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WW.C 11-146

October 27, 2011

Mr. Gary Hooser, Director
Office of Environmental Quality Control (OEQC)
235 South Beretania Street, Suite 702
Honolulu, Hawai'i 96813

Dear Mr. Hooser:

Subject: Draft Environmental Assessment (DEA) for
Solids Handling Building Return Lift Station
Sand Island Wastewater Treatment Plant
Tax Map Key (1) 1-5-041: 005
Honolulu, Island of O'ahu, Hawai'i

The Department of Design and Construction, City and County of Honolulu has reviewed the Draft Environmental Assessment (DEA) for the subject project, and anticipates issuing a Finding of No Significant Impact (FONSI) determination. Please publish notice of availability of the DEA for public comment in the next OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form, one (1) hard copy of the DEA and one (1) CDROM containing PDF copies of the DEA and project summary. Should you or your staff have any questions, please contact Russell Takara at 768-8770, or contact our consultant James Niermann of R. M. Towill Corporation at 842-1133.

Very truly yours,

A handwritten signature in black ink, appearing to read "Collins D. Lam".

Collins D. Lam, P.E.
Director

Enclosures

**Project Name: Solids Handling Building Return Lift Station
Sand Island Wastewater Treatment Plant**

**Publication Form
The Environmental Notice
Office of Environmental Quality Control**

Instructions: Please submit one hardcopy of the document along a with determination letter from the agency. On a compact disk, put an electronic copy of this publication form in MS Word and a PDF of the EA or EIS. Please make sure that your PDF documents are ADA compliant. Mahalo.

Applicable Law: Chapter 343 Hawai'i Revised Statutes
Type of Document: Draft Environmental Assessment
Island: O'ahu
District: Honolulu
TMK: (1) 1-5-041:005
Permits Required: Special Management Area Use Permit, Department of Planning and Permitting Construction Plan Review and Approval, Building Permit, Grading and Stockpiling Permit, Department of Health Construction Plan Review and Approval

Applicant or Proposing Agency: **Department of Design and Construction**
Address: 650 South Beretania Street
Honolulu, Hawai'i 96813
Contact & Phone: Collins Lam, P.E., Director, 768-8480

Approving Agency/ Accepting Authority: **Department of Design and Construction**
Address: 650 South Beretania Street
Honolulu, Hawai'i 96813
Contact & Phone: Collins Lam, P.E., Director, 768-8480

Consultant: **R. M. Towill Corporation**
Address: 2024 North King Street, Suite 200
Honolulu, Hawai'i 96819
Contact & Phone: James Niermann, AICP, 842-1133
Email: JimN@rmtowill.com

OFFICE OF ENVIRONMENTAL
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Project Summary: Summary of the direct, indirect, secondary, and cumulative impacts of the proposed action (less than 200 words). Please keep the summary brief and on this one page.

The proposing agency, Department of Design and Construction, plans to construct a solids handling building return lift station to collect and recirculate residual flows from intermediate stages of processing within the Sand Island Wastewater Treatment Plant (WWTP). Improvements include a sub-grade compartment well and two sub-grade wet wells with submersible pumps, and miscellaneous above-ground valves, instrumentation, and piping for influent and effluent flows.

This EA addresses the potential for anticipated environmental impacts and considers the alternatives to the proposed action with appropriate mitigation measures to address and minimize potential effects. It is anticipated that this project will have no significant adverse impact to water quality, air quality, existing utilities, noise, archaeological sites, or wildlife habitat. All anticipated impacts will be temporary and will not adversely affect the environmental quality of the area. The Department of Design and Construction has preliminarily determined that the project will not have a significant environmental impact and anticipates issuing a Finding of No Significant Impact (FONSI) in accordance with Chapter 343, HRS.

DRAFT ENVIRONMENTAL ASSESSMENT

Prepared and Submitted in Accordance with Chapters 205A and 343, HRS

SOLIDS HANDLING BUILDING RETURN LIFT STATION Sand Island Wastewater Treatment Plant Honolulu, Island of O‘ahu, Hawai‘i

October 2011

APPLICANT

**Department of Design and Construction
City and County of Honolulu**
650 South Beretania Street
Honolulu, HI 96813

PREPARED BY

Synagro
1350 Sand Island Parkway #6
Honolulu, HI 96819-4319

R. M. Towill Corporation

2024 North King Street, Suite 200
Honolulu, Hawaii 96819-3494
(RMTC Ref: 1-21920-00)

DRAFT ENVIRONMENTAL ASSESSMENT

Prepared and Submitted in Accordance with Chapters 205A and 343, HRS

SOLIDS HANDLING BUILDING RETURN LIFT STATION Sand Island Wastewater Treatment Plant Honolulu, Island of O‘ahu, Hawai‘i

OCTOBER 2011

APPLICANT:

Department of Design and Construction
City and County of Honolulu
650 South Beretania Street
Honolulu, HI 96813

PREPARED BY:

Synagro
1350 Sand Island Parkway #6
Honolulu, Hawai‘i 96819-4319

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TABLE OF CONTENTS

PROJECT SUMMARY i

SECTION 1 INTRODUCTION

 1.1 Project Overview 1-1

 1.2 Project Purpose and Need 1-1

 1.3 Basis for the Environmental Assessment..... 1-3

 1.4 Proposing Agency and Accepting Authority 1-3

SECTION 2 PROJECT DESCRIPTION AND ALTERNATIVES CONSIDERED

 2.1 Background Information 2-1

 2.1.1 Project Location 2-1

 2.1.2 Owner Information..... 2-1

 2.1.3 Sand Island WWTP Operations 2-1

 2.2 Project Description..... 2-6

 2.3 Project Schedule and Cost 2-10

 2.3.1 Schedule 2-10

 2.3.2 Cost 2-10

 2.4 Alternatives Considered..... 2-10

 2.4.1 No Action..... 2-10

 2.4.2 Delayed Action 2-10

 2.4.3 Expansion of the Existing Return Flow Pump Station 2-10

SECTION 3 NATURAL ENVIRONMENT

 3.1 Physical Environment..... 3-1

 3.1.1 Climate..... 3-1

 3.1.2 Topography, Geology and Soils 3-1

 3.1.3 Surface Waters and Hydrology 3-3

 3.1.4 Air Quality 3-3

 3.1.5 Noise 3-4

 3.1.6 Natural Hazards 3-5

3.1.7	Flora and Fauna.....	3-8
3.2	Socio-Economic Environment.....	3-9
3.2.1	Land Use	3-9
3.2.2	Historic and Archaeological Resources	3-10
3.2.3	Cultural Resources and Practices.....	3-10
3.2.4	Scenic and Visual Resources	3-10
3.2.5	Recreational Facilities.....	3-11
3.2.6	Fire, Police and Medical Services.....	3-12
3.2.7	Socio-Economic Conditions	3-12
3.3	Infrastructure and Utilities	3-13
3.3.1	Traffic and Transportation Systems.....	3-13
3.3.2	Drainage System	3-14
3.3.3	Water System	3-15
3.3.4	Wastewater System.....	3-15
3.3.5	Electrical Systems.....	3-16
3.3.6	Solid Waste Disposal	3-16
 SECTION 4 RELATIONSHIP TO LAND USE PLANS AND POLICIES		
4.1	The Hawai‘i State Plan	4-1
4.2	State Land Use Law	4-2
4.3	City and County of Honolulu (CCH) General Plan	4-4
4.4	CCH Zoning and Land Use Ordinance.....	4-4
4.5	Primary Urban Center (PUC) Development Plan.....	4-7
4.6	Special Management Area (SMA) Rules and Regulations.....	4-7
4.6.1	Shoreline Management, ROH Section 25.....	4-9
4.6.2	Coastal Zone Management, HRS 205(A).....	4-12
 SECTION 5 NECESSARY PERMITS AND APPROVALS		
5.1	City and County of Honolulu.....	5-1
5.2	State of Hawai‘i	5-1
 SECTION 6 ORGANIZATIONS AND AGENCIES CONSULTED DURING THE PREPARATION OF THE DEA		

6.1 City and County of Honolulu.....6-1

6.2 State of Hawai‘i6-1

SECTION 7 ORGANIZATIONS AND AGENCIES CONSULTED DURING THE 30 DAY DEA REVIEW PERIOD

7.1 City and County of Honolulu.....7-1

7.2 State of Hawai‘i7-1

7.3 Federal Agencies7-1

7.4 Elected Officials7-1

7.5 Utility Companies7-2

7.6 Community Organizations7-2

SECTION 8 DETERMINATION

SECTION 9 REFERENCES

APPENDIX

Appendix A Letter from State Historic Preservation Division, March 5, 2001

FIGURES

Figure 1-1 Project Location1-2

Figure 2-1 Aerial View of Sand Island WWTP.....2-2

Figure 2-2 Sand Island WWTP Process Schematic (Existing).....2-4

Figure 2-3 New Solids Handling Building Return Lift Station Site Plan.....2-8

Figure 2-4 New Solids Handling Building Return Lift Station Plan View2-9

Figure 2-5 New Solids Handling Building Return Lift Station Section.....2-9

Figure 3-1 Soils.....3-2

Figure 3-2 Sand Island WWTP, FEMA FIRM Panel 1500C0361G3-6

Figure 3-3 Tsunami Evacuation Zone3-7

Figure 4-1 State Land Use District4-3
Figure 4-2 Zoning4-6
Figure 4-3 Special Management Area4-8

TABLE

Table 2-1 Sand Island WWTP – Current (2009) Design Information2-1

Project Summary

Project:	SOLIDS HANDLING BUILDING RETURN LIFT STATION Sand Island Wastewater Treatment Plant
Applicant:	Department of Design and Construction (DDC) City and County of Honolulu (CCH)
Accepting Agency:	DDC, CCH
Agent:	R. M. Towill Corporation James Niermann, Senior Planner 2024 North King Street, Suite 200 Honolulu, Hawai‘i 96819 (808) 842-1133
Location:	Honolulu, Island of Oahu
Tax Map Key:	(1) 1-5-041: 005
Proposed Action:	<p>The DDC plans to construct a solids handling building return lift station (RLS) to collect and recirculate in-plant return flows from intermediate stages of processing within the Sand Island Wastewater Treatment Plant (WWTP).</p> <p>Currently, an existing return flow pump station (RFPS) collects residual, in-plant return flows from WWTP treatment processes. These flows are routed back to the headworks downstream from the WWTP’s influent flow meter and sampler in order to recognize that these in-plant return flows have already been metered. However, the existing RFPS is nearing operational capacity. Some of the residual in-plant return flows are routed to the existing makai lift station (MLS) which collects new flows generated within the WWTP and pumps them to the headworks upstream from the flow meter and sampler where they are metered and sampled with new flows coming into the plant.</p> <p>The new RLS is required to increase capacity to meet the WWTP’s operational demands for collection and conveyance of in-plant return flows. The new RLS is also required to ensure compliance with conditions of the WWTP’s National Pollutant Discharge Elimination System (NPDES) permit. The NPDES permit requires that new flows entering the WWTP be monitored and sampled upstream of any in-plant return flows and prior to treatment.</p> <p>The solids handling building RLS improvements include a sub-grade compartment well containing two wet wells with submersible pumps, miscellaneous above-ground instrumentation, valves, and piping for influent and effluent flows.</p>

