586-0400 or have your staff call Mr. Bruce Bennett of the Public Works Division at 586-0491.

Sincerely,

Russ K. Saito
State Comptroller

c: Ms. Katherine Kealoha, DOH-OEQC
Mr. Scott Chan, Aloha Stadium Manager

AECOM

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Comptroller Russ Saito
State of Hawaii Dept of Accounting and General Svc
Kalanimoku Building
1151 Punchbowl Street
Honolulu, HI 96813

Dear Mr. Russ Saito:

Subject: Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii

Thank you for your letter dated December 15, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We will keep you updated with any changes planned for the Halawa Wastewater Pump Station, TMK 9-9-003:062, since the facility is adjacent to Aloha Stadium.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
WILLIAM D. BALFOUR, JR.
SUMMER ERDMAN
NEAL S. FUJIWARA
CHIYOME L. FUKINO, M.D.
GONNIA FAY K. KIYOSAKI, P.E.
LAWRENCE H. MIKE, M.D., J.D.

KEN C. KAWAHARA, P.E.
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

December 14, 2009

RECEIVED
AECOM PACIFIC, INC.

Mr. Lambert Yamashita, Water/Wastewater Manager
AECOM Pacific, Inc.
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Mr. Lambert::

SUBJECT: Environmental Assessment (EA)/ Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation - Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii

TMK NO.: N/A

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at *http://www.hawaii.gov/dlnr/cwrm*.

Our comments related to water resources are checked off below.

☐ 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.

☐ 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

☐ 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.

☐ 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EPA as having high water efficiency can be found at http://www.epa.gov/watersense/pp/index.htm.

☐ 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://hawaii.gov/dbedt/czm/initiative/lid.php.

☐ 6. We recommend the use of alternative water sources, wherever practicable.

☐ 7. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM:
Additional information and forms are available at *www.hawaii.gov/dlnr/cwrm/forms.htm*.

☐ 8. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water.

☐ 9. A Well Construction Permit(s) is (are) required before the commencement of any well construction work.

☐ 10. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.

☐ 11. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.

☐ 12. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

☒ 13. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a stream channel.

☐ 14. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.

☐ 15. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.

☐ 16. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

☐ OTHER:

If there are any questions, please contact Edwin Sakoda at 587-0234.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DRF-GN 03/02/2006

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Deputy Director Ken Kawahara, P.E.
State of Hawaii DLNR - Commission on Water Resource Management
Kalanimoku Building
1151 Punchbowl Street, Room 227
Honolulu, HI 96813

Dear Mr. Ken Kawahara:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation – Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter dated December 14, 2009 regarcing the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We acknowledge that Stream Channel Alteration Permits are required before any alteraton can be made to the bed and/or banks of a stream channel.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Potuk
Department of Environmental Services – Marisol Olaes
Project Files

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

MUFI HANNEMANN
MAYOR

LOUIS M. KEALOHA
CHIEF

PAUL D. PUTZULU
KARL A. GODSEY
DEPUTY CHIEFS

OUR REFERENCE BS-VYH

December 4, 2009

RECEIVED
AECOM PACIFIC, INC.

Mr. Lambert Yamashita
Water/Wastewater Manager
AECOM Pacific, Inc.
841 Bishop Street
Honolulu, Hawaii 96813

Dear Mr. Yamashita:

This is in response to your letter of November 30, 2009, requesting comments on an Environmental Assessment, Environmental Impact Statement Preparation Notice, Pre-Assessment Consultation, for the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu.

The Honolulu Police Department has no comments to offer at this time.

If there are any questions, please call Mr. Brandon Stone of the Executive Bureau at 529-3644.

Sincerely,

LOUIS M. KEALOHA
Chief of Police

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

Serving and Protecting With Aloha

AECOM

AECOM
841 Bishop Street
Suite 1900
Honolulu, HI 96813
www.aecom.com

808 521 3051 tel
808 524 0246 fax

July 8, 2010

Chief Louis Kealoha
Honolulu Police Dept
801 South Beretania Street
Honolulu, HI 96813

Dear Mr. Louis Kealoha:

Subject: **Environmental Assessment (EA)/Environmental Impact Statement Preparation Notice (EISPN) Pre-Assessment Consultation -- Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii**

Thank you for your letter dated December 4, 2009 regarding the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan EA/EISPN Pre-Assessment Consultation. We recognize that you have no comments at this time.

We appreciate your time and effort in reviewing the Pre-Assessment Consultation letter and for providing us with your comments.

We will notify you when the EA/EISPN is available and would appreciate any comments you may have on the EA/EISPN. Please feel free to contact me if you have any questions.

Sincerely,

Lambert Yamashita
AECOM Pacific, Inc.
Water/Wastewater Manager

cc: Department of Environmental Services – Jack Pobuk
Department of Environmental Services – Marisol Olaes
Project Files

Appendix B – Public Outreach Meeting Minutes

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, April 28, 2010
Time:	11:00am
Place:	City & County Dept. of Parks & Recreation 1001 Uluohia St., #309, Kapolei
Attendees:	Lester Chang, Dexter Liu, Richard Haru, Craig Mayeda, James Kumagai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview; James provided detailed description of route; deep tunneling and specific areas over which Parks & Rec has jurisdiction.
2. **Questions/Comments**
   A. Re: Blaisdell Park
   Les: Why would the storage tanks have to be above ground? (James: Looked at above and underground options; however underground would be more expensive.)
   Dexter: What is the area/footprint needed? (James: Could be ¼ - ½ acre; about 10,000 sq. ft. Still in early planning.)
   What is the cost differential between an above ground vs. underground tank? (James: Not sure until project is further along; we're talking millions.)
   James: There's also a 2 acre site (in the park) that will be needed during construction for the tunnel shaft and staging. Les: How long will the construction take? (James: Tunneling will take 2-3 years or longer for the whole project.)
   James: Deep tunneling is expensive but seems to be the preferred way – there's less surface disruption and is a simpler operation.
   Les: What if we say don't touch the park? The Park is well used by the community; the project will affect thousands of park users. (James: The alternative is to stay on Kamehameha Hwy.- but with transit that could still be disruptive.)
   If you use the park it should be within reason and need to look at how to minimize the effect on the community and at the end what do you, the project, give back to the park.
   B. Lehua School Park area
   James explained possible need to relocate the Pearl City Pump Station.
   Les: If you relocate the pump station will you build us a new park? What is the size of the pump station? (James: About ¾ acre.)
   Les asked Dexter: Do you know how much the park is used? How much does the school use the park?
   James: If we tunnel then there is no need for the pump station.
   Dexter: If you move the pump station to the park area isn't that also in the flood zone?
   Les: We would be opposed to turning the park over but if it's necessary, then you need to look at giving back equal, in-kind or better park area in order to sell it to the community. Also, need to look at the perception of having a pump station with odor concerns or chemical use next to a school.
   James: The ultimate decision will come after the EIS process with full input from all affected parties, agencies, the community, etc.
   Les: Need to check with DOE – maybe they don't need the school. We're dealing with similar community issues at Ala Wai and Ala Moana. We know this is something that has to be done but open space, park area has to be preserved as well. Prefer deep tunneling; least amount of disruption to the community.
   C. Craig: Need to also look at the Westloch shoreline park as route passes under that area. Are you doing planning and design? (James: Only planning now; looking at all the alternatives now; cost, impact to the community, etc.
   How far down does the tunnel go? (James: About 40' at Halawa; 120' on Honouliuli end.)
   D. Alan: Why is the project focused from Honouliuli to Halawa instead of Kapolei area? (Kapolei has a newer system; planning is for future growth; different planning context.)
   E. James: Who should we keep in touch with in the future? (Should go through the Director's office.)
   F. Les: What is the EIS schedule? (Draft due end of 2010.)
   Construction to begin? (Possibly 6 years out at the earliest; the pumping stations might go earlier.)
   We'll fight to the end (to not have) an above ground tank at Blaisdell Park; unless it can be placed on the industrial end of the park in conjunction with industrial use. Trying to give you as many options as possible as you move forward.

Who is your contact at ENV? (Jack Pobuck.)
Remind Pobuck that Parks Department is concerned about our constituents and will fight to protect their interests.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, March 31, 2010
Time:	2:00pm
Place:	U.S. Fish & Wildlife Service 3375 Koapaka St. #B296
Attendees:	Keith Swindle, Aaron Nadig, George Phocas, Lambert Yamashita, Jeremy Lambert, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Jeremy gave project overview.
2. **Questions/Comments**
   A. Lambert inquired as to whether they received the pre-assessment mailing and who should be the dept. contact. (Keith recalled seeing the mailing. In the future, mailing and contact should be to Loyal Mehrhoff-Field Supervisor.)
   What is the department's jurisdiction? (Wild life refuge areas and Federal trust species regardless of land ownership.)
   B. George: There are specific rules and regulations tied to each area of responsibility and there is coordination between agencies so that there is no duplication of permits.
   Wetland – Army Corps of Engineers
   Federal owned land – Navy
   Fish & Wildlife Refuge – Specific branch of Fish & Wildlife
   Typically (on a project like this) you would work with Aaron or Aaron's office.
   C. Lambert: Is there coordination between state agencies and Fish & Wildlife? (George: Yes, they talk, state is supposed to be in compliance with Fish & Wildlife regulations.)
   FYI – AECOM is working with John Ford at SWCA as the project consultant for biological studies. (Lambert went over the project schedule.)
   What is the process for working with F & W? (Aaron: John Ford can contact F & W for the species list as well as the regulations relating to each species. Aaron outlined possible concerns re: specific species i.e., shrimp, birdlife that might be encountered in this project.)
   What have you heard about the project; have any concerns been raised? (Aaron: Can't see it not being a possibility.)
   At what point would refuge boundaries be helpful now? (F & W would require a letter requesting the species list, refuge boundaries and best management practices – John Ford will know what to ask for.)
   D. Keith: Will you (AECOM) be involved in implementation? (The implementation is 7-10 years in the future so not certain about whether AECOM would be involved.)
   Problems usually arise during implementation. (Lambert explained project timeline and process.
   E. Lambert: Do you use GIS? (Aaron: Yes. If you write a letter requesting info we'll usually get back to you within 30 days.)
   Would a tunnel 70-90 feet down be a concern in a wildlife area? (Aaron: The nesting period for stilts (April – May, June, July) might be a concern if project disturbed their nesting areas.)
   F: Keith asked about the current pump/force main system. (Jeremy explained the existing system and tunneling process.)
   What is the life expectance of the tunnel? (Planning for 150 years.)
   F. Linda asked whether was any one else or any other agency that we should contact. (George recommended we meet with the Army Corps of Engineers and Federal DOT since project is along the Transit route.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, March 24, 2010
Time:	1:30pm
Place:	DOT – Harbors Division 79 So. Nimitz Hwy. Conference room
Attendees:	Jonathan Yee, Davis Yogi, Jeremy Koch, Pete Diaz, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Jeremy gave project overview.
2. **Questions/Comments**
   A. Jonathan: Look at what affects the energy corridor. 3 tenants in corridor: HECO, Gas Co., Tesoro. Should be no problem as long as the project does not encroach on energy corridor. If the project does encroach then need to seek concurrence from the 3 tenants. Harbors Division is the approving agent for energy corridor. Chevron may sometimes act as agent for HECO. (Pete: Is dealing with force main that parallels the energy corridor.)
   B. Linda: Can you send us contact info for tenants? (Jonathan: Will send email with info. Process: Concurrence from clients- about 1 month time frame. Application to Harbors Division. Might want to get preliminary concurrence or mou (memorandum of understanding) for future projects.)
   C. Davis: Did you go over route and where it might intersect with energy corridor? Concerned about settling components with respect to energy corridor- both in tunnel. Jonathan: Deliverables – mou from respective tenants. Davis: Whatever you do you need to think in terms of what would be the impact to electrical, fuel and gasoline. (Jeremy: Looked at geology to assess risk in various routes. Need a better map of energy corridor. Map used is very old.) (Jonathan: Will send it to Jeremy, Pete.)
   D. Davis: Asked for parties to get together and give presentation of understanding; document who was there, what was the understanding and who has authority to do what.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Mar. 17, 2010
Time:	11:30pm
Place:	Plaza Club Pioneer Plaza
Attendees:	Yuki Kitagawa, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project
2. **Questions/Comments**
   A. Linda explained that we met earlier with the Hawaii Farm Bureau and they suggested meeting with him and James Nakatani. We provided the info to James per his request and he thought that the project would not have an impact on agricultural operations in the area and declined to meet. After the briefing Yuki agreed with James that the project should have little or no impact on ag. He also suggested that we meet with the new Executive Director of the Hawaii Farm Bureau and bring her up to speed.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, March 2, 2010
Time:	10:30am
Place:	Board of Water Supply 630 S. Beretania St., Board Room
Attendees:	Wayne Hashiro, Michael Matsuo, Dominic Dias, Brian Mchee, Dean Nakano, Paul Kikuchi, Jason Takaki, Robert Chun, Barry Usagawa, Lambert Yamashita, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave introduction. Lambert gave overview of project.
2. **Comments**
   A. Wayne: If the recommendation is to tunnel following the transit route there are waterlines especially along Farrington Hwy. Also, need to look at affect on hydro geological flows of ground water. (Lambert : A geotechnical study is being done now. Artesian conditions have been identified along the mass transit route.)
   Waiau route would impact wells near the power plant. Tunnels will have impact on flows. (Lambert: Boring are being or have been done to determine potential geological conditions in that area. The preferred tunnel alignment , however, will be closer to Pearl Harbor, which will have a minimum impact on any BWS sources or facilities.)
   Biggest concern is what is being planned at the Honouliuli plant. Will you recycle water? Do you need more land? How much pressure will we (BWS) get from the City Council to develop R-1 water?
   Do I have to look for customers?
   This project will have tremendous impact on what the (BWS) board will do. Will EIS involve what happens at the plant? Preliminarily if the tunnel goes near water lines assume that your tunnel will be deep and therefore won't interfere w/water lines. We don't like "red line route" (along transit) blue route along the locks are ok. (Lambert: Some of your concerns will be covered in the Facilities Plan and the EIS. Some are outside of the project scope.)
   B. Barry: Do you have to dewater to construct the tunnel? (No.)
   If had to dewater, concerned about settlement. (Lambert: With current technology in tunneling, settlement issues should not be a concern.)
   Is there an alternative route along Kamehameha Hwy. in Halawa? (Lambert: No. The only other alternative would be to go under Pearl Harbor, more underwater.)
   C. Wayne: Would prefer you go underwater; you can still drop sewage from pump stations. Lots of development planned in and around that area. (Lambert: Will pose (alternate, underwater route) questions to tunnel experts.)
   Will Facilities Plan include what's planned at Honouliuli? (Yes. Also looking at land acquisition.) (Discussion ensued about BWS plans to purchase Ewa Industrial area parcel and their concern that ENV looking at different areas for purchase.)
   D. Barry: Are you looking at solids and water recycling? (Lambert: We're looking at a Bio Solids pilot at Honouliuli site. Water reuse will be covered in the Facilities Plan)
   E. Lambert: Facilities plan and draft EIS are due in December 2010. (Wayne: Will plan recommend secondary treatment?) (Lambert: Depends on EPA lawsuit with City.)
   F. Wayne: BWS needs to know ultimate disposal plan. It will affect BWS rate studies. Need to work with Dean to determine impacts on the budget. (Lambert: Will coordinate our efforts with Dean.)
   G. Lambert: Who is BWS contact at ENV? (Wayne: Have had no guidance from ENV.)
   H. Wayne: As part of the EIS will you be covering secondary treatment? BWS is just the end user; concerned about (City) Council and what they might mandate via ordinance. (Lambert: FAC Plan is a study of alternatives. EIS will address environmental process and be done parallel with FAC Plan.)
   Our first priority is getting water system back to what it needs to be; first priority is potable water; reuse water is not a priority unless it is mandated by Council. Subscription of reuse water is low. Ultimate disposal has to be identified- don't want to be mandated to provide R-1 water. Our problem is who our users are going to be. (Lambert: Some of your concerns are outside of the project scope.)
   I. Barry: Does your project extend to Wahiawa? (Lambert: No, it ends at Mililani.)
   Are flows to Honouliuli increasing? (Lambert: Yes.)
   Is Sand Island decreasing? (Don't know.)
   How is I/I study progressing? (Lambert: It's in its 5th month.)

J. Dean: What's the current capacity and projected capacity for Honouliuli? (Lambert: Can't recall offhand. I will e-mail info to you.)
K. Lambert: Will schedule future meetings with BWS to respond to concerns touched upon in this meeting.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Feb. 24, 2010
Time:	7:00pm
Place:	Kapolei High School Cafetorium
Attendees:	Makakilo NB members, Community, James Kumagai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Questions/Comments**
   A. Evelyn: Are you dabbling with existing lines or facilities going to Honouliuli now? (James explained current system and deep tunnel system. Study looking into which is most beneficial.)
   If you are 20'-100' down wouldn't it be a nightmare with the water? (James: Currently looking at Pearl Harbor-in discussion with Navy. Also, technology has improved and deep tunneling is not a problem it once was. We are still studying alternatives.)
   In 50 years this new technology will be old and possibly rupture. Why does it need to be by water? Why not inland? (James: Engineering, cost and service levels are keys. We need to consider infrastructure and property issues. Encroachment brings up different problems and we'd like to avoid these issues.)
   All of it has to go to Honouliuli because we have no money to build in Aiea? (James: No. We'd like to take all discharges out of Pearl Harbor and far out into the ocean.)
   Isn't Honouliuli antiquated and not sufficient for what we have now? (James: No, we are looking at the treatment, in particular looking at how we can recover energy from sewage sludge.)
   B. Kioni: Are there pipes inside deep tunnels? (James: No. Looking at deep tunnel – 10-20'.)
   With Rail the tunneling is too expensive. Why is it you'd be able to use deep tunneling? (James: Transportation tunneling is much more extensive. Wastewater tunnels are much smaller.)
   What is the cost? (James: We are looking at revamping existing system vs. new technology and cost looks very close.)
   With water we pay a tremendous amount for sewer. What will this do to our prices for sewer? (James: If we did nothing and just rebuilt existing system it would be very expensive. We must comply with new Federal regulations and are doing a cost comparison.)
   With deep tunnel system would there be problems with water seepage? (James: Technology in deep tunnel system utilizes cement, plastic liners which are in place in several locations around the world. Life of tunnel suggested to be 150 years.)
   C. Troy: Besides funding how is this project impacting Makakilo and Kapolei? (Linda: Other than funding there is no direct impact. Tunneling is deep so there is no disruption on surface only at shaft areas where machinery goes in and out.)
   D. Jack: Is there a central pumping station where the deep tunnel is connected? (James: Explained how current system operates. The deep tunnel system would eliminate existing pump stations.)
   Is maintenance less since maintaining only one treatment center? (James: Yes. We see it as a simple and reliable system.)
   Why to Honouliuli? Will you be studying building other treatment centers? (Linda: Building another treatment center is not part of the study. Looking at upgrades to Honouliuli and alternatives.)
   What is the capacity basis? (Linda: 2030.)
   Are you looking at other homes being built? (Linda: Yes. We looked at the Rail EIS to calculate future growth and capacity.)
   What was the issue about discharge of Honouliuli into the ocean? (James: Explained Federal regulation of secondary treatment vs. our wastewater management system.)
   E. Linda Young: A line was installed in Kapolei for movement of petroleum. Is this similar to deep tunneling? (James: You may be describing micro tunneling. Same idea, but the scale of deep tunnel system is different.)
   F. Maeda: There are huge pipes in Kalaeloa Harbor where petroleum gets pumped. Is this a closer comparison? (James: Yes. Technology has improved. In the last 10-20 years this technology has been proven to work.)
   Who do we contact for questions? (Linda: Rosehill & Assoc., gave phone number and website address.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, February 10, 2010
Time:	9:30am
Place:	Kalanimoku Bldg. Conference Room 430
Attendees:	Eric Nishimoto, Ernest Lau, Ralph Morita, Jeremy Koch, Lambert Yamashita, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Jeremy and Lambert gave project overview.
2. **Questions/Comments**
   A. Ralph: Collector upgrade? Are you upgrading the sewage treatment plant? (Yes.)
   B. Ernest: Stadium – underground or above ground? (Underground.)
      1. You'll be in water tables which you'll have to deal with. (Jeremy explained tunnel boring.)
      2. Have you talked with Board of Water Supply? (Meeting scheduled in March.)
      3. Slurry? (Jeremy – new technology may likely not need slurry.)
      4. Are you going under residential? (No.)
   C. Ralph: When will project be finished? (Start 8-10 years out.)
   D. Ernest: Will you have access area to tunnels? (Yes to put in and withdraw drilling machinery and for maintenance.)
   E. Eric: Did the pre-assessment notice come to us? (Yes.)
   F. Comptroller in discussions with Fed to lift use restrictions on property. Understand there is a moratorium; would this project relax restrictions?
   G. Ralph was with Health Dept. and inspected Honouliuli. Had discussion about future development and capacity of project. Right now don't have any upcoming big projects in Waipahu/Pearl City area; only Kapolei judiciary may have expansion project because of limited funding. Stadium might be some expansion to expand commercial redevelopment of stadium. Halawa's prison expansion curtailed partly because of sewer capacity. Within 20-30 years time frame prison or other projects could arise.
   H. Lambert: Who do we talk with re: prison expansion? (Ralph has master plan. DAGS handles the public works project for all state agencies.)
   Looking and identifying any and all potential building projects that could occur in 20-30 years times frame.
   I. Ralph: Is timing of project concurrent with mass transit? (Mass transit will probably precede the sewer project.)
   At stadium, will work be underground? (Yes. Need to do odor control; tank would take over a year to build.)
   J. Ernest: Will talk with comptroller to find out who the contact with Federal Government is so you can talk with them directly.
   Did Scott Chan of Stadium Authority tell you about land use restrictions? (Yes.)
   K. Lambert will re-send pre-notification letter with attachments. (Ernest didn't recall receiving it.)
   L. Ralph provided the prison master plan to Lambert.