Project Summary

Land Area:	The planned lift station improvements will require approximately 315 square feet of land area within the developed areas of the WWTP, for the pump housing and appurtenant structures. Construction staging and stockpiles will require approximately 10,000 square feet.
Present Use:	The project site presently includes unused, vacant space adjacent to the existing Solids Handling Building and Solids Odor Control Systems.
State Land Use District:	Urban
PUC Development Plan Land Use Designation:	Industrial (Map A.5 Land Use Map, PUC – Central)
County Zoning District:	I-3, Waterfront Industrial
Special Management Area:	Yes
FEMA/FIRM Designation:	X (Outside the 0.2 percent annual chance floodplain)
Permits Required:	<p><i>Clearances and permits needed from the various Federal, State and City and County of Honolulu agencies include but are not limited to the following.</i></p> <p><u>City and County of Honolulu</u> DDC</p> <ul style="list-style-type: none"> • Finding of No Significant Impact <p>Department of Planning and Permitting (DPP)</p> <ul style="list-style-type: none"> • Special Management Area Permit • Construction plan review and approval • Building Permit • Grading and Stockpiling Permit <p><u>State of Hawai‘i</u> Department of Health (DOH)</p> <ul style="list-style-type: none"> • Construction plan review and approval • Air Permit modification (Covered Source Permit No. 0216-06-C).

SECTION 1 Introduction

1.1 PROJECT OVERVIEW

The City and County of Honolulu (CCH), Department of Design and Construction (DDC) plans to construct a solids handling building return lift station (RLS) at the Sand Island Wastewater Treatment Plant (WWTP). The Sand Island WWTP is located on Sand Island on land owned by the State of Hawai‘i and identified by Tax Map Key (TMK) parcel (1) 1-5-041: 005. The CCH Department of Environmental Services (ENV) owns and operates the Sand Island WWTP facility. See **Figure 1-1, Project Location**.

The planned Solids Handling Building RLS will occupy an area approximately 15 feet by 20 feet and consist of an underground reinforced concrete compartment well, two wet wells with submersible pumps, various above-ground instrumentation and appurtenances, influent gravity lines, and an effluent force main. See **Section 2.2** for a detailed description of planned improvements.

The RLS will collect return-flow liquids from the solids handling building, including flows from the condenser, Venturi scrubber, and centrifuge that are part of the solids treatment processes, floor drains that receive process water, as well as condensate from the gas holding tank adjacent to the digester. These liquids will then be pumped back to the WWTP headworks facility to a connection point downstream from the flow meter and sampler to be recirculated through the wastewater treatment process.

1.2 PROJECT PURPOSE AND NEED

The new RLS is required to increase capacity to meet the operational demands for collection and conveyance of in-plant return flows. The new RLS is also required to ensure compliance with conditions of the WWTP’s National Pollutant Discharge Elimination System (NPDES) Permit No. HI 0020117. The NPDES permit requires that new flows entering the WWTP treatment stream, including new, unprocessed flows generated within the WWTP such as on-site restrooms and utility basin drains, be monitored and sampled upstream of any in-plant return flows. Residual in-plant return flows must therefore be segregated from new, unprocessed flows that originate at the plant.

Currently, an existing return flow pump station (RFPS) collects residual, in-plant return flows from WWTP treatment processes, including return flows from the UV disinfection facility, overflow from the gravity thickeners, centrate from centrifuges used in sludge drying processes, and flows from draining various tanks for maintenance. These flows are routed back to the headworks downstream from the WWTP’s influent flow meter and sampler in order to recognize that these in-plant return flows have already been metered. The existing RFPS is nearing operational capacity.



In addition to the RFPS, the WWTP has a makai lift station (MLS) which collects new, untreated wastewater flows generated on-site at the WWTP, including flows from restrooms, sewer drains, floor drains in wash-down areas. These flows are pumped back to the headworks upstream from the flow meter and sampler where they are metered and sampled with new flows coming into the plant. Currently, the MLS also collects some residual in-plant return flows from the Venturi scrubber and condenser used in solids handling and sludge drying processes.

The new RLS will provide the necessary increased capacity for the collection and conveyance of in-plant return flows. The project will relieve some demand on the existing RFPS by redirecting centrate from centrifuge operations to the proposed new RLS. In addition, the project will redirect in-plant return flows from the existing MLS to the new RLS in compliance with NPDES permit requirements.

1.3 BASIS FOR THE ENVIRONMENTAL ASSESSMENT

In accordance with Chapter 343, Section 5, Hawai‘i Revised Statutes (HRS), this project involves the following action that requires the preparation of an environmental assessment (EA):

(1) Propose the use of state or county lands or the use of state or county funds;

In addition, the project is located within the Special Management Area (SMA), therefore the proposed activity is subject to the preparation of an EA per the requirements of Chapter 25, Revised Ordinances of Honolulu, (ROH), and Chapter 205A Hawai‘i Revised Statutes (HRS).

Pursuant to the requirements of Chapter 343 HRS, and Chapter 11-200, Hawai‘i Administrative Rules (HAR), the proposing agency, the DDC, has determined that the proposed project is not expected to have significant environmental effects. Based on analysis and review of environmental conditions, project effects, and proposed mitigation measures, it is anticipated that a Finding of No Significant Impact (FONSI) will be issued for this project.

1.4 PROPOSING AGENCY AND ACCEPTING AUTHORITY

In accordance with HRS Chapter 343, Section 5, the proposing agency and accepting authority for this EA is the CCH DDC.

SECTION 2

Project Description and Alternatives Considered

2.1 BACKGROUND INFORMATION

2.1.1 PROJECT LOCATION

The project site is located on Sand Island near the center of the Sand Island WWTP, adjacent to the existing solids handling building and solids odor control systems. The entrance to the Sand Island WWTP is located on Sand Island Parkway, approximately 0.5 miles southeast from the Kalihi Channel bridge. See **Figure 2-1, Aerial View of Sand Island WWTP**.

2.1.2 OWNER INFORMATION

The Sand Island WWTP is located on land owned by the State of Hawai'i and managed by the CCH ENV in accordance with Executive Order No. 3939. The property is identified by TMK parcel (1) 1-5-041: 005.

2.1.3 SAND ISLAND WWTP OPERATIONS

The Sand Island WWTP began operations in 1978 as a primary treatment wastewater treatment plant. The facility treats all of the wastewater flows generated in the Sand Island Sewer Basin service area, which extends from Niu Valley in the east, to Salt Lake / Aliamanu in the west.

The Sand Island WWTP has undergone a number of major modifications in the past decade in accordance with programmed Sand Island WWTP Modifications and Expansion work (DDC, 2001; DDC, 2005). As a result of these projects, the facility capacity was expanded to average daily flow of 90 million gallons per day (mgd) and its hydraulic capacity to 271 mgd. The current design data for the existing facility is presented in Table 2-1. The facility treatment process is described below in terms of liquid waste streams and solid waste streams.

Table 2-1.
Sand Island WWTP - Current (2009) Design Information

Flows	
Design Average Flow	90 mgd
Intraday Elevated Flow	113 mgd
Design Peak Wet Weather Flow	271 mgd
Design Storm	2 year 6 hour



Figure 2-1 Aerial View of Sand Island WWTP

Source: Google Earth

Liquid Waste Stream Processes

The process flow diagram of the Sand Island WWTP is shown in **Figure 2-2**. The following is a description of the major liquid stream units:

Headworks: This facility was placed in operation in 2005 and replaced the original Screenings Building. An influent receiving area receives flows from the Ala Moana Pump Station (PS), Hart Street PS, Sand Island Parkway PS, the Fort Shafter PS and makai lift station. The Headworks facility consists of six bar screens with associated screenings, washers and compactors for screenings removal, six Parshall flumes for flow measurement and four aerated grit chambers for grit removal. Screenings and grit are conveyed and discharged into a dump truck for disposal at the Waimanalo Gulch landfill.

SECTION 2 – Project Description and Alternatives Considered

Flotator Clarifiers and Primary Clarifiers: The plant consists of six flotator clarifiers and two primary clarifiers. The original Sand Island WWTP had only six flotator clarifiers to provide advanced primary treatment. The flotator clarifiers were originally designed to utilize dissolved air flotation to "float" the solids to the surface where surface skimmers remove the solids. Currently, the flotator clarifiers are typically utilized in gravity mode as traditional primary clarifiers.

Primary Clarifiers 7 and 8 were added to increase the capacity of the clarification system to an average daily flow of 90 mgd. These primary clarifiers were designed as gravity-type primary clarifiers. In recent years, the six flotator clarifiers and the primary clarifiers have all been operated in gravity mode. Four clarifiers are used under normal operations, typically including primary clarifiers 7 and 8 and two of the original six clarifiers.

Inorganic Chemical Feed Building (ICFB): The ICFB allows the injection of chemicals used for chemically enhanced primary treatment (CEPT). Currently iron chloride (FeCl_3 , ferric chloride) is being utilized for advanced primary treatment and odor control.

Ultraviolet (UV) Disinfection Facility: This facility consists of three effluent screens, six UV disinfection channels and an effluent WWPS. Five of the six UV disinfection channels are currently populated with UV lamps. The UV system has room for expansion from the current six UV disinfection channels to ten. Four channels are used under normal operations. During high flow conditions, the effluent pump station is used to provide additional pumping head to discharge the treated primary effluent through the 84-inch diameter ocean outfall pipeline. At low flow conditions, effluent can be discharged through the 84-inch ocean outfall pipeline by gravity.

Ocean Outfall: Effluent is discharged through an 84-inch diameter ocean outfall extending nearly two miles offshore to a depth of over 220 feet. The total length of the outfall is approximately 14,000 linear feet (lf). The wastewater is diffused through the final approximately 3,400 lf of the outfall pipe.

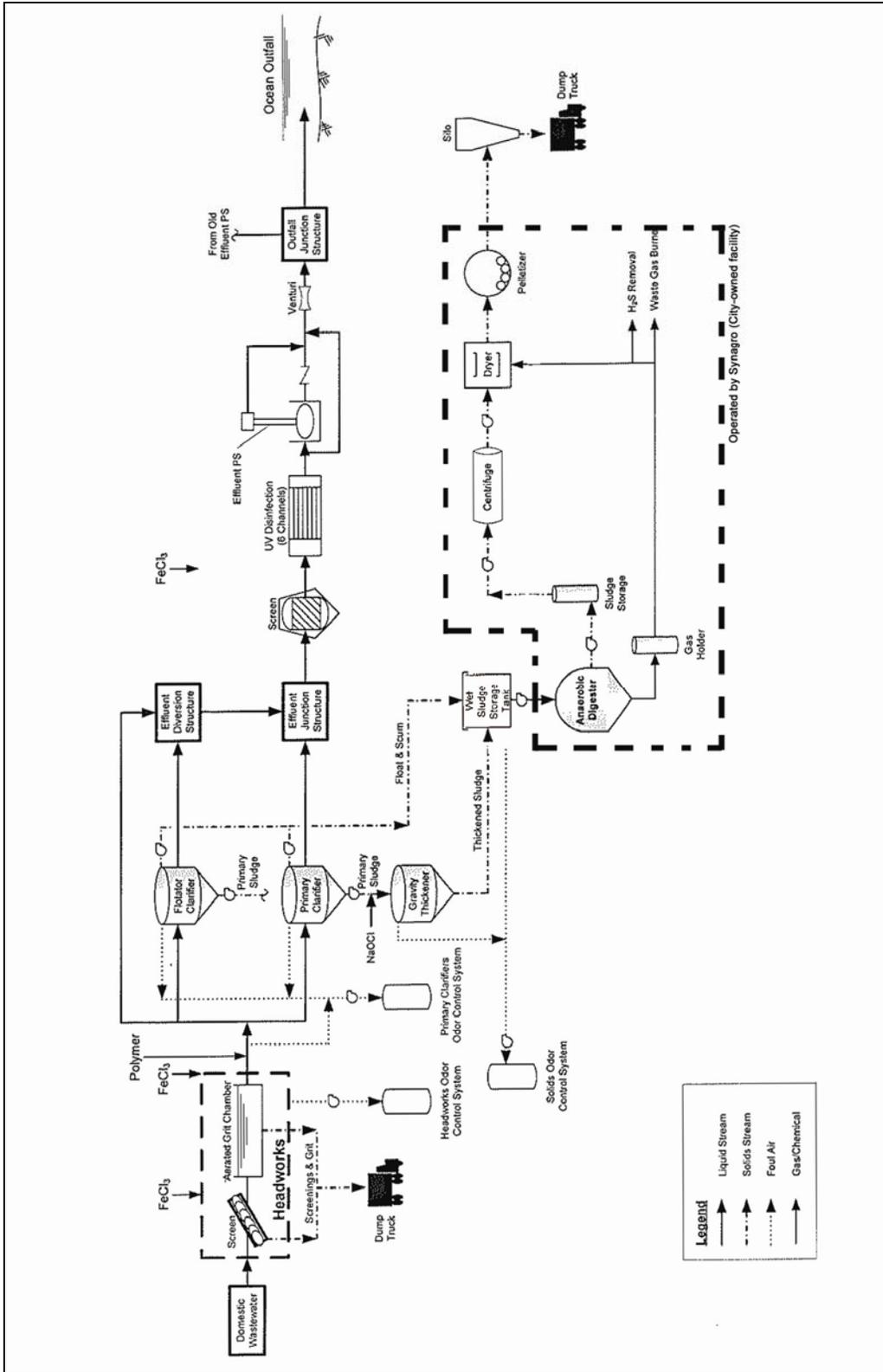


Figure 2-2 Sand Island WWTP Process Schematic (Existing)
Solid Waste Stream Processes

The major solid waste stream processes are as follows:

Gravity Thickeners (GT): Primary sludge from the flotator clarifiers and primary clarifiers is pumped to four gravity thickeners where chlorine is added to control odors and assist in thickening.

Wet Sludge Storage Tanks (WSST): Thickened sludge from the GTs and primary scum from the clarifiers are pumped to the four existing WSSTs. Typically, three WSSTs are used under normal operations, but all four may be called into service at any time. The WSSTs were originally designed to serve as sludge equalization tanks for the original solids handling processes, which formerly included a thermal conditioning system, centrifuges and sludge incinerators. These systems have been replaced with a sludge drying and pelletizing system now in operation.

Anaerobic Digester: The anaerobic digester involves a continuous feed process from the wet sludge storage tanks. The digester reduces solids and produces energy in the form of methane. The methane or biogas is used as a fuel source for the sludge heat drying system. A biogas holding tank, hydrogen sulfide scrubber, and associated auxiliary equipment (i.e., piping, valves) and controls are part of the anaerobic digestion process. After completion of the digestion process, the liquid digested biosolids are pumped to the sludge drying and pelletizing system.

Sludge Drying and Pelletizing System: The sludge drying and reuse system consists of digestion containment, centrifuges and final drying and pelletizing. Pelletized sludge is available for use as fertilizer. The anaerobic digester operations, sludge drying and pelletizing system are owned by the City and operated by Synagro Technologies Incorporated (STI) under an Operation and Maintenance contract.

Odor Control System

Foul air emissions for the Sand Island WWTP operations directly under the City and County of Honolulu are governed by Non-covered Source Permit (NSP) No. 0216-05-N Application for Renewal No. 0216-13, issued on August 13, 2009. This includes operations from the initial stages of WWTP processing including the headworks, clarifiers, gravity thickeners, and wet sludge storage tanks. The permit is scheduled to expire on August 12, 2014. The permit governs systems as of the date of issuance, a transition period, and the final configuration after scheduled construction is completed. Four electric / diesel engine effluent pumps are covered by the same non-covered source permit governing the foul air systems. Limits on operational hours and emission opacity are included in the permit.

Foul air emissions for STI administered operations at the Sand Island WWTP are governed by Covered Source Permit No. 0216-06-C. This includes operations of the anaerobic digester, gas holder, sludge storage, centrifuge, dryer, and the pelletizer.

The existing odor control systems (OCS) at the Sand Island WWTP include the following:

1. Headworks OCS
2. Primary Clarifier OCS
3. Solids OCS
4. Headworks OCS (upgrade)

Electrical Power

The solids handling building return lift station (RLS) will be served by a City-owned 11.5 kV distribution system within the Sand Island WWTP. The system is serviced by two HEC0 11.5 kV feeder lines (Sand Island 1 and 2) that connect to a Primary Switching Station Building along Sand Island Parkway. See **Section 3.3.5 Electrical Systems** for further description. In the event of a utility power outage, a system of backup generators located throughout the plant automatically start and provide power to the pumps and essential equipment.

Water

Water is provided to the Sand Island WWTP through a 12-inch water main which is connected to a Board of Water Supply (BWS) 16-inch water main located along Sand Island Parkway.

2.2 PROJECT DESCRIPTION

Planned project improvements are described below. A site plan and section drawings are included as **Figure 2-3, New Solids Handling Building Return Lift Station Site Plan, Figure 2-4, New Solids Handling Building Return Lift Station Plan View, and Figure 2-5, New Solids Handling Building Return Lift Station Section.**

- The solids handling building RLS site is located immediately south of the existing solids handling building in a vacant area. From a plan view, solids handling building RLS improvements would not exceed 15 feet by 21 feet in area.
- The proposed lift station will be constructed underground and will consist of a compartment wet well containing two wet well chambers, each containing an electric powered submersible pump with 1 million gallons per day (mgd) capacity. Total facility capacity is designed to be 2 mgd, however normal operational capacity will be 1 mgd. The wet wells will be constructed of reinforced concrete and will extend approximately 15 feet below existing grade. The wet wells will receive residual flows from the condenser, Venturi

SECTION 2 – Project Description and Alternatives Considered

scrubber, and centrifuge that are part of the solids treatment processes, floor drains that receive process water, as well as condensate from the gas holding tank adjacent to the digester. Two wet wells are required to provide redundancy to perform routine maintenance and repairs on one of the wells while the other remains in operation. A sluice gate between the two wet wells will be used to balance flows during normal operations and to isolate the wells as necessary for maintenance and repair.

- Approximately 140 linear feet of 4-inch diameter force main piping will be installed above ground through the digester facility to convey condensate from the gas holding tank. Prior to leaving the immediate vicinity of the digester facility, the force main will be placed underground and discharged to a manhole to break the pressure. A total of approximately 300 linear feet of 4-inch, 6-inch, and 10-inch gravity lines will be installed underground to connect the sources of return flow from the Solids handling Building and gas holding tank to the RLS wet wells. The new gravity pipes are anticipated to be PVC material.
- The force main piping needed to connect the RLS to the WWTP headworks after the flow meter and sampler will be secured to the exterior of existing buildings. The force main is anticipated to be ductile iron material and no more than 10 inches in diameter.
- After completion of construction, above-ground improvements will include force main piping with various appurtenances, including pressure gauge, level transmitters, pressure transmitters, flow meter, miscellaneous valves, and a thrust block. The piping and instrumentation will be mounted to a concrete pad with metal hatch covers for access into the wet wells.
- Miscellaneous electrical work is also required to provide power to the system equipment. Power for the solids handling building RLS is provided by the Sand Island 1 and 2 11.5 kV lines. The project will be connected to the City-owned 11.5 kV onsite distribution system.
- Foul air from the solids handling building RLS will be piped and treated using the existing adjacent odor control system (OCS) operated by STI.
- Removable bollards will be erected around the improvements to provide protection from on-site vehicular traffic.
- Excavated materials will be disposed by storage at the Sand Island WWTP Soil Management Area. Some construction dewatering will be required for the excavation. Measures to minimize the extent of dewatering will be considered such as utilizing precast improvements and sealing of excavated areas. Dewatering effluent is anticipated to be processed through the WWTP and thus would not require an NPDES permit. Construction staging will occupy vacant space near existing stockpile areas near the project site within the confines of the WWTP.