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MEETING NOTES

HONOULIULI/WAIPAHU/PEARL CITY FACILITIES PLAN

Date: Wednesday, February 03, 2010
Time: 9:00 am – 9:30 am
Place: HECO Waiau Power Plant
Attendees: Daryl Kogasaka, Noreen Takeshita, Jeremy Koch, Trudy Hamic

Contract No.: SC-ENV 0700097
Job No.: 60041627

Purpose: Waiau Power Plant Site Visit

DISCUSSION ITEMS

1. (AECOM) How deep are the sheet piles? (HECO) Guessing approximately 30 ft deep, will double check.
2. (AECOM) Can we get a copy of the long sheet pile plans? (HECO) Was it in the plans sent previously? (AECOM) No, only the small sheet pile plans were in the set. (HECO) We will look for the long sheet pile plans.
3. (HECO) There was a fuel line that enters Pearl Harbor; not sure if the fuel line has been abandoned or removed. Will check.
4. (AECOM) Are these alignments better? (HECO) Yes.
5. (HECO) There are plans to redo the smaller sheet pile in 2011, but after permitting construction will probably start in 2012. They are assuming that the sheet piles will be at the same depth. Currently there are no plans to redo the long sheet piles.
6. (AECOM) What utilities cross the bike path? (HECO) How deep will the tunnel be under the bike path? (AECOM) Approximately 50 feet. (HECO) May hit rock. One of the buildings hit rock. (AECOM) Any geotech information on the depth of rock is appreciated.
7. (AECOM) We are planning a boring in the water, should we let HECO know when we start? (HECO) Yes, how deep will you bore? (AECOM) Approximately 100 ft. Boring will start in approximately 6 months due to permitting. (HECO) You have a chance of finding oil or left over product in old fuel line.
8. (AECOM) Do you have any depth measurements in Pearl Harbor? (HECO) Several years ago depth measurements were done, but we don't know the results. We will ask about the bathymetric information.
9. (AECOM) Who should we follow up with? (HECO) Noreen.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date: Tuesday, Jan. 19, 2010

Time: 7:00pm

Place: Mililani Mauka Elementary School
95-1111 Makaikai St.

Attendees: Mililani Mauka/Launani Valley Neighborhood Board members, Community members, Lambert Yamashita, Jeremy Koch, Linda Rosehill

Distribution: Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Cwens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth

Contract No.: SC-ENV 0700097
Job No.: 60041627

Purpose: Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Jeremy and Lambert gave project overview.
2. **Questions/Comments**
   A. Dave Ellis: Who pays for increase of wastewater capacity for development? (Lambert responded.) Does study take into account proposed Koa Ridge & Waiawa developments? (Yes, all developments/mass transit that have been identified.)
   B. Dean Hazama: What are the advantages/disadvantages of mass transit route for the wastewater project? (Lambert explained the advantages/disadvantages of each route.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, Jan. 14, 2010
Time:	7:00pm
Place:	Aliamanu Middle School 3271 Salt Lake Blvd.
Attendees:	Aliamanu/Salt Lake/Foster Village Neighborhood Board members, Community members, Lambert Yamashita, Jeremy Koch, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Lambert gave project overview.
2. **Questions/Comments**
   A. No questions were asked.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Jan. 13, 2010
Time:	2:00pm
Place:	Kalanimoku Building, Room 430
Attendees:	Heidi Meeker (Land Use Planner), Roy Ikeda (Facilities Specialist), Duane Kashiwai Public Works Administrator), Rae Loui, Jeremy Koch, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Rae & Jeremy gave overview of project.
2. **Questions/Comments**
   A. Jeremy focused on area around Pearl City Pump Station because of its proximity to Lehua School. Was looking at storage tank in the area; more recent modeling shows storage at that site is not needed.
   B. Duane: If I had a choice would rather have a tunnel than pump station. There is a tunnel easement at Makalapa School for fuel lines. See no issue if tunnel crosses areas where there are no buildings (playground area)
   C. Jeremy: There is an odor issue at the pump station. Will be looking at aesthetics, odor control in study.
   D. Duane: Timetable for project? (Engineering report will be done by end of March. Total project 2 years).
   E. Rae: Is it military land in that area? What are the plans for school? (Duane: No plans to move/change school. Some military in area, elections office under freeway. If you look at redesign of pump station, will look at impacts on school).
   F. Rae: Any extra land on school grounds?
   G. Heidi: Why the school and not the park?
      1. Rae: What park? (Duane: School shares area with park. Duane showed map of school area. Whole peninsula floods. Whole school is on City owned land; park and school is one parcel).
   H. Jeremy: Who do we work with when ready to discuss alternatives? (Duane: Send info to Heidi).
   I. Heidi: What is the square footage of pump station? (Jeremy: About ½ acre).
   J. Follow up:
      1. Need to meet with Park Dept. and Design and Construction about Lehua Shool and park area.
      2. Linda: Need to go back and check database of affected properties to see if any other school impacted.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Monday, Jan. 11, 2010
Time:	7:30pm
Place:	Aiea Library 99-143 Moanalua Road
Attendees:	Aiea Neighborhood Board members, Community members, Lambert Yamashita, Jeremy Koch, Trudy Hamic, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Jeremy and Lambert gave project overview.
2. **Questions/Comments**
   A. Ron Mobley: If the tunnel is blocked (obstruction in tunnel) will tunnel be able to handle overflow and/or blockage during heavy rains? (Yes, there will be areas that personnel can go into tunnel to prevent obstructions and the purpose of the tunnel is to handle the overflow.)
   B. David Arakawa: Where is area covered by EIS? How long will project take? (Lambert and Trudy responded. The entire project area that is impacted by the subject project will be covered by the EIS documents. This study, which was started in August 2009, will last a little over 2 years.)
      (Note: FYI there will be EIS legislation introduced to require EIS every seven years. Need to be aware of it and be ready to commit.)
   C. William Clark: Asked about timetable/deadlines. (Trudy responded. A Final Environmental Assessment/Environmental Impact Statement Prep. Notice (EA/EISPN) will be released around April 2010 and a Draft EIS will be released around December 2010. During the May/June 2010 time frame, Update Meetings with each of the Neighborhood Boards will be scheduled.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Friday, Dec. 18, 2009
Time:	10:00am
Place:	Coral Creek Golf Course
Attendees:	Kyun Kim, Gaylene Taparello (Mr. Kim's Asst.) Lambert Yamashita, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Lambert & Linda gave overview.
2. **Comments**
   A. Gayleen: Is existing force main underground? (Not all.) How old? (About 25 years.) Most concerned about middle route through Coral Creek.
   B. Kyun: What will happen with golf course? (TBM underground should not have surface impact.) Lambert explained tunneling process and showed work to be done on map.
   C. Lambert: City would ask for a subsurface easement. Middle alignment already about 50' below surface grade.
   D. Kyun: Expressed concern about middle alignment going through private property; had no concern about other routes. He was also interested in the depth of the proposed tunnel relative to the existing grades of the golf course, particularly in the low lying areas. (Lambert explained possible alternatives and possible pros and cons. With further discussion, it was determined that the proposed tunnel would be at a depth that would be much deeper than the lowest lying areas of the golf course. My Kyun appeared satisfied with this condition.)
   E. Kyun: Given that route is deep underground shouldn't matter to Coral Creek; don't see any problems but will give info to owner of golf course in Korea.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Dec. 16, 2009
Time:	2:30pm
Place:	AECOM Conference Room
Attendees:	Ming-Yang Tan, Scott Chan, Lambert Yamashita, Jeremy Koch, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Lambert gave overview of project.
2. **Questions/Comments**
   A. Lambert: Looking for 2 acres near stadium pump station for 40' diameter shaft; requires large equipment for tunneling; looking at needing the site for several months. (Ming: Would require work to be done during off season; about 5 months available from end of March to late August.
      1. Great Aloha Run is in March and requires use of the parking lot.
      2. 50th State Fair is during the off season as well
      3. Military uses the parking lot for overflow parking/staging area for some of their events.
      4. The off season usually has car shows and swap meets.