SECTION 2 – Project Description and Alternatives Considered

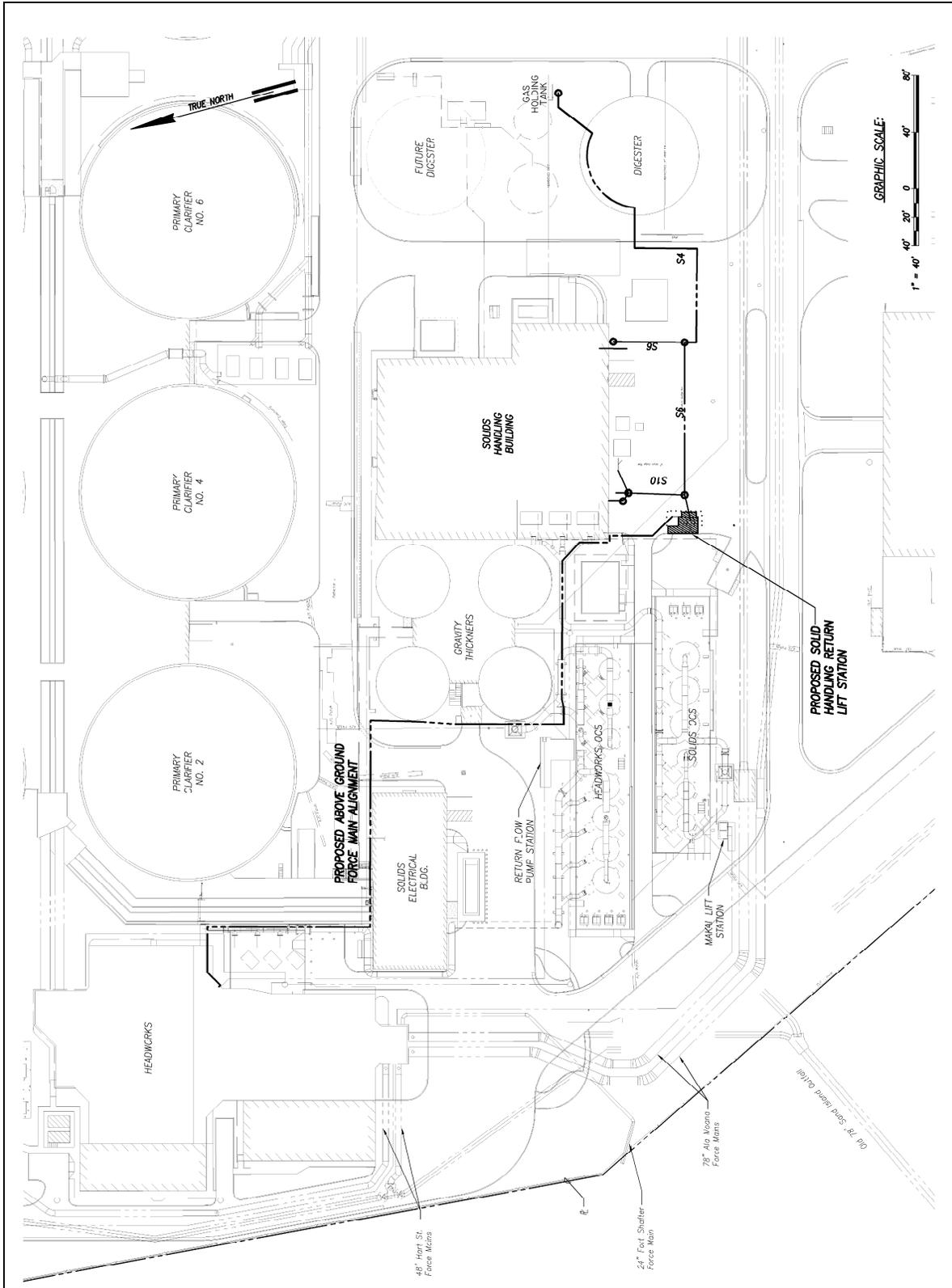


Figure 2-3 New Solids Handling Building Return Lift Station Site Plan

SECTION 2 – Project Description and Alternatives Considered

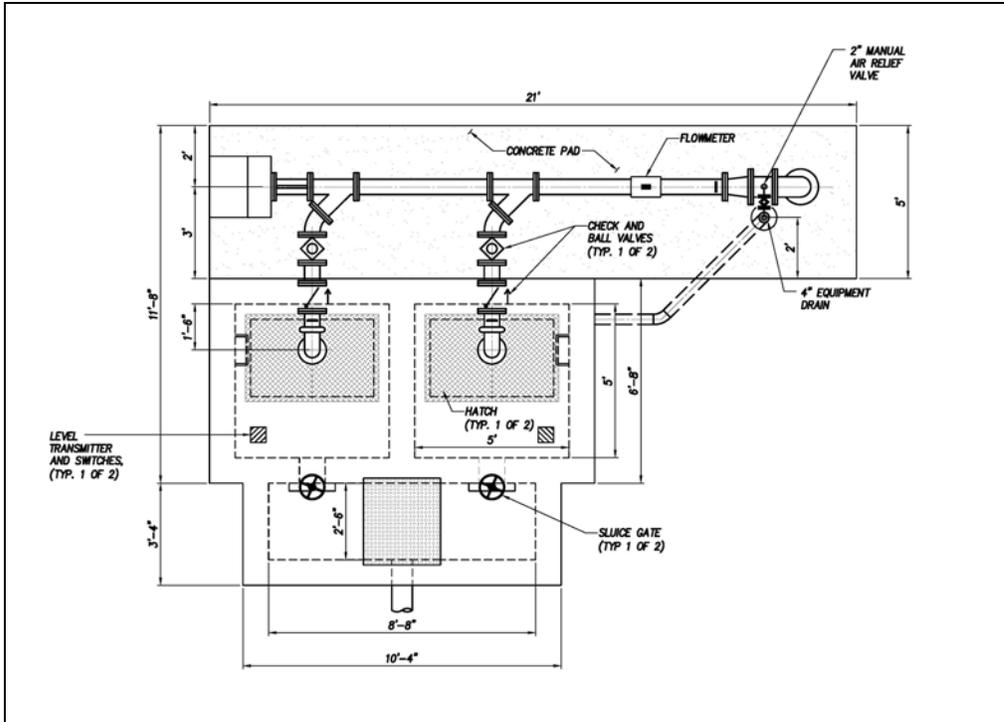


Figure 2-4 New Solids Handling Building Return Lift Station Plan View

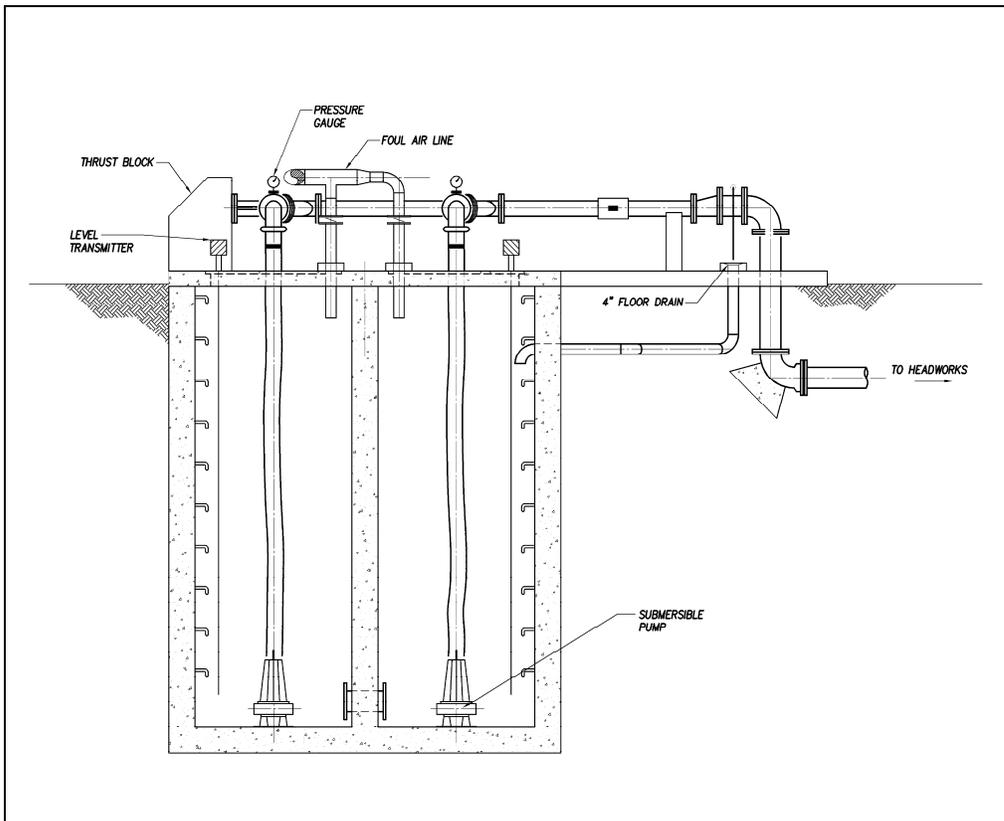


Figure 2-5 New Solids Handling Building Return Lift Station Section

2.3 PROJECT SCHEDULE AND COST

2.3.1 SCHEDULE

Completion of Permitting and Entitlements	June 2012
Start of Design-Build Construction	July 2012
Completion of Construction	March 2013

2.3.2 COST

The estimated construction cost for the planned new solids handling building RLS is \$2 million.

2.4 ALTERNATIVES CONSIDERED

2.4.1 NO ACTION

State legislation requires that a "no-action" alternative be considered to serve as a baseline against which potential actions can be measured. The no-action alternative would involve no effort to construct a new solids handling building RLS. Under this option, environmental impacts resulting from work activities would be averted and project costs would be spared. However, the "no-action" alternative would fail to provide the necessary additional WWTP operational capacity to collect and convey residual in-plant return flows. In addition, the no-action alternative would fail to meet WWTP operational requirements to segregate in-plant return flows from new flows, as required by NPDES permit conditions. For these reasons, the "no action" alternative was eliminated from further consideration.

2.4.2 DELAYED ACTION

The delayed action alternative would postpone construction of the solids handling building RLS to an unspecified future date. Under this alternative, environmental impacts resulting from work activities would be delayed, but are anticipated to be generally the same as with the proposed project. Project costs would also be postponed to a later date. It is reasonable to assume that future costs for labor and materials will be greater than present day costs due to inflation. Under this alternative, the capacity of the existing RFPS to handle in-plant return flows will remain restricted and could be exceeded before a new RLS is constructed at some future date. In addition, modifications to the in-plant return flow collection and conveyance systems necessary to ensure compliance with NPDES permit conditions would be delayed indefinitely. For these reasons, this alternative was eliminated from further consideration.

2.4.3 EXPANSION OF THE EXISTING RETURN FLOW PUMP STATION

This alternative involves expansion of the existing RFPS in order to handle all in-plant return flows. The existing RFPS consists of two wet wells, each containing two pumps with 1 million gallons per day (mgd) pumping capacity, for a total facility capacity of 4 mgd. Under this alternative, a new wet well and single submersible pump would be required to increase capacity by 1 mgd. With the expansion, the existing pumps would provide necessary system redundancy with 3 pumps operating under typical conditions and 2 pumps held in standby. While this alternative would meet the project objectives of

SECTION 2 – Project Description and Alternatives Considered

providing the necessary system capacity and accommodating the modifications required to segregate in-plant return flows from new flows, expansion of the existing RFPS is not feasible due to site constraints. The existing RFPS is located within a small area constrained by the adjacent gravity thickener facilities, headworks odor control systems, and access road to these facilities and the solids electrical building. There is insufficient space to construct an additional wetwell at this location. In addition, the existing RFPS pumps are the maximum size that will fit within the existing wet wells: there is insufficient space within the existing wet wells to add pumps or upsize the capacity of the existing pumps. As a further consideration, construction activities would require temporary shut down of the RFPS. For these reasons, this alternative was eliminated from further consideration.

SECTION 3 Description of Affected Environment

3.1 PHYSICAL ENVIRONMENT

3.1.1 CLIMATE

The project is located at Sand Island within an industrialized sector of urban Honolulu on the south shore of O‘ahu. Temperatures range from mid-70° F (degrees Fahrenheit) to the upper 80°s F with occasional reaches into the 90°+ F range (Atlas of Hawai‘i, 1998). The average annual temperature recorded at nearby Honolulu International Airport is 77.5° F.

Winds are primarily northeasterly tradewinds. Occasionally, during the winter months, storms are accompanied by winds from the south. Average wind speeds for Honolulu range from approximately 10 to 15 miles per hour with occasional gusts of 40+ miles per hour. (Hawai‘i State Data Book, 2009).

Rainfall for the Honolulu area ranges from approximately 4 to 5 inches monthly from November through January, to less than 1 inch during the drier summer months. Annual rainfall averages approximately 15 to 20 inches throughout the remainder of the year. Average relative humidity in Honolulu has historically ranged from a high of 77.2% during January, to a low of 64.8% which is typically reached in June. The average annual humidity level is approximately 69 to 70% (Atlas of Hawai‘i, 1998).

Impacts and Mitigation Measures

The proposed project will have no impacts on the existing climate of the region. Mitigation measures will not be required.

3.1.2 TOPOGRAPHY, GEOLOGY, AND SOILS

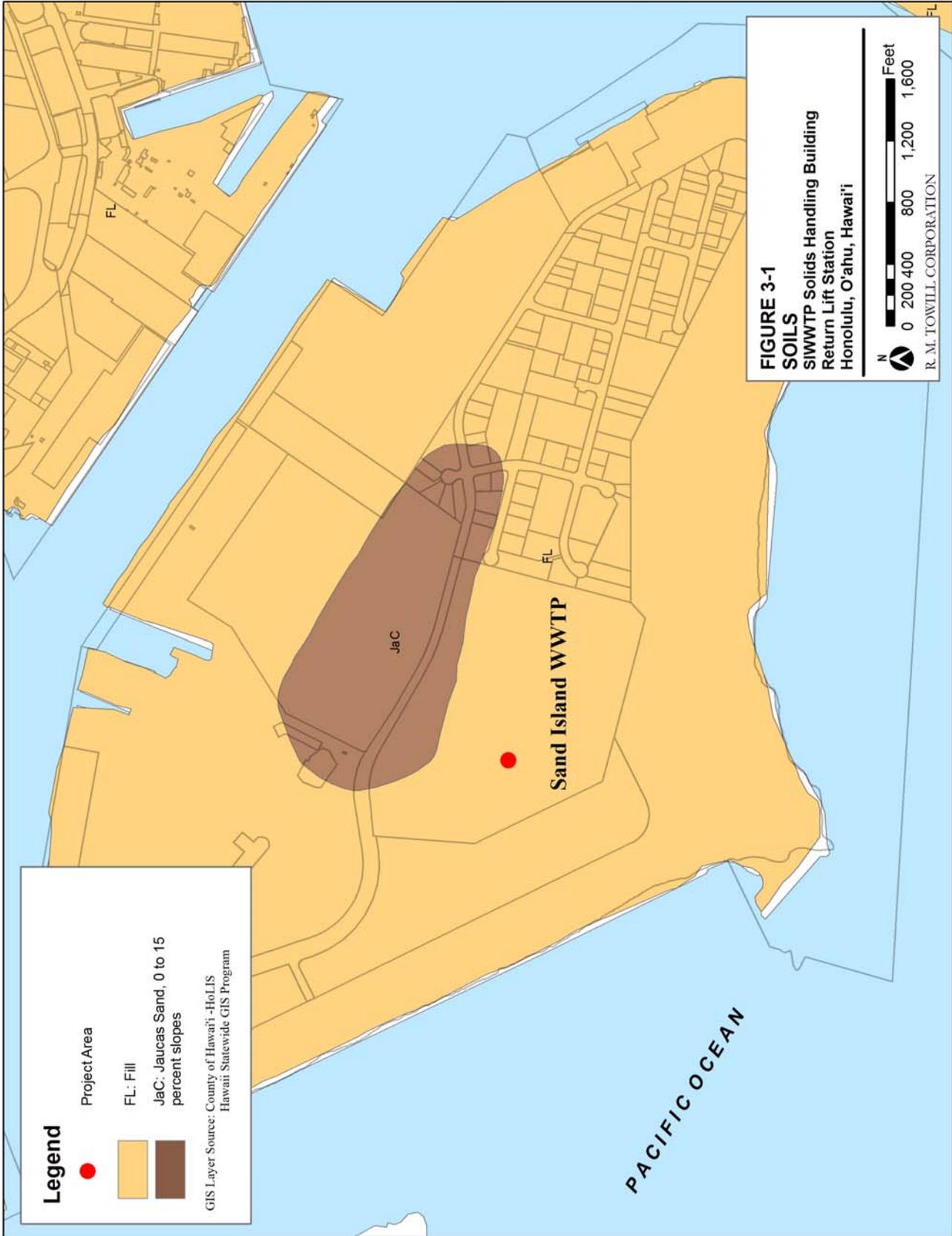
The proposed project will be constructed within the existing Sand Island WWTP on man-made terrain comprised of dredged fill material. The project site is virtually flat with ground elevation of 8 feet above mean sea level (msl). The existing grades were established during the original construction of the Sand Island WWTP.

Soils underlying the project site are identified as Fill Land, mixed (FL). Fill land, mixed soils occur mostly near Pearl Harbor and in Honolulu, adjacent to the ocean. It consists of areas filled with material dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources. This land type is used for urban development including airports, housing areas and industrial facilities (Soil Conservation Service, 1972). See **Figure 3-1, Soils**.

Impacts and Mitigation Measures

The proposed project will not have a significant effect on the topography or soils of the area. The new solids handling building return lift station will consist of a compartment well and 2 wet wells extending approximately 15 feet below grade. Above ground, the site will consist of piping and appurtenant fixtures and

SECTION 3 – Description of Affected Environment



instrumentation mounted in a concrete pad approximately 6 inches thick above finish grade. Excess soils resulting from excavation activities will be disposed by storage at the Sand Island WWTP Soil Management Area. Excavation will be required for construction of the subsurface wells and for installation of new pipes that will convey flows to the lift station.

3.1.3 SURFACE WATERS AND HYDROLOGY

There are no standing water bodies, streams, or other surface water features in the immediate vicinity of the project site. Rainfall and stormwater runoff from the site is directed to the Sand Island WWTP's existing storm drain system consisting of catch basins and underground piping and discharges into a man-made drainage ditch located at the north side of the facility. The drainage ditch begins approximately 125 feet east the existing Flotation Clarifier Nos. 7 and 8 and extends eastward approximately 650 feet to the edge of the treatment plant property, then northward for approximately 120 feet to a 6-foot by 8-foot box culvert that passes under the Sand Island Parkway and nearby cargo container yard located north of the WWTP, and discharges to Honolulu Harbor.

Impacts and Mitigation Measures

The project is not expected to have adverse effects on surface waters or ground waters. Best Management Practices (BMPs) will be installed and maintained during all phases of construction activities to ensure that sediments and other contaminants are not discharged in runoff water from the site. Excavation for the wet wells and gravity lines will require some dewatering. Measures to minimize the extent of dewatering will be considered such as utilizing precast improvements and sealing of excavated areas. Dewatering effluent will be processed through the WWTP. Work activities will occur on FEMA Zone X, thus are at very low risk for flood inundation.

3.1.4 AIR QUALITY

Hawai'i lies within the Northern Hemisphere Hadley Cell, which is responsible for persistent northeast trade winds. Consequently, air quality is relatively good with the exception of occasional Kona or leeward storms that produce a low pressure system that brings southerly winds and precipitation. The Sand Island area is located within an industrial area that generally receives favorable trades.

The State Department of Health maintains an air quality monitoring station near Sand Island Access Road, near the entrance to the Sand Island State Recreation Area. The station monitors for ozone (O₃), and PM_{2.5} (particulate matter 2.5 micron size or smaller), as well as wind speed and direction. Monitoring at this station consistently shows readings well in compliance with State and Federal air quality standards for the measured parameters. The most current published summary of State air quality data, which includes measurements from the years 2006 to 2008, records no instance where measured parameters at this station exceed air quality standards (DOH, 2008).

Impacts and Mitigation Measures

Dust and exhaust emissions will be generated from construction vehicles and equipment including backhoes, trucks, pile driving equipment, generators, fuel

tanks, etc., during construction. Mitigation of fugitive dust generated during construction will be handled through the use of periodic site watering and applicable on-site BMPs. Additional measures as provided in Hawai'i Administrative Rules (HAR) Chapter 11-60.1 - Air Pollution Control will also be followed and will include, but not be limited to, the following:

- The planning of project construction operations will focus on: minimizing the amount of dust-generating materials and activities; centralizing material transfer points and onsite vehicular traffic routes; and, locating potentially dusty equipment in areas of least impact;
- An adequate water source at the site will be provided prior to start-up of construction activities for dust control wet-down application;
- Disturbed soils will be stabilized as soon as possible by means of grassing, hydromulch, geo-fabric, or other methods of cover;
- Dust will be controlled by stabilizing ground conditions at project entrances to prevent dirt tracking onto adjacent access roads, and by covering or wetting down construction vehicles carrying dust-generating materials; and,
- Adequate dust control measures will be provided on weekends, after hours, and prior to daily start-up of construction activities.

Vehicle and construction equipment exhausts are a source of air pollution. Mitigation of potential adverse effects associated with use of construction equipment, fuel tanks, and vehicle exhausts will be handled through adherence to applicable Federal, State and County regulations. As required, all machinery and vehicles will be required to be in proper working order with appropriate use of mufflers.

Regarding odor issues, it is noted that the solids handling building return lift station will be connected to the existing STI-administered odor control system on the WWTP site. The existing system has sufficient capacity to accommodate the proposed improvements. There is an existing Covered Source Permit (Permit No. 0216-06-C). Minor modification to the permit may be needed to accommodate slight changes in volume and composition of odors.

3.1.5 NOISE

The project site is subject to noise generated from the existing Sand Island WWTP. Other existing sources of noise include overflights of aircraft within the 70 DNL (decibel noise level) noise contour of Honolulu International Airport; industrial activities from light industrial parcels located east of the site involving auto repair, metals recycling and recovery, and related activities; and traffic from the nearby Sand Island Parkway.

Impacts and Mitigation Measures

Construction activity will result in short-term noise impacts associated with the proposed project. Construction related noise will be generated by use of construction equipment and machinery such as bulldozers, backhoes,

compressors, and pile driving equipment. Management of short term noise impacts will involve use of mufflers and related noise reduction technologies. As required, construction equipment with mufflers in poor working condition shall be replaced or repaired. Noise generated by the construction activities will be similar in character and intensity as the existing noise conditions in the surrounding industrial areas and is not expected to have an adverse effect.

Construction noise will cease at project completion. Long-term noise effects are not expected to result from the operation of the new solids handling building return lift station following completion of construction. Pumps are electrically powered, housed within the subsurface wet wells, and would be in use on an intermittent basis. The new equipment will be operated at levels that are consistent with existing rules and standards of the State and County, including HAR, Chapter 11-46, Community Noise Control, which provides for the prevention, abatement and control of noise pollution in the State from stationary, agricultural, and industrial activities.