   B. Linda: Have you had any complaints from surrounding neighbors about your events? (Ming: Usually complaints are about noise and traffic congestion.)
   C. Ming: Would you require additional easements? (Jeremy: Looking at 3 dimensional envelope around the pipe type easement.)
   D. Ming: DLNR owns the land at the stadium. Stadium Authority has management jurisdiction however have been working through DAGS/Comptroller for mass transit project. Also are working on a master plan for the stadium. The site has a deed restriction – 52 acres to be used for recreation; the comproller has been working with the Federal Parks to lift the deed restriction. For the mass transit project the state provided a de minimus finding for the EIS in order to meet the deed restriction.
      1. Ming also noted that there are a number of fuel lines near the stadium. He provided 2 maps.
         a. Showed proposed mass transit alignment.
         b. Showed stadium infrastructure.
   E. Scott: Concerned about the impact on stadium events; the football season, fall period would be impossible to accommodate project. Currently use Kam Drive Inn (1200 cars), Radford H.S. (500 cars) and Leeward CC (unlimited cars) for overflow parking. Scott suggested we brief Russ Saito, Comptroller at DAGS and the Stadium Authority, Kevin Chong Kee is Chair.
   F. It was also suggested that during such construction the contractor be prepared with a backup plan to accommodate parking and transportation of stadium visitors in the event that construction is not completed during the agreed upon time frame.
3. **Follow up**
   A. Need to arrange meeting with Russ Saito. (He will help arrange subsequent meeting with Stadium Authority.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Dec. 16, 2009
Time:	10:00am
Place:	DLNR Kalanimoku Building
Attendees:	Dar Ariola, Barry Cheung, Morris Atta, Nancy McMahon, Keith Chun, Sam Lemmo, Lambert Yamashita, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Lambert gave technical (in layman terms) overview of project.
2. **Questions/Concerns**
   A. Morris/Sam: There will be a CDUP (Conservation District Use Permit) issue going under Pearl Harbor. The question arose as to whether the CDUP process is applicable to subterranean areas. DLNR has taken the position in the past that it does.
   B. Nancy: Pearl Harbor area is part of National Historic Landmark Program; the National Parks Services has jurisdiction.
   C. Morris: Will tunneling have an impact on aquifer? (Lambert: Geotech is doing drilling along routes to determine; so far have not encountered artesian conditions, however, some of the areas are known to have this condition.)
   D. Nancy: Recently toured Navy's Red Hill fuel storage facility. Tunnels have pumps running continuously to keep areas dry; might also need pumps to prevent seepage.
      1. Linda asked whether there would be issues with tunnel under the railway. (Nancy: DLNR & DOT are having problems with the railway society; as long as there is no displacement of the railway it shouldn't be a problem.
   E. Morris: Overall the sewer project doesn't seem to impact any state land projects that are ongoing.
   F. DOFAW (Dept. of Forestry & Wildlife): Issues will be similar to any raised by Federal Forest & Wildlife agency.
   G. Nancy: What will you do with the spoils to tunneling? Cited Navy tunneling wherein spoils were used to "fill in fishpond" which would not be permissible today. (Study will address spoils disposal.)
   H. Linda asked that info be passed on to any other division within DLNR that might be impacted. Also if there are any other agencies that we should meet with please let us know. Will keep them abreast as project moves forward.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Nov. 24, 2009
Time:	6:30pm
Place:	Pearl City Neighborhood Board meeting Waiau District Park 98-1650 Kaahumanu St.
Attendees:	Pearl City NB members (Chris Lum Lee chaired meeting), Community members, Jeremy Koch, James Kumagai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Jeremy gave briefing.
2. **Questions/Comments**
   1. Myrtle Nyuha: Is this the beginning? Who do we keep in contact with? (Linda Rosehill gave card to keep in touch.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Nov. 24, 2009
Time:	9:00am
Place:	DOT Oahu District Office 727 Kakoi St.
Attendees:	Dean Yogi, Scot Urada, Pratt Kinimaka, George Abcede, Jeremy Koch, Rae Loui, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Discuss concerns regarding easements and/or coordination w/DOT

Discussion Items:

1. **Project Description**
   A. Jeremy gave overview.
2. **Comments**
   A. Scot:
   1 Do you have an idea of construction schedule? (Construction is 5-10 years out; too early to tell.)
   2. Rail route – depth of pilings; traffic pose concerns.
   3. Concerned about traffic impact therefore would need info on construction schedule.
   4. You will need dewatering areas.
   B. Jeremy: Are there any available area for staging/shaft area? Need about 4 acre site. (DOT: Have allowed use of construction staging area under clover leaf highway areas.)
   C. George: Is this project timed with rail? Would hate to see rail using the ROW, then this project goes in using the same ROW. 30-40 ft. shaft will cause concerns regarding traffic. Biggest impact is truck traffic. (Shafts will be off the roadway and truck traffic can be controlled by using non peak hours.)
      1. DOT: Most concerned with upper route where DOT right-of-way exists.
      2. DOT: You are most interested in:
         a. Future project 5-10 years time frame in area that might impact project.
         b. Use and occupancy agreements/rights-of-way
   D. Dean: Master agreement might be useful because it's such a big project. Should look at Chapter 19, there's a policy about going longitudinal in right-of-way not sure about whether government is exempt. Use & occupancy agreement would detail use in State right-of-ways if goes through H1/H2, any interstate arterials need Federal Highways approval if just crossing; less of problem then if longitudinal. Trying to get master agreement with major utilities: BWS, HECO and government agencies.
   E. Scott: Will run project by planning branch – have better info on future projects.
   F. DOT:
      1. Should ask Harbors about their subsurface easement
      2. City also did a drill shaft easement
      3. Don't know what kind of maintenance issues might arise.
   G. Pratt:
      1. Is there a lead at City? (Jack Pobuk.)
      2. How long is construction? (About a year underground; upfront time longer.)
   H. Dean: Any abandoned lines? (If tunnel, potential for force mains to be abandoned in place.)
   I. Linda: Is there one DOT contact? (Scott will get back to Linda.)
   J. What is internal deadline for EISPN? (Beginning of Feb.)
   K. Pratt: There's a lot of commonality with 3 projects: Kailua, Sand Island, Honouliuli; City should coordinate effect. Would be good if City person was present; good to have early meeting.
   L. Linda: Gave public education/outreach overview.
   M. Dean: Should meet with Tom Miyata. (Already have.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, Nov. 19, 2009
Time:	7:00pm
Place:	Filipino Community Center 94-428 Mokuola St.
Attendees:	Waipahu Neighborhood Board members, Community members, Jeremy Koch, James Kumagai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   - A. Jeremy gave briefing.
2. **Questions/Comments**
   - A. Edmund Alfonso:
     1. Is this study park of EPA consent decree? (Yes.)
   - B. Illalo Parayno:
     1. In reference to tunneling and renovation of current system, when you say "alternative" does that mean one or the other; or can it be a combination? (The studies will determine, it could be a combination of alternatives.)
     2. Who's going to pay for this? (Study will determine costs.)
     3. What are the sources of funding? (The City will decide.)
     4. Will there be any disruptions to traffic? (The tunnel alternative has little surface disruption.)
     5. Will you factor in citizen participation? (Yes.)
   - C. Chuck Wheatley:
     1. Would like to know exact route; his church is building a new church in the area near Kahi Mohala and the horse stables. (Linda will get back to him.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Nov. 17, 2009
Time:	2:00pm
Place:	State Capitol, Room 419
Attendees:	Representative Ryan Yamane, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Gregory Heath
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   - A. Linda gave overview of project.
2. **Questions/Comments**
   - A. Yamane: Had concerns regarding tunneling into the water table and "seepage". Said there are areas near wetlands in Ewa where water bubbles up through the dirt. Wondered how tunneling would affect this "seepage".
   - B. Yamane: Is very interested in wastewater issues; is knowledgeable about EPA consent decree and has met with both mainland and local EPA officials. Wants to be kept informed.
   - C. Yamane: Acknowledged that Honouliuli needs to be improved and expanded.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date: Tuesday, Nov. 17, 2009

Time: 3:30pm

Place: Hawaii Farm Bureau office
2343 Rose St.

Attendees: Ann Yamamoto, Brian Miyamoto, James Kumagai, Linda Rosehill

Distribution: Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Gregory Heath

Contract No.: SC-ENV 0700097
Job No.: 60041627

Purpose: Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview.
2. **Questions/Comments**
   A. James: Asked for assistance identifying farms along the designed routes. (Brian: Know of 3 watercress farms in the area that rely on artesian spring flows: Sumida, Kobayashi and Nakatani- all are Farm Bureau members.)
   B. Ann, Brian: Recommended we work with the South Oahu County Farm Bureau- Pres. Doug Luka, VP Gilbert Araki. Ann will contact them and let them know about this project and have them contact Linda.
   C. Ann: Other possible contacts – Oahu Farm Bureau, Yuki Kitagawa, Jimmy Nakatani (cell: 224-8473).