3.1.6 NATURAL HAZARDS

Flood

As shown on FIRM panel 15003C0361G, dated January 19, 2011, the project site is located within flood zone X, which designates areas outside of the 0.2 percent annual chance (500 year) floodplain. See **Figure 3-2, FEMA-FIRM Map**.

Tsunami

A tsunami involves the generation of a series of destructive ocean waves that can affect all shorelines. These waves can occur at any time with limited or no warning. Persons in low lying shoreline or beach areas are advised to immediately go to higher ground.

On the Tsunami Evacuation Zone Map prepared by the Department of Emergency Management, the proposed project site is located outside of the evacuation boundary within an area considered to be safe from wave action and that would not likely be subject to inundation by a tsunami. See **Figure 3-3, Tsunami Evacuation Zone**.

Seismic Hazard

The Islands of Hawai‘i experience thousands of earthquakes each year but most are so small that they can only be detected by instruments. Some are strong enough to be felt and a few cause minor to moderate damage. Most of Hawai‘i’s earthquakes are directly related to volcanic activity and are caused by magma moving beneath the earth's surface. The seismic design category as defined in the International Building Code 2003 (IBC) is a classification assigned to a structure based on its seismic use group and the severity of potential earthquake ground motion at the site. The seismic design category recognizes

SECTION 3 – Description of Affected Environment

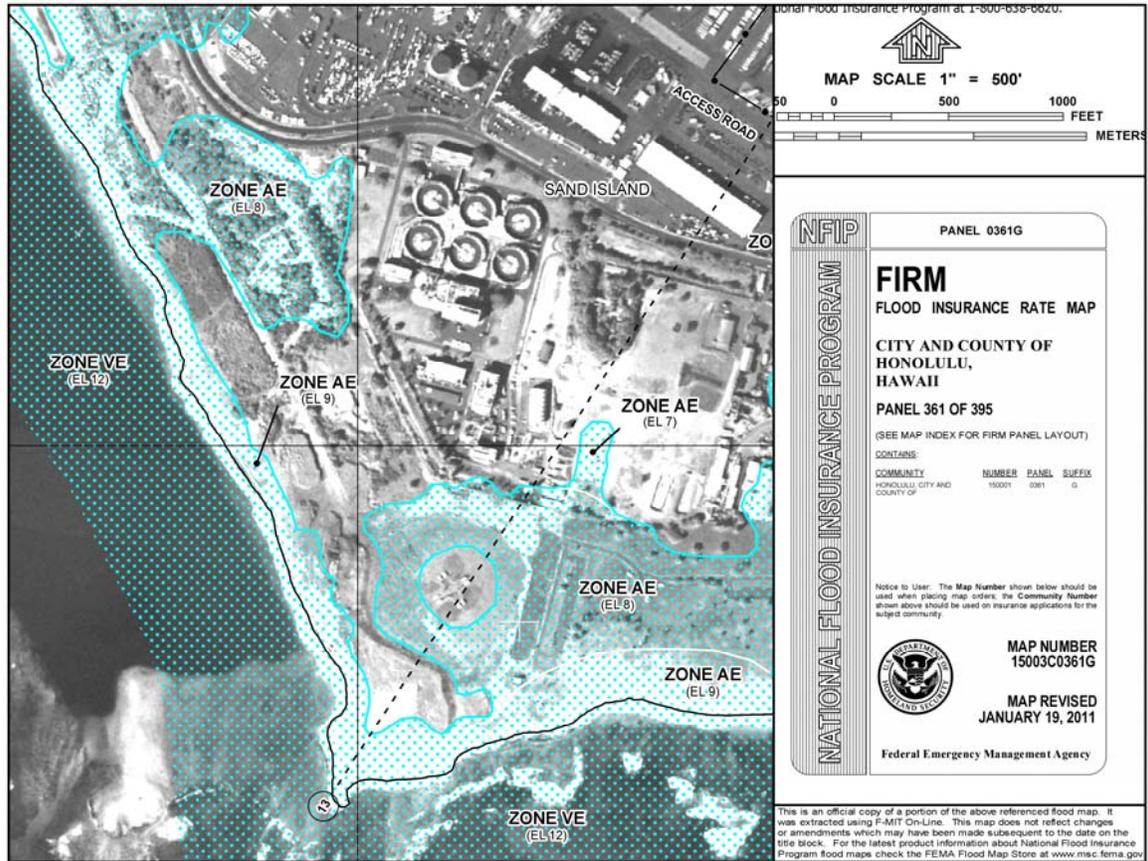


Figure 3-2, FEMA – FIRM Map

Source: FEMA FIRM Panel 15003C0361G (January 19, 2011)

that building performance during a seismic event depends not only on the severity of sub-surface rock motion in a particular location, but also on the type of soil upon which a structure is founded. The seismic design category is thus a function of location (seismic zone), building occupancy (seismic use group), and soil type (site class). There are four seismic design categories: A, B, C and D with D having the highest seismic load effect on a structure and A having the lowest seismic load effect. The new solids handling building return lift station will have a seismic design category rating of D, the highest load effect on a structure.

The seismic use group in the IBC corresponds to the occupancy importance factor in seismic design. For new wastewater PS structures, the seismic use group III should be considered (Chapter 16, Table 1604.5 ROH). Seismic use group III structures are those having essential facilities that are required for post earthquake recovery and those containing substantial quantities of hazardous substances. The design of the proposed solids handling building return lift station will be in accordance with all applicable CCH standards.

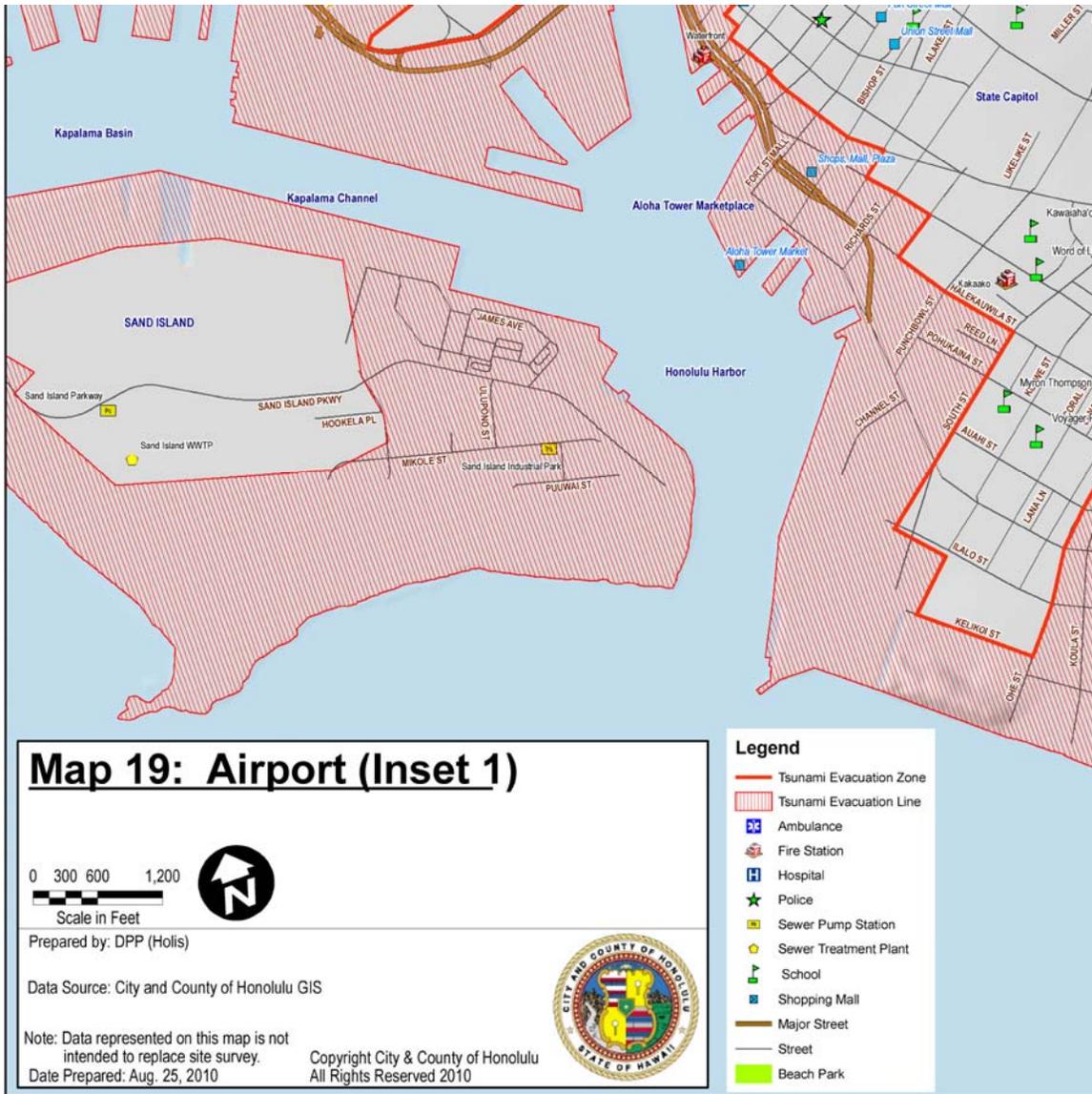


Figure 3-3, Tsunami Evacuation Zone

Hurricane and Wind

The Hawaiian Islands are seasonally affected by Pacific hurricanes from the late summer to early winter months. The State has been affected twice since 1982 by significant hurricanes, ‘Iwa in 1982 and ‘Iniki in 1992. During hurricanes and storm conditions, high winds cause strong uplift forces on structures, particularly on roofs. Wind-driven materials and debris can attain high velocity and cause devastating property damage and harm to life and limb. It is difficult to predict these natural occurrences, but it is reasonable to assume that future events will occur. The project area is, however, no more or less vulnerable than the rest of the island to the destructive winds and torrential rains associated with hurricanes.

Impacts and Mitigation Measures

The site is located at elevation 8 feet above msl within FEMA flood zone X. No adverse effects to human health or safety associated with flooding are anticipated.

Tsunami and tsunami related flooding in the project area are unlikely due to the fact that the project site is located outside of the Tsunami Evacuation Zone. The project is not expected to be adversely affected and no adverse effects are expected to result from construction and operation of the new solids handling building return lift station. No further mitigation measures related to the potential threat of a tsunami are proposed.

The potential for hurricanes, while relatively rare, is present. Except for piping, there are no other above ground structures subject to hurricane force winds. To safeguard against hurricane damage, the new facility will be designed in compliance with applicable 2003 IBC standards for wind exposure rating C, and will carry a design wind load of 105 mph (ROH Chapter 16).

Earthquakes pose a threat throughout Hawai‘i, but disruptive seismic events are relatively uncommon in this region. Design and construction of the proposed solids handling building return lift station will be in accordance IBC design category rating D and Seismic Use Group III, per CCH standards. No further mitigation measures related to seismic disturbance are proposed.

3.1.7 FLORA AND FAUNA

The proposed project is located within an existing wastewater treatment facility in a highly altered environment. Consequently, no rare, threatened or endangered flora or fauna species have been observed to exist at the project site. Species most commonly frequented at the site are typical of urbanized areas and consist of common introduced flora and fauna. Several introduced fauna including the Common Indian Mynah (*Acridotheres tristis*), House Sparrow (*Passer domesticus*), Spotted or Lace-necked Dove (*Streptopelia chinensis*), Zebra Dove (*Geopelia striata*), and Cardinal (*Cardinalis cardinalis*) have been observed at the project location. Mammals such as stray cats, rats and mice have also been observed in the vicinity. Vegetation at the project site is limited to sparse, opportunistic growth of introduced weeds and grasses, including Centipede Grass (*Eremochloa ophiuroides*) and Bermuda Grass (*Cynodon dactylon*). No other landscape plantings or natural vegetation occurs in the project vicinity.

Some migratory seabirds and native waterfowl are known to visit areas within the wider coastal region. Endangered native species such as the Hawaiian hoary bat (*Lasiurus cinereus semotus*) and Short-eared owl or Pueo (*Asio flammeus sandwichensis*) do occur on rare occasions in the lowlands of O‘ahu, but due to the high level of development and human activity are highly unlikely to visit areas where project activities will occur.

Impacts and Mitigation Measures

Potential for adverse effects to flora and fauna is not anticipated. The project site is located within the developed, industrial environment of the Sand Island WWTP. No listed or protected plant species are known from the project area. Rare, threatened, or endangered fauna are not known to utilize the site for either habitat or foraging purposes. Although there is no evidence of migratory seabirds and native waterfowl species using the project site for breeding or habitation, some are known to visit areas within the wider project study area.

Construction activities may temporarily disrupt routine behavior of common faunal species in the immediate project area, but will not result in permanent displacement, or adversely affect regional distribution of affected fauna. Work will be conducted during daylight hours. No nighttime lighting will be needed or implemented during or after construction. Once project activities are complete, faunal activity in the vicinity of the work site is expected to return to pre-existing conditions.

No mitigation measures are proposed.

3.2 SOCIO-ECONOMIC ENVIRONMENT

3.2.1 LAND USE

The lift station improvements will occupy a maximum footprint of 15 feet by 21 feet near the center of the Sand Island WWTP. Surrounding WWTP facilities include the solids handling building, gravity thickeners, digester, clarifiers and solids odor control systems. Uses on the surrounding properties include industrial harbor facilities to the north; the Sand Island Industrial Park to the east; the Sand Island State Recreation Area to the south-east and immediate south of the WWTP; and the State Department of Transportation, Harbors Division container yard to the west. The project site is located on land zoned I-3, (industrial waterfront) by the CCH. The existing Sand Island WWTP and proposed solids handling building return lift station are permitted “public uses” in the I-3 zoning district.

Impacts and Mitigation Measures

The proposed new solids handling building return lift station comprises a minor addition to the existing Sand Island WWTP facilities. The new solids handling building return lift station collects excess liquids from the washdown, condenser, Venturi scrubber, and centrifuge operations, and condensate from the gas holding tank at the digester operations. The liquids are then pumped near the start of the wastewater treatment process to be cleaned. The proposed project will not result in an expansion of WWTP operations. The new solids handling building return lift station is relatively small in scope and compatible in use with the existing WWTP facilities. It will not result in significant changes in land use at the WWTP and will not detract from or induce changes to the existing land uses on the surrounding properties. No mitigation measures are proposed.

3.2.2 HISTORIC AND ARCHAEOLOGICAL RESOURCES

The project site is situated within artificially created Fill Land, mixed (FL) which was entirely submerged by the ocean during pre- and post-contact periods. In addition, the project site was subject to extensive ground disturbance and modification during construction of the existing Sand Island WWTP. As a result, no archaeological sites are known or expected to be encountered at the project site.

Impacts and Mitigation Measures

The proposed project is not expected to result in potential for negative adverse effects on archaeological resources. This is due to the artificially created, mixed fill soils found at the project site. A review of records with the Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD), also indicates that there are no known historic sites at the project location (See **Appendix A: Letter from State Historic Preservation Division, March 5, 2001**). However, in the event of unexpected discovery of historic or archaeological resources, the SHPD will be immediately notified for appropriate response and action.

3.2.3 CULTURAL RESOURCES AND PRACTICES

The project site and surrounding Sand Island WWTP facility are not used for traditional, customary, or cultural practices. The project site is located on artificially created land comprised of mixed fill soils in an area that was submerged by the ocean until modern times. The site was heavily modified during construction of the Sand Island WWTP. Plants found at the site are introduced grass and weed species not associated with cultural gathering or use activities. The artificial creation and developed condition of the site is not conducive to the presence of wahi pana (storied place) or other sites associated with cultural practices.

Impacts and Mitigation Measures

Based on the above, the potential for adverse effects on traditional and cultural practices is not anticipated. Construction of the new solids handling building return lift station will not disturb traditional sacred sites or traditional cultural objects; will not result in the degradation of resources used by native Hawaiians for subsistence or traditional cultural practices; will not obstruct landforms or wayfinding features; and will not result in loss of access to the shoreline or other areas customarily used by Hawaiians or others for resource gathering or traditional cultural practices. No mitigation measures are proposed.

3.2.4 SCENIC AND VISUAL RESOURCES

The Sand Island WWTP is located in an industrial harbor area containing large commercial / industrial buildings, fuel tanks, and tall cranes used for container shipping operations. The WWTP facilities include several prominent structures, including clarifier tanks, gas tank (40 feet tall), incinerator building (80 feet tall), and anaerobic digester tower (108 feet tall). These facilities are visible from the ocean, from Ke‘ehi Lagoon, from various vantages within urban Honolulu and the immediate surrounding properties, and from areas with elevations exceeding 100 feet above sea level, including Punchbowl,

Pacific Heights, Alewa Heights, Upper Kalihi, Tantalus/Roundtop, Diamond Head, and high-rise buildings along Ala Moana Boulevard and Nimitz Highway. Within view planes from the urban coastal areas laterally down the shoreline or towards the sea, the Sand Island WWTP facilities are subordinate to the much taller cargo facility loading cranes (approximately 250 feet in height) and are consistent in appearance with other industrial facilities on Sand Island.

Impacts and Mitigation Measures

The project will not adversely affect scenic and visual resources in the project area. The new solids handling building return lift station will not obstruct or degrade lateral coastal views or mauka-makai views from Sand Island Parkway, the Sand Island State Recreation Area, or other areas in the vicinity of the Sand Island WWTP. The proposed site for the new solids handling building return lift station is located near the center of the Sand Island WWTP adjacent to the existing solids handling building. The majority of the facility, including compartment well, wet wells, and two submersible pumps, will be installed below ground. Above-ground features that will be visible include piping, valves, and appurtenant instrumentation. Force main piping from the solids handling building return lift station to the headworks will be attached above ground to existing buildings and structures. The above ground features associated with the solids handling building return lift station will be significantly smaller than the surrounding WWTP facilities, and will be consistent with the industrial character of the existing built environment. The height of the new above-ground features of the solids handling building return lift station will be well below the maximum building height of 60 feet for the underlying zoning district.

3.2.5 RECREATIONAL FACILITIES

Located on Sand Island at the entrance to Honolulu Harbor, the Sand Island State Recreation Area (SRA) is an approximately 141-acre coastal recreational area managed by the DLNR, Division of State Parks (DSP). Sand Island was extensively used by the military during WWII for coastal defense with bunkers and lookout towers still present throughout the SRA. Sand Island was known as Quarantine Island during the nineteenth century when it was used to quarantine ships believed to hold contagious diseases. During World War II, Sand Island was used to camp Japanese-American citizens and foreign nationals from Germany, Italy, and other countries as part of the wartime effort.

Approximately 97 acres of the SRA, at the east end of Sand Island adjacent to the Honolulu Harbor Channel, is existing developed park area. Facilities in this area include picnic tables, BBQs, campgrounds, open lawn passive recreation areas, baseball diamonds, exercise and play apparatus, multi-use paths, covered pavilions, shade trees, and comfort stations. The park provides a wide sand beach that is over a half-mile long.

The remaining approximately 44 acres of the SRA extends along the south and southwest facing shores of Sand Island, and includes the lands makai of the Sand Island WWTP. The area is relatively undeveloped. Existing facilities include a marine education and

training center, boat ramp, canoe pavilion, and parking at the mouth of the Kapalama Basin Kalihi Channel. The remaining area, comprising approximately 30 acres, is currently used as an off-highway vehicle (OHV) recreation area under a pilot project managed by the DLNR Na Ala Hele program.

There are no other recreational resources in the vicinity of the project site.

Impacts and Mitigation Measures

The proposed project will not have an adverse effect on recreational resources. The project site near the center of the Sand Island WWTP will not be visible from the Sand Island State Recreation Area and will not affect activities at the park. Operation of the new solids handling building return lift station following construction will not result in noticeable change from existing operations at the WWTP facility. Public access and use of the park and shoreline areas will remain unaffected by project activities. No mitigation measures are proposed or anticipated to be required.

3.2.6 FIRE, POLICE AND MEDICAL SERVICES

The nearest fire station is Kaka‘ako Fire Station located on Queen Street approximately 1 mile from the project site. The closest Police Station is on South Beretania Street, roughly 2 miles from the project site. And the closest hospital is Queen’s Medical Center, approximately 1.5 miles from the project site.

Impacts and Mitigation Measures

The proposed project is not expected to have an adverse effect on or result in an increase in calls for fire, police or medical services. Planned improvements will not result in an increase in population. Emergency vehicle access will be maintained throughout the construction site for the duration of the project. Operation of the solids handling building return lift station following construction will not result in significant or noticeable change from existing operations at the WTP facility. No mitigation measures are required or recommended.

3.2.7 SOCIO-ECONOMIC CONDITIONS

The service area for the existing Sand Island WWTP is metropolitan Honolulu from Moanalua-Aliamanu to Niu Valley-Paiko Peninsula and includes the U.S. Army facilities at Fort Shafter and Tripler Army Medical Center. The facility serves a combined urban resident and visitor population of approximately 403,000. From 2000 to 2008, the service area experienced only a 0.8 percent growth in population, the smallest growth among all counties in Hawai‘i. The rest of O‘ahu gained 5.1 percent in population during the same time period, and statewide population growth was 6.3 percent. The median age among residents in the service area in 2010 is 43 years, three years older than the county-wide median age among residents.