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date: Tuesday, Nov. 10, 2009

Time: 2:45pm

Place: State Capitol, Room 306

Attendees: Representative Marcus Oshiro and Staff, Linda Rosehill

Distribution: Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth

Contract No.: SC-ENV 0700097
Job No.: 60041627

Purpose: Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of the project.
2. **Questions/Concerns**
   A. Oshiro: No questions.
   B. Staff: What is the cost? (Study will determine.)
   C. Staff: How will it be paid for? (Study will look into alternatives. City to determine.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Nov. 4, 2009
Time:	10:00am
Place:	NAVFAC, Hawaii Compound
Attendees:	Patricia Colemon, John Muraoka, Lambert Yamashita, Jeremy Koch, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Jeremy gave overview of project.
2. **Questions/Comments**
   A. Can John and Patti get a copy of the map? (Yes once the map has been developed further and released for comment, approximately December time frame.)
   B. Will the City be the proponent for the project? (Yes.)
   C. John: Is the tunnel technology new? (No, has been used for years outside of Hawaii; referred them to the Brightwater website.)
   D. John: How do you tunnel: (Lambert explained the tunneling process in layman terms.)
   E. John: What about hitting the water table? (Lambert: Tunneling has been done in other areas with water.)
   F. John: Timing? (Lambert explained 2 year study; actual construction 5-10 years out.)
   G. John, Patti: Pointed out potential areas of concern:
      1. Wetland area near Pearl City Pump Station (need to meet with Fish & Wildlife; Megan Laut may be able to help.)
      2. Wetland area long Ewa route – they will find out who controls area.
   H. Linda: Will make sure they get info on future public meetings. Need to put John & Patti on Trudy's EISPN list.
   I. Patti: Will they be designated a "cooperating agency" like with rail project? (Not sure what cooperating agency agreement entailed; need to check on this with rail.)
   J. Patti: They likely would be more involved with this project than rail since this project involves Navy land. They would be involved with planning and Patti, in the NEPA process.
   K. Patti to follow up on getting contact info on John Muraoka and organizational chart.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Oct. 7, 2009
Time:	9:30am
Place:	DOH, Environmental Management Division 919 Ala Moana Blvd., Room 301
Attendees:	Clean Water Branch: Michael Tsuji, Jamie Tanimoto, Libby Stoddard, Joanna Seto. Wastewater Branch: Sina Pruder. Rae Loui, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Rae gave overview of project.
2. **Questions/Comments**
   A. Jamie: What is the name of the project? (Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan.)
   B. Libby: How do you select the discount rate on various alternatives (when looking at cost of project)? (Rae: That is to be determined in the study however, other factors besides cost also are considered i.e., life of tunnel is at 150 yrs.)
   C. Libby: Where is the dual force mains? Is Waimalu to be upgraded since it has only a single force main? (Rae: We're not as familiar with the force mains. Would have to check.)
   D. Jamie: Does this study all tie into Honouliuli upgrades? To secondary treatment? (This is a part of the scope of the study. Linda described other ongoing studies i.e., Kailua & Sand Island.)
      1. Jamie: Who are the other teams? (Brown & Caldwell & Wilson Okamoto – Kailua, Kaneohe. Towill and Ralph Parsons – Sand Island.)
   E. Linda described the Geotech drilling that should be starting in the next couple weeks.
      1. Rail project which also uses Geotech as its contractor got in trouble with its drilling. They have been given a verbal reprimand and DOH is preparing a written violation to be issued soon. DOH looks at the larger common plan of development, therefore geotechnical drilling is considered a phase of the larger project and requires an NPDES permit. If total drilling area including staging is more than one acre the permit requirement is triggered.
      2. Best management practice should be in place; earlier Geotech also had a project with 8' diameter drilling which discharged into a stream. Its subcontractor did not use best management practices.
      3. Geotech has a history of "bad behavior". Discharge of drilling effluent should be to retention area on land; evaporation basin. Well drilling permit takes 180 days; a general permit is fast.
   F. Libby: She/SSFM was involved in a force main study when at the city in mid 1990s; that might be helpful.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, Oct. 29, 2009
Time:	12:30pm
Place:	State Capitol, Room 403
Attendees:	Representative Karen Awana, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Questions/Comments**
   A. Awana: Questioned capacity-whether it will take into account Waiawa, Ewa and rail growth? (Yes.)
      1. Awana: People will be concerned about capacity especially those who don't want more growth in the Leeward area.
   B. Linda mentioned the Makakilo NB meeting in Jan. Awana will attend.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Friday, Oct. 23, 2009
Time:	11:00am
Place:	State Capitol, Room 442
Attendees:	Representative Rida Cabanilla, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview.
2. **Questions/Concerns**
   A. Cabanilla: Asked about the cost of the study and questioned whether the city could afford costly infrastructure projects? (Linda will check on cost.)
   B. Cabanilla: Thought the sewer charges were already too high.
   C. Cabanilla: Asked about gray water reuse; city had testified against a bill last session. The bill was limited to Kahana Valley and was looking at making gray water reuse applicable statewide via bill this session.
   D. Cabanilla: Is anti-growth - would rather not see growth in Ewa or along the transit routes.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Friday, Oct. 23, 2009
Time:	9:30am
Place:	Zippy's Vineyard
Attendees:	Dean Hazama, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview.
2. **Questions/Concerns**
   A. Hazama: Will the capacity handle future growth? (Yes, used population number from Transit EIS.)
   B. Hazama: How does project tie in with EPA consent decree? (Address some of the issues raised by EPA.)
   C. Hazama: Will be scheduled on January agenda; NB meets 3rd Tues. at 7:00pm at Mililani Mauka Elem. School.
      1. Handouts ok.
      2. There will also be a church group requesting support for a CUP permit also on the January agenda.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, Oct. 22, 2009
Time:	10:00am
Place:	City Municipal Bldg., 12th floor 650 So. King Street
Attendees:	Tom Miyata-Dept. of Design & Construction, Land Division, James Kumagai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Jimmy gave overview of project.
2. **Questions/Comments**
   A. Jimmy: If the tunnel is 100' underground is there a payment for an easement? (Tom: Technically the legal answer is yes.)
      1. If the easement is through residential property the fee is normally about 15% of the appraised value. Commercial property is more involved. It can lead to messy negotiation over compensation. A perpetual easement specifies access for maintenance; if an extraordinary problem occurs; a construction easement can be obtained at the time the need occurs.
      2. Tom will talk with Corp. Counsel as this is an unusual circumstance due to the depth of the tunnel; normal easement is 6-10'; the tunnel will require a larger easement.

   B. Jimmy: What will be allowed over the easement? (Tom: Need to talk with other City departments.)
   C. Tom: If the easement is on a highway corridor State DOT provides a use and occupancy agreement at no cost; Feds have not asked for compensation but you do pay a processing fee.
      1. Jimmy: One option is to follow the transit route. (Tom: Transit linehas a use and occupancy agreement from the State. Would need a different document for each use i.e., highway, sewer, drainage, etc.)

   D. Tom: Don't have to get easement until the design stage. Navy and private land requires easement; State-use agreement. As long as the tunnel does not impact the use of the property try to go with a nominal fee.
      1. Linda: Do we need to get Council approval of easements? (Tom: No. Once the council approves the project easements are also approved. Not sure at what point in tunneling that compensation would be required; at 20' below, compensation will most likely be required; at 100' under payment should be nominal. However, can't guarantee that problems won't occur. Worst case scenario is a cave in; city would likely indemnify the property owner and provide compensation. What can be built on the property would likely determine the level of compensation.

   E. Jimmy: Wanted to alert you that we'll need your assistance with the easement issues.
   F. Jimmy: Does city own property at Pearl City Pump Station? (Tom: Need to check ownership and legal arrangement. Land originally belonged to the Navy.)
   G. Jimmy: Will need to move Pearl City Pump Station because it is located in a flood zone. What about Lehua School? (Tom: City has title; but property is controlled by DOE.)
   H. Jimmy: Who owns the land surrounding the Waipahu Pump Station? (Tom: Ash disposal site owned by City and partly by Navy.)
   I. Jimmy: Soccer field? (Tom: Navy has title; city has lease.)
   J. Tom: DDC does all the acquisitions of land for the City – Navy, private and State.
   K. When working with the Navy, some decisions can be made locally however, some require congressional/mainland approval.
   L. Jimmy: What is the situation with the Navy blast zone? (Tom: Navy doesn't allow construction above ground but guessing that the underground use shouldn't be a problem. Compensation is not always the main issue: indemnification can be critical.
   M. Jimmy: Is it ok to go directly to you (Tom) for easement/land acquisition issues? (Tom: Yes. Good to have early notice of upcoming projects, issues.)
   N. Tom: Because of rail transit DDC is very busy, also dealing with issues related to the EPA consent decree.
   O. Jimmy: Is Blaisdell Park city owned? (Yes). Stadium parking lot (State). Makalena (City).

P. Tom: City looking at property arcund Honouliuli for acquisition for future expansion. There is a parcel that is leased to private developer for housing but no known activity there. Will look at who owns surrounding properties and whether leases exist. Most of Kalaeloa under HCDA jurisdiction.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Oct. 21, 2009
Time:	2:30pm
Place:	State Capitol, Room 316
Attendees:	Representative Glenn Wakai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Questions/Comments**
   A. Wakai: Asked about cost? (Study to determine.)
   B. Wakai: Happy the city was planning ahead especially after the Ala Wai incident.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Oct. 21, 2009
Time:	1:30pm
Place:	State Capitol, Room 438
Attendees:	Representative Sharon Har, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Questions/Comments**
   A. Har: Shared Insights on NB
      1. Waipahu NB: George Yakowenko is the new Chair; Richard Oshiro had been Chair for many years previously.
         Huge NB; usually pretty easy to work with. Should do a straightforward presentation; should have no problems with Q & A.
      2. Kapolei NB: Maeda Timson doesn't have full control over the board. Kioni Dudley can be a concern; he created Friends of Makakilo and has taken lead opposing Hoopili but, shouldn't have problem with this project. Jack Legal (ran against Sharon Har) close to Kioni. Evelyn Souza - Vice Chair has always been especially interested in water issues; concerned about aquifer contamination; adequacy of water given the growth in the area. She has followed the city's EPA issues. Har advised I should meet with Souza prior to the NB meeting to ferret out any concerns she might have; should let Maeda Timson know before setting up meeting.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Oct. 21, 2009
Time:	11:30am
Place:	Assagio Mililani
Attendees:	Richard Poirier, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Questions/Comments**
   A. Poirier: Gave info on what to expect at NB meeting.
      1. 10 min. presentation
      2. Q & A as long as necessary
      3. Power point better way to go; have pull down screen; all meetings on TV.
      4. If want support down the line let them know i.e., resolution.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Oct. 20, 2009
Time:	1:30pm
Place:	City & County Municipal Bldg., 3rd floor
Attendees:	Wayne Yoshioka-Director DTS, Richard Torres-Design-Build Mgr. DTS, Lambert Yamashita, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Questions/Concerns**
   A. Lambert had questions regarding possible coordination between the transit and sewer projects.
      1. Is it possible for joint use of the Banana Patch area for both projects? Looking for about a 3 acre parcel for a staging/shaft area for deep tunneling; understand that transit will be using the Banana Patch area. (Richard: Believes Corp of Engineers has jurisdiction over Banana Patch area.)

   B. Richard: Described the geotechnical borings done for transit.
      1. First boring at the Hoopili Station site: dry soil. 2nd boring near the Waipahu Transit center site: water table at 11' below surface; hit artesian at 92.5'.
      2. Lambert thanked Wayne for providing the transit boring information. Files were received from Geolabs upon receiving OK from DTS/PB America.
      3. Lambert stated that the selection of the type of boring machine is dependent on the type of soil and/or rock to be encountered.

   C. Transit pilings and columns were discussed; transit columns will be 100' deep. Areas where transit crosses the highways require 2 columns cantilevered, deeper than 100'.
   D. Wayne asked where the tunnel would be placed along Kamehameha Hwy; transit will be down the center. (Lambert explained the tunneling process and engineering; reiterated that there was a need to identify potential shaft and staging areas; need about 3 acres.)
   E. Lambert requested geotechnical baseline reports authored by PB America. (Richard said final boring reports will be out shortly; Wayne said that they will forward the baseline reports as well as the final boring reports when available.)
   F. Discussed outreach in Banana Patch area. Wayne expects record of decision in December at which time the city can proceed with condemnation of Banana Patch properties. He was aware that the property owners were already doing appraisals. He advised that it might be better to wait until after the condemnation proceedings and deal directly with the city rather than the various property owners at Banana Patch.
   G. Lambert pointed out various potential routes around Honouliuli; also pointed out railway route. Wayne pointed out that their railway has a historic designation and therefore must work with SHPDA at DLNR. However, since the tunnel would be deep underground with no surface impact it might not be a problem.
   H. We will continue to coordinate with DTS/transit as the project evolves.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Friday, Oct. 16, 2009
Time:	11:30am
Place:	State Capitol, Room 434
Attendees:	Representative Marilyn Lee, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project and explained that Mililani's sewage goes through Waipahu.
2. **Questions/Comments**
   A. Lee: Noted that they had had issues with odor problems in the past; particularly when North Shore sewage was being transported to Mililani to be emptied at the Mililani pump station. However, the city stopped that practice and she is not aware of any recent problems.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Friday, Oct. 16, 2009
Time:	11:00am
Place:	State Capitol, Room 202
Attendees:	Senator Robert Bunda, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project and explained that Mililani's sewage goes through Waipahu.
2. **Questions/Comments**
   A. Bunda: Appreciated being kept apprised; had no questions.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Friday, Oct. 16, 2009
Time:	10:00am
Place:	Honolulu Hale, 4th floor
Attendees:	Joan Manke, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project and discussed process at Neighborhood Board.
2. **Questions/Comments**
   A. Linda: We will keep her apprised so that Joan can coordinate with Mayor's representatives at Neighborhood Board meetings.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, Oct. 15, 2009
Time:	5:00pm
Place:	State Capitol, Room 203
Attendees:	Senator Michelle Kidani, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Questions/Comments**
   A. Kidani: Why is Mililani included in outreach? (Mililani sewage is pumped through Waipahu.
      1. Kidani: Constituents would be concerned about two things – traffic disruption, if any and odor.

   B. Kidani: Do environmental groups i.e., Sierra Club support tunneling? (We have not met with any environmental groups because of the consent degree/lawsuits – will meet with them when city gives go ahead.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, Oct. 15, 2009
Time:	1:30pm
Place:	State Capitol, Room 333
Attendees:	Representative Kymberly Pine, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Questions/Comments**
   A. Pine: Her district is very mixed; with locals in old plantation type homes and newer areas with more intellectual, Caucasian people
      1. Older, local group will ask about traffic. How will project affect their homes? Will tunneling shift their foundation or shake the ground?
      2. The intellectual, Caucasian group tends to be very vocal but don't usually participate through the NB process since they see the NB as being purely advisory. They will want to know how long work will occur in their area?

   B. Pine: Biggest concern will be smell/odors from Honouliuli. They will question whether odor will increase with increased capacity, particularly Hoakalei area with more expensive houses that border Honouliuli.

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MEETING MINUTES

HONOULIULI/WAIPAHU/PEARL CITY FACILITIES PLAN
DISCUSSION OF NAVY COORDINATION ISSUES

Date: Friday, October 2, 2009
Time: 10:00 am
Place: NAVFAC Hawaii Compound, Building 55 Conference Room

Attendees: CDR Lore Aguayo, Orrin Wong, Craig Miyachi, Norm Glenn, Lynn Tanaka, Aaron Poentis, Ross Tanimoto, Jack Pobuk, Markus Owens, Hal Barnes, Linda Rosehill, Rae Loui, Lambert Yamashita, Jeremy Koch

Contract No.:SC-ENV 0700097
Job No.: 60041627

Purpose: Discussion of coordination between CCH, Navy and AECOM

Discussion Items:

1. **Discussion**
   - A Ross - provided a general overview of the tunnel aspect of the project and the positive aspects that the tunnel could have over the existing pump station and force main conveyance system currently being used.
   - B Lore - would like to be provided with a project fact sheet that has a project description, key points and anticipated timeline.
   - C Lore – Who will be the primary point of contact for communication from the project team? (Linda Rosehill)
   - D Rae - discussed the fact that the tunnel is only one of the options being investigated.
     1. Provided a general overview of the existing collection system configuration and operation.
     2. Sizes and alignments of the tunnel system are still in the study phase
     3. The tunnel would allow problem areas such as the Pearl City Pump Station to be eliminated.
     4. The Pearl City Pump Station is currently on Navy property
   - E It appears a portion of one of the tunnel alignment alternatives goes through a protected wildlife area. How would this be addressed? (The tunnel alignment would need to be altered to avoid these issues or sufficient means provided to minimize impacts from underground tunneling activities.)
   - F How would the existing Navy sanitary sewer system be affected by a tunnel alternative? (It would be the responsibility of CCH to reconnect any existing collection system sewers.)
   - G How is the existing utility tunnel near the Halawa/Stadium shaft area and boring no. 11 being taken into account during planning and field work? (The location of the tunnel is being investigated and will be avoided during geotechnical borings.)
   - H The Navy has just completed a 65ft deep horizontal directional drill pipeline under West Loch to accommodate the depth required for dredging and ship traffic.
   - I Special permissions and permits are required for working within the specified blast zones.
   - J What liability if any does the Navy have for sewage spills? (CCH has the primary responsibility for preventing and responding to sewage spills. Navy is only responsible as a land owner to clean up if CCH is not responsive.)
   - K Lambert – provided overview of the ongoing work for the force main assessment work within the easements located on Navy property. Discussed permitting and access issues related to this work.
   - L Hal – inquired as to how/who is to be dealt with regarding the wildlife areas. (These areas fall under the jurisdiction of the US Fish and Wildlife but NAVFAC has their own fish and wildlife person, Patricia Coleman, who would most likely be the contact.) Navy raised the risk of "cave-in" during tunneling. Expressed concern of potential impact to wildlife area; should avoid wildlife area is possible.
   - M Jack – discussed the alternative of providing storage tanks at the pump stations, relocation of the Pearl City pump station out of the flood zone and installation of a third force main through Navy property.
   - N Lore – If the tunnel alternative is not chosen will a third force main be required? (Possibly)
   - O Norm – indicated that the Navy and CCH have had difficulties working together on past projects. On some previous projects CCH has proceeded with work without getting authorization.
   - P Lore – Norm will be the primary contact for coordination of the project.
   - Q Navy asked what would happen with the force main if the tunnel alternative is chosen. Will force main be removed or abandoned inplace? (Jack-abandonment is preferable; it would cost millions to remove.)
   - R Tom Miyata of City & County has worked with Navy on most projects.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Sept. 30, 2009
Time:	9:30am
Place:	State Capitol, Room 210
Attendees:	Debbie Hiramoto (Staff member of Sen. Donna Mercado Kim), Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Questions/Concerns**
   A. Debbie: This is a city project-how does it affect the Senator? (Explained proposed shaft site near stadium and EIS process.)
   B. LR told Debbie that we would let her know when website is up and would send collateral material when ready.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Wednesday, Sept. 30, 2009
Time:	9:00am
Place:	State Capitol, Room 207
Attendees:	Senator Will Espero, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Questions/Concerns**
   A. Espero: Thought navy route made sense; offered to assist with navy should we have problems. (Explained our first meeting is Friday and would not have gauge as to their interest until then.)
   B. Espero: What is the diameter of pipe? (20' at Honouliuli end.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Sept. 29, 2009
Time:	11:00am
Place:	Starbucks Bishop St. (BOH)
Attendees:	Maeda Timson, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project, routing, technology in layman terms and public outreach.
2. **Comments**
   A. Maeda: Have had experience working with Navy; often depends on the officer in charge.
   B. Maeda: Very supportive of infrastructure that enhances the growth in the Leeward area. Since there are so many projects in and around Kapolei – familiar with EIS process.
   C. Scheduled meeting w/NB for Jan. 27, 2010 at 7:00pm.
      1. Maeda asked that we provide handouts for the Board & audience; 81/2 x 11 that answers who, what, where, when and why of project.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Monday, Sept. 28, 2009
Time:	9:00am
Place:	Zippy's Ewa
Attendees:	Kurt Fevella, Coby Lynn, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Comments**
   A. Both were supportive of the project; could see that there were benefits to eliminating the current pumping stations and thought tunneling would be environmentally better with less maintenance and no spillage..
   B. They expected one NB member to be critical and/or negative since that person (Celeste Lacuesta) was generally against the Honouliuli Plant and the growth that was occurring in the Ewa area. Also, two community members, Glenn Oamilda and Henry Lahoy usually were against anything to do with Honouliuli and they might attend the meeting.
   C. Both commented that we need to be prepared to answer the following questions as these were usually asked about these projects:
      1. How is the project being funded?
      2. Where is the money coming from?
      3. How was the bidding process handled for the study?
      4. How long will the EIS take?
      5. Is there public testimony?
      6. What's the schedule or timetable for the project?
   D. Both also commented that those questioning the project will try to connect this project to the Hoopili development since they are against the Hoopili project.
   E. Turnout at NB meetings vary from 20-30 people.
      1. Agreed to put us on the Nov. 12th agenda. I will send memo confirming.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Monday, Sept. 28, 2009
Time:	3:30pm
Place:	Zippy's Vineyard
Attendees:	Maurice Morita, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project, routing, technology in layman terms and public outreach.
2. **Comments**
   A. Arranged for NB presentation on Jan. 14, 2010 at Aliamanu Middle School, 7:00pm. 10-15 min. for presentation. (Nov. meeting conflicted with Ewa NB meeting).

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Monday, Sept. 28, 2009
Time:	2:30pm
Place:	State Capitol, Room 328
Attendees:	Representative Lynn Finnegan, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project, routing, technology in layman terms and public outreach.
2. **Questions/Comments**
   A. Finnegan: Will both routes be studied? (Yes.)
   B. Finnegan: Will probably attend NB meeting when we do presentation.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Monday, Sept. 28, 2009
Time:	2:00pm
Place:	State Capitol, Room 305
Attendees:	Representative Mark Takai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth, Greg Heath
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project, routing, technology in layman terms and public outreach.
2. **Comments**
   A. Takai: Runs the Aiea/Pearl City town meetings where legislators from the area address issues in the community.
      1. The town meetings on traffic will include the Waimalu sewer project since it impacts traffic. Meeting will probably be held next March (2010). Should include info on Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan project at that meeting also.

   B. Takai: Has a website – www.heartofoahu.com that links to Kamehameha Hwy. Improvements projects. Website addresses traffic improvement projects located between Center Drive and Waihona St.
      1. He formed task force of city, state and elected officials to focus on transportation projects in this area. Will include Waimalu sewer because of its impact. Should possibly include Honouliuli project.

   C. Takai: Suggested the idea of a "hotline" like what is being offered in the Waimalu sewer project.
      1. Takai recommended that we do hotline early before construction.

   D. Takai was somewhat aware of Honouliuli project because he had talked with Eric Takehara earlier.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Sept. 22, 2009
Time:	3:00pm
Place:	Senator Dan Inouye's Honolulu office Prince Kuhio Federal Building
Attendees:	Alan Yamamoto, Rae Loui, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Rae gave overview of project. Linda explained Navy issue; potential need for Congressional assistance.
2. **Questions/Comments**
   A. Alan: What are the permitting requirements; any special permits because of storage component? (Rae- permitting should be the same or less than conventional transmission; less odor, less impacts to traffic, etc.)
   B. Alan: Does the Kapolei sewage go to Honouliuli? (Yes, next treatment plant is in Waianae.)
   C. Alan: Why is the project focused from Honouliuli to Halawa instead of Kapolei area? (Kapolei has a newer system; also per EPA: already know that pump stations need to be replaced and other work needs to address problems in this area.)
   D. Alan: What does EPA say about this project? (Rae – EPA seems to like the tunneling idea but are waiting the outcomes of the study; City slowly winning EPA over.)
   E. Alan: Who are you talking with at EPA – locally or on mainland? (SF Region 9 level.)
   F. Alan: If tunneling goes perfectly in what "budget cycle" might money be required? (Explained the timetable; if Federal funds required would be 5+ years out.)
   G. Alan: Are any critical habitats affected? (Yes, wetlands area adjacent to Pearl Harbor.)
   H. Alan expressed concern regarding derelict vessel storage area- don't know if there are "sensitivities" ; also raised security /terrorism issues regarding tunneling beneath Navy land. Need to address security/access during and after construction.
      1. Rae: Do you think that the Navy will take issue with this project? (Alan: Tunneling underground won't have access issues or building at ground level in blast zone. Also, raising the issue early is a plus; may take educating the civilian and then Navy hierarchy.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Sept. 22, 2009
Time:	12:00pm
Place:	State Capitol, Room 201
Attendees:	Senator Mike Gabbard, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project, routing, technology and public outreach.
2. **Questions/Comments**
   A. Gabbard: Is tunneling the newest technology? (It has been done elsewhere i.e., Brightwater; but not here).
      1. Gabbard talked about the blast zone – his experience while at the City Council.
   B. Gabbard: Would decision to use Navy land be made locally or by Navy on the mainland? (I did not know; we were having our first meeting w/Navy next week).

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Sept. 22, 2009
Time:	1:00pm
Place:	State Capitol, Room 201
Attendees:	Representative Henry Aquino, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project, routing, technology and public outreach.
2. **Questions/Comments**
   A. Aquino: Will the capacity take care of projected growth in Ewa? (Yes.)
   B. Aquino: Would jobs be eliminated if pump stations are eliminated? (I did not know, sure this would be part of what's looked at when weighing alternatives.)
   C. Aquino requested a copy of the map. (I said it would be part of brochure and I would make sure he gets a copy when it is ready.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date: Friday, Sept. 11, 2009

Time: 12:30pm

Place: State Capitol

Attendees: Representative Blake Oshiro, Representative Jon Riki Karamatsu, Linda Rosehill

Distribution: Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth

Contract No.: SC-ENV 0700097
Job No.: 60041627

Purpose: Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Concerns**
   A. Linda explored option of using legislators' town meetings to get project info out.
      1. Oshiro: Recent town meeting- 25-30 people attended. Low turnout.
   B. Oshiro: Traffic is a major community concern especially at Christmas and Sat. morning swap meet.
      1. If and when built, traffic will be their major, probably only concern. (Karamatsu had no comments or questions.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date: Thursday, Sept. 10, 2009

Time: 9:30am

Place: Honolulu Hale

Attendees: Councilmember Nestor Garcia, Linda Rosehill

Distribution: Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth

Contract No.: SC-ENV 0700097
Job No.: 60041627

Purpose: Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Concerns**
   A. Garcia questioned ability to use Navy land.
      1. He had experience with difficulty to even erect tents or a bathroom on the adjacent soccer field.
   B. Area near force main very rough and he doesn't walk there however, adjacent Castle & Cooke subdivision is newer and may have a community association and likely would be concerned about what's going on in community.
3. **Suggestions**
   A. Garcia has an active website that is updated regularly; we can post info on project.
   B. Advise him when we work in Waipahu are; he can and is willing to assist with contact.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, Sept. 10, 2009
Time:	9:00am
Place:	State Capitol, Room 213
Attendees:	Senator Clarence Nishihara, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   - A. Linda gave overview of project.
2. **Questions/Concerns**
   - A. Would City be able to go across Navy lands?
     1. Concerned about wetland, swamp area.
   - B. Life of tunnel? (150 years)
   - C. Is there a website? (Advised him it would be up shortly and I will notify everyone once it's activated).
   - D. Re-use of stormwater, runoff?
     1. Nishihara stressed that it is important to reuse those resources in the future.
   - E. Funding? (Would be looked at as part of the study.)
3. **Suggestions**
   - A. Nishihara holds monthly coffee hours in Pearl City & Waipahu which are televised by Olelo and shown twice a month on Olelo. Would be happy to have AECOM, City explain project at coffee hours when we are ready.
   - B. Nishihara suggested that maps of routes and information on project be placed at public libraries; more people are using libraries.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, Sept. 10, 2009
Time:	3:30pm
Place:	Representative Neil Abercrombie's Honolulu office Prince Kuhio Federal Building
Attendees:	Terry Visperas, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   - A. Linda gave overview of project.
2. **Comments**
   - A. Terry: Please call us if you need assistance in the future. Will pass along info to Lloyd Nekoba (Special Asst. to Rep.) (He had no questions.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, Sept. 10, 2009
Time:	11:30am
Place:	State Capitol, Room 230
Attendees:	Senator Norman Sakamoto, James Kumagai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Questions/Concerns**
   A. Who is AECOM? (AECOM bought out M&E Pacific)
   B. Is the tunnel precast? (James explained the tunnel technology.)
   C. Sakamoto: Navy understands the need for infrastructure; will likely be amenable.
   D. Sakamoto: The public will be more concerned about who will pay for the infrastructure.
   E. Sakamoto: The environmentalists will be concerned that increase sewer capacity will mean more growth.
   F. Sakamoto: Cost of growth in the future could be substantial. Believes in balance, long range solutions.
3. **Suggestions**
   A. Sakamoto: Has monthly newsletter and can include project info; can give notice prior to NB (Aiea/Aliamanu/Foster Village) meetings to community.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, Sept. 10, 2009
Time:	10:30am
Place:	Honolulu Hale
Attendees:	Councilmember Ann Kobayashi, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview of project.
2. **Comments**
   A. Is familiar with tunnel technology; thought it a more efficient way to go. (She had no questions.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Sept. 8, 2009
Time:	9:30am
Place:	State Capitol, Room 215
Attendees:	Senator David Ige, James Kumagai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   - A. James gave overview/historical perspective of sewage systems.
     1. Sewage system needs upgrade/expansion. For example:
        a. 2 force main, need to add 3rd force main.
        b. Need to move pump stations (i.e. Pearl City)
        c. Cost estimated at $200 million in year 2000
        d. Today might cost about $300 million.
     2. Looking at alternative: deep tunnel system-gravity flow, eliminate pump station.
     3. Explained route
2. **Questions/Concerns**
   - A. How deep does this go? (Tunnel 100' at Honouliuli; Halawa at 20')
     1. Technology has improved: tunneling more feasible, simpler, more reliable. Life of tunnel is 150 yrs.
     2. Pearl Harbor route option avoids urban, residential areas, however dependent on Navy approval.
        a. Shorter route, should be cheaper.
   - B. Where is HECO fuel line?
     1. Still need to flush out, trading info with HECO– tunnel should be deeper than fuel lines. Tunnel equipment is about 300-400 tons. Still looking at siting of potential shaft site.
     2. Talking with Transit planners.
     3. Can anticipate big problem at Halawa entrance to stadium with 20' diameter tunnel.
     4. Tunnel would provide conveyance and storage of sewage.
   - C. When would the project start?
     1. 2 yrs. study time. 5-10 years to get going on infrastructure, assuming financing is available.
     2. Do you get involved with Neighborhood Board in Pearl City?
        a. Ige – Didn't usually but there is a new NB chair who has requested more participation.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Sept. 8, 2009
Time:	3:00pm
Place:	State Capitol, Room 444
Attendees:	Representative Roy Takumi, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. Linda gave overview or project
2. **Questions/Concerns**
   A. Questioned the number of big projects the City is undertaking i.e, Rail. Asked about timetable. (2 year study. Decision. If go: Implement 5-10 years)
   B. Gone to Neighborhood Boards? (Linda explained outreach timetable)
   C. Offered to assist.
      1. Team of legislators do community meetings throughout the year. Would be happy to host a meeting re: this project. See attached flyer on most recent town meeting.
      2. He and other legislators have newsletters that could be used to drive the community to the ENV website and/or provide update on the project.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Sept. 8, 2009
Time:	11:00am
Place:	Honolulu Hale
Attendees:	Councilmember Romy Cachola, Corinne Gallardo, James Kumagai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. James gave overview as a heads-up on project.
2. **Questions/Concerns**
   A. Where is funding coming from? State or Federal funds? (Not yet determined)
   B. Is tunnel cheaper? (Not sure yet. Project will determine.)
   C. Corinne asked:
      1. Is the deep tunnel system a new trend? (Yes, more being done around the world).
      2. But is the cost of tunneling more? (Not yet determined)
      3. How many miles? (10 miles)
      4. Cost at $½ billion? (Not sure. Could be.)
      5. Who is the client? (City & County of Honolulu)
      6. Where will they get the money? How much? (That's what needs to be determined. If based on today's cost upgrade cost could be $300-400 million.)
      7. Is it phased or one time? (Probably phased)
      8. Could you still decide not to do tunneling? (Yes)
      9. Could you end up with deep tunneling to some areas and at grade in other areas? (Yes)
      10. When did this all start? (Earlier consultant did workshop 2 years ago. This project started in August.)
   D. Cachola asked:
      1. Tunnel x 3; 1.2 billion at least. When can we find out? (2 yrs. per EIS, study)
      2. Why are we doing this now? (EPA consent order. City Long Term Plan.)
      3. Have you gone to NB? (Not yet; explained outreach.)
   E. Romy asked Corinne to check whether Council gave authorization to float bids.
   F. Concerned about number of big money projects before the City all in the multibillion dollar amount. Cannot afford it. This is a crap shoot on cost.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Sept. 8, 2009
Time:	10:30am
Place:	Honolulu Hale
Attendees:	Councilmember Gary Okino, James Kumagai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. James gave overview.
2. **Questions/Concerns**
   A. How much capacity will this add? (Project would roughly double the capacity.)
   B. Will it handle transit station development being planned? Need to consider transit station growth. (Population projection came from Transit study.)
   C. Is increase capacity only Ewa growth? (No, growth in Pearl City and expansion of urban core.)
      1. Okino: Halawa Prison expansion couldn't occur because of lack of sewer capacity. Need to look at growth in Halawa Valley.
   D. Life of tunnel? (150 years)
      1. Okino: Council looking at redevelopment of stadium area.
      2. Okino: If you plan for 150 years, make sure enough capacity.
   E. Are projections accounted for (transit growth) Waiawa to Pearl City? (Will be part of EIS)
   F. Is it on the Public Infrastructure Map? (Not sure, good point. We need to check.)
      1. Okino: Can't get funding unless on PIM.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Tuesday, Sept. 8, 2009
Time:	10:00am
Place:	Honolulu Hale
Attendees:	Council Chair Todd Apo, James Kumagai, Linda Rosehill
Distribution:	Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens, James Kumagai, Linda Rosehill, Betsy Shreve, Aaron Weieneth
Contract No.:	SC-ENV 0700097
Job No.:	60041627
Purpose:	Initial meeting to describe project

Discussion Items:

1. **Project Description**
   A. James gave overview/historical background. 1972 decision made to eliminate all sewage discharges into Pearl Harbor by diverting them to Honouliuli for primary treatment and deep ocean outfall disposal. Existing system must be upgraded and expanded. Alternative: Deep tunnel system. Diameter of tunnel would be 20' at Honouliuli, 7-10 ft. at Halawa.
2. **Questions/Concerns**
   A. Assume all pump stations will be gone? (Yes)
   B. How deep does this go? (Tunnel 100' at Honouliuli; Halawa at 20')
   C. Does it bring more effluent from other areas? (No)
   D. If all goes smoothly, ball park start? (2 yr. study, 5-10 yr. start)
   E. If we don't do this, what are costs of continued repair, upgrade of existing system? ($190 million originally, now about $300-$400 million cost. Tunneling 10 miles, given state of technology, might be comparable cost. Right now in same ball park as far as cost.
   F. Is there any EPA regulation requiring this? (Yes, EPA – consent decree and system getting old/replacement i.e. Pearl City pump station is in flood plain therefore need to relocate. Lots of must do things adding up. Because of consent decree, certain things city must do.

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, August 27, 2009
Time:	10:00am
Place:	Senator Daniel Akaka's Honolulu office Prince Kuhio Federal Building
Attendees:	Mike Kitamura, James Kumagai, Linda Rosehill
Distribution:	James Kumagai, Linda Rosehill, Rae Loui, Lambert Yamashita, Jeremy Koch, Markus Owens
Contract No.: **Job No.:**	SC-ENV 0700097 60041627
Purpose:	Initial meeting to describe project.

Discussion Items:

1. **Project Description**
   A. Honculiuli sewerage system extends from Halawa to Honouliuli WWTP. Existing conveyance system: pipelines and pumping stations. Must upgrade or replace with new technology: deep tunnel system.
   B. James used tunnel route map and boring map to illustrate potential routes with pump station locations. Alternative tunnel routes: Kam Hwy. and through Navy land.
   C. Mike asked about:
      1. Diameter of tunnel? (About 20 feet, about 10 feet Salt Lake)
      2. Depth? (20ft. on Salt Lake end; 100-150 ft. at Honouliuli)
      3. Length of project? (Approximately 10 miles)
      4. Timeline? (2 yrs. current planning, engineering; addition 5-10 yrs. to implement)
      5. Life of tunnels? (Est. 150 yrs or more using French tunnel as example)
      6. Advantages to Navy? Can they benefit? (This is beginning of project; can determine as talks progress)
      7. When is meeting with Navy? (Hopefully within 2 wks.)

2. **Project Benefits**
   A. Pearl Harbor/Navy route simpler, shorter, more reliable and looks less expensive; eliminates pump stations; eliminates need for storage tanks; less electricity used when pump eliminated.
   B. Mike asked:
      a. Have you estimated the cost savings if the Navy route is used? (Not yet, only in preliminary stages of project; will pencil out costs as project progresses)
      b. Who have you meet with? (Only HECO so far. Linda outlined stakeholder outreach.)
      c. Where are Navy's pipelines? Do they cross over the identified routes? (Not sure, still putting together info)
      d. Mike will relay info from briefing to the appropriate staff that handles environmental and wastewater issues. Who's the primary contact? (Linda Rosehill)
   C. James offered Project Team to do a more complete briefing for the Congressional staff once the project has progressed and information firms up.
      1. Mike advised point of contact for Navy is Stan Yuen; the civilian aide to Admiral Smith (who is in charge of all Navy facilities.)

Meeting Notes

Honouliuli/Waipahu/Pearl City Facilities Plan
Initial Contact

Date:	Thursday, August 20, 2009
Time:	1:00pm
Place:	HECO Ward Ave.
Attendees:	Roy Noda-Principal Engineer, Structural Division HECO Noreen Takeshita – Engineer II, Structural Division HECO James Kumagai – Wastewater Project Director AECOM Rae Loui – Principal In Charge AECOM Linda Rosehill – Public Relations AECOM
Distribution:	Attendees, Jeremy Koch, Lambert, Yamashita, Markus Owens
Contrace No.: **Job No.**	SC-ENV 0700097 60041627
Purpose:	Initial meeting with HECO to provide overview of project; identify initial questions and concerns.

Discussion Items:

1. **Overview Of The Project**
   - A. Rae provided overview of project including map of the routing alternatives and a map of the boring sites.
   - B. Status of boring (in process of getting permits; will let HECO know when permits are secured).
   - C. Noreen worked for Wilson-Okamoto prior to HECO so helped develop the original Facilities plan; therefore was familiar with engineering recommendations for storage tanks, lines and Honouliuli expansion.

2. **Concerns/Issues Raised**
   - A. Roy: Waiau Plant site has underground springs with active water flow. "How do you intend to tunnel given the geology of the area?"
     1. JK explained tunneling procedures and RL cited tunnel projects done in other areas i.e., San Francisco.
   - B. Lots of pilings in the area as well as discharge and intake tunnels and tanks.
     1. JK asked if detailed maps of the area was available.
        a. Roy replied that pilings are from 1940's; did not have such a map.
   - C. HECO site also has its own above ground wastewater treatment facility for wash wastes disposal and an outfall.
   - D. Power plant operates 24 hrs. with 3+ units running during the day.
   - E. Steel poles – 138kv follows along Kamehameha Hwy. (upper rail route).
   - F. Lines or tunnels using gravity flow might not be deep enough to avoid pilings.
     1. JK asked whether information was available on the depth of the pilings.
        a. Roy replied that he had not seen such records.
   - G. Concern that "there is a lot of weight in the area" a tunnel might cause subsidence which would affect HECO's turbines which are very sensitive.
     1. Roy recommended that the project avoid the power plant area; following either the rail route alternative or crossing into the Loch (Pearl Harbor) area to the south of the power plant site. Roy has drawings of outfall area which is very shallow.
   - H. Noreen asked about the depth of borings.
     1. 150 ft. at drop shaft area shallower, about 40 ft. on Halawa side of route.
   - I. Asked whether Honouliuli would be enlarged (plans called for expansion).
   - J. Noreen pointed out there are steel poles in Racford Drive.

3. **Project Contact**
   - A. Roy provided map of area fronting the plant also can provide additional info via secured site. Designated Noreen as the primary liaison for the project. Also suggested that as project firms up others from HECO be included in a larger more detailed briefing. Lori Hoo, Candace Fukuda coordinate the community outreach for HECO.

3. **Action Items**
   - A. Rae to check on secure website.
   - B. LR notify Noreen when permits for boring are secured.
   - C. Keep Noreen abreast as project progresses.