Households in the Sand Island WWTP service area somewhat smaller than households islandwide (2.5 versus 2.9 persons per household, respectively). This finding is consistent with the older population, and therefore fewer children present in households. The

number of housing units in the service area has remained fairly consistent over the past several years, increasing by less than one percent between 2005 and 2008. Countywide, the number of housing units has increased at double the rate during the same time period. A large proportion of the residents of the service area live in high-rise accommodations, with 44 percent of all the housing units in structures with 20 or more units. These units also tend to be older, with fully half of them constructed more than 30 years ago.

The Sand Island WWTP service area contains the central business district, Waikīkī and numerous other tourist attractions, industrial areas at Sand Island, Kaka‘ako, and Mapunapuna, and is home to approximately three-quarters of jobs statewide. Waikīkī alone accounts for an estimated eight percent of Hawai‘i’s Gross State Product. This region also contains Honolulu Harbor and the Honolulu International Airport, which have relatively small work forces and total revenues, but together facilitate nearly all of the commercial activity in the State. While the number of jobs in the Honolulu area is expected to remain generally consistent for the foreseeable future, the composition of job types will likely change as more commercial and government growth occurs in west and central O‘ahu.

Impacts and Mitigation Measures

The project will not have an adverse effect on area demographics or economic conditions. The new solids handling building return lift station collects excess liquids from the washdown, condenser, Venturi scrubber, and centrifuge operations, and condensate from the gas holding tank at the digester operations. The liquids are then pumped back near the start of the wastewater treatment process to be cleaned. The proposed project will not result in an expansion of WWTP operations. The proposed improvements to the treatment plant will not accommodate or induce an increase or change in population. Construction of the new solids handling building return lift station will result in temporary, positive economic activity in the form of construction jobs and material procurements.

Construction effects will be temporary and will cease upon project completion. Facility operations following construction will remain generally unchanged from existing conditions. No mitigation measures are recommended or required.

3.3 INFRASTRUCTURE AND UTILITIES

3.3.1 TRAFFIC AND TRANSPORTATION SYSTEMS

Existing Traffic Conditions

Sand Island Parkway Road (State Highway 64) is the major thoroughfare serving Sand Island. It is the continuation of Sand Island Access Road, which extends from Nimitz Highway to and across Bascule Bridge, which crosses the Kalihi Channel between Sand Island and Kalihi Kai. The majority of the traffic near the project site is generated by surrounding activities, including the transportation of shipping containers from Honolulu Harbor to other locations; the U.S. Coast Guard Station Honolulu; the Sand Island State

Recreation Area; and a number of small businesses and industries located in the area.

Impacts and Mitigation Measures

No significant increase in traffic associated with the proposed solids handling building return lift station project is expected. On a short-term basis, construction-related traffic may be temporarily noticeable on Sand Island Access Road. However due to the limited scope of the project, construction-related traffic will not significantly alter the total volume of traffic on Sand Island Access Road. The contractor will be required to keep all construction vehicles in proper operating condition and ensure that material loads are properly secured to prevent dust, debris, leakage, or other adverse conditions from affecting public roadways. No other mitigation measures are required or recommended.

Should any proposed construction activities require the temporary closure of a traffic lane, parking, etc., on a local street, a street usage permit from the Department of Transportation Services will be obtained by the Department of Design and Construction.

3.3.2 DRAINAGE SYSTEM

Rainfall and stormwater runoff from the site is directed to the Sand Island WWTP's existing storm drain system consisting of catch basins and underground piping and discharges into a man-made drainage ditch located at the north side of the facility. The drainage ditch begins near the existing Flotation Clarifier Nos. 7 and 8 and extends eastward approximately 700 feet to the edge of the treatment plant property, then northward for approximately 120 feet to a 6-foot by 8-foot box culvert. The box culvert passes under the Sand Island Parkway and nearby cargo container yard located north of the WWTP, and discharges to Honolulu Harbor.

Impacts and Mitigation Measures

No adverse effects to the drainage system or receiving waters are expected to result from the project. The project does not involve any modifications to the existing drainage system and will not result in an increase in impervious area. The project contractor will employ construction stormwater BMPs to prevent sediment or other pollutants from discharging in stormwater runoff from the site. The construction site and staging area will be smaller than one acre, therefore a National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit is not required. Excavation for the wet wells will require some dewatering. Measures to minimize extent of dewatering will be considered such as utilizing precast improvements and sealing of excavated areas. Dewatering effluent will be processed through the WWTP. Also, any water from hydrotesting procedures will be processed through the WWTP. Thus, NPDES Construction Dewatering and Hydrotesting permits are not anticipated to be required as well.

3.3.3 WATER SYSTEM

Water is provided to the Sand Island WWTP through an existing 12-inch water main which is connected to a Board of Water Supply (BWS) 16-inch water main located along Sand Island Parkway.

Impacts and Mitigation Measures

Construction and use of the proposed project will not disrupt or otherwise adversely affect the water system. Construction activities will require use of water for dust control, vehicle wash down, concrete mixing, general housekeeping activities, and for pipe pressure testing. These uses will be intermittent and of short duration and will cease upon project completion. Quantities of water required for these uses are relatively minor. The existing water system has sufficient capacity to accommodate the temporary demands from construction activities. Following construction, operation of the new solids handling building return lift station will require water use for wash down as part of periodic maintenance, however additional water use is not required for normal operation of the solids handling building return lift station. No additional mitigation measures are required or recommended.

The existing water system is adequate to accommodate the proposed solids handling building return lift station. Water use for wash down will be infrequent and can be handled by use of existing hose bibs on the property.

3.3.4 WASTEWATER SYSTEM

Wastewater generated by personnel and maintenance activities at the Sand Island WWTP is conveyed to the makai lift station located within the Sand Island WWTP property. Influent is then pumped through an 8-inch force main directly to the Sand Island WWTP headworks. The facility provides primary wastewater treatment.

The treatment process is described in **Section 2.1.3**. Treated effluent is disposed through a deep ocean outfall. The solids handling building, located close to the project site, contains toilet and wash basin for use by facility personnel.

Impacts and Mitigation Measures

Construction and use of the proposed project will not disrupt or otherwise adversely affect wastewater systems. The new solids handling building return lift station will collect excess liquids from the washdown, condenser, Venturi scrubber, and centrifuge operations, and condensate from the gas holding tank at the digester operations. The liquids are then pumped back near the start of the wastewater treatment process to be cleaned. The proposed project will not result in an expansion of WWTP operations. Construction activities will not generate a significant quantity of wastewater. Construction personnel will have access to existing restroom facilities or be provided with Port-a-Johns. No other mitigation measures are recommended or required.

3.3.5 ELECTRICAL SYSTEMS

Electrical service for customers on Sand Island is provided by HECO. Sand Island is served by two HECO 46kV transmission lines, Iwilei 1 and 2. These two 46 kV circuits are run overhead through Kalihi Kai, cross Kalihi Channel as submarine cables, and continue underground to the HECO Sand Island Substation located near the east end of Bascule Bridge, adjacent to Kalihi Channel. The Sand Island Substation steps the 46 kV transmission voltage down to 11.5 kV for distribution on Sand Island. The 11.5 kV distribution feeders are designated Sand Island 1 and 2. The feeder lines are overhead lines supported on utility poles.

The two 46 kV lines have also recently been extended from the HECO Sand Island Substation to the Mokuone Substation to support the increasing loads at the Sand Island WWTP. Mokuone Substation steps the 46 kV transmission voltage down to 11.5 kV for distribution on Sand Island. The two 11.5 kV distribution feeders from the Mokuone Substation are designated as Mokuone 1 and 2.

On-site electrical power distribution systems at the Sand Island WWTP consist of a combination of underground HECO-owned and City-owned 11.5 kV, 3-phase systems serviced by the Mokuone 1, and Sand Island 1 and 2 feeder lines. The solids handling building return lift station would be served by the City-owned 11.5 kV distribution system. The system is serviced by the Sand Island 1 and 2 11.5 kV feeders which connect to primary switch gear located in the Primary Switching Station Building along Sand Island Parkway. The main switchgear then feeds City-owned and maintained 11.5 kV feeders, transformers, and primary distribution equipment within the Sand Island WWTP. A single HECO meter located within the primary switchgear is used to measure use.

In the event of a utility power outage, a system of backup generators located throughout the Sand Island WWTP automatically start and provide power to the pumps and essential equipment.

Impacts and Mitigation Measures

Construction of the solids handling building return lift station will not adversely affect the provision of electrical power at the facility. The existing HECO system has adequate capacity to meet the power requirements during construction activities. Following construction, electrical power will be required for the new solids handling building return lift station although power demand will be relatively low and intermittent in nature. No mitigation measures are required or recommended.

3.3.6 SOLID WASTE DISPOSAL

Solid waste collection, transport and disposal operations are the responsibility of the CCH ENV Refuse Division. Solid waste is collected and disposed of at either the Waimānalo Gulch Landfill in the 'Ewa district, or the H-Power facility at Campbell Industrial Park. PVT Land Company operates a privately owned and operated, licensed solid waste facility for recovery of recyclable materials and disposal of construction and demolition materials. The PVT Landfill accepts waste on a pre-arranged basis from

SECTION 3 – Description of Affected Environment

registered contractors. Waste loads are screened to remove recyclable materials and the remaining wastes are landfilled.

Impacts and Mitigation Measures

Construction activities will result in the generation of small amounts of construction and demolition debris. Construction and demolition debris will be disposed of at the PVT Landfill in accordance with CCH and State DOH regulations and provisions of the PVT facility license. Non-construction solid waste generated by project activities may be collected and disposed at the Waimānalo Gulch Landfill or H-Power. Excess soils resulting from excavation activities will be disposed by storage at the Sand Island WWTP Soil Management Area.

SECTION 4

Relationship to Land Use Plans and Policies

4.1 THE HAWAI‘I STATE PLAN

The Hawai‘i State Plan, adopted in 1978, and promulgated in HRS, Chapter 226, consists of three major parts:

Part I, describes the overall theme including Hawai‘i’s desired future and quality of life as expressed in goals, objectives, and policies.

Part II, Planning Coordination and Implementation, describing a statewide planning system designed to coordinate and guide all major state and county activities and to implement the goals, objectives, policies, and priority guidelines of the Hawai‘i State Plan.

Part III, Priority Guidelines, which express the pursuit of desirable courses of action in major areas of statewide concern.

The proposed project is consistent with the objectives and policies of the Hawai‘i State Plan. Specifically, the proposed action will provide a new solids handling building return lift station which collects excess liquids from the washdown, condenser, Venturi scrubber, and centrifuge operations, and condensate from the gas holding tank at the digester operations. The liquids are then pumped back near the start of the wastewater treatment process to be cleaned. Described below are sections of the Hawai‘i State Plan’s goals, objectives, and policies that are relevant to the proposed action.

§226-15 Objectives and policies for facility systems--solid and liquid wastes. (a) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:

(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.

(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.

(b) To achieve solid and liquid waste objectives, it shall be the policy of this State to:

(1) Encourage the adequate development of sewerage facilities that complement planned growth.

(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.

(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes. [L 1978, c 100, pt of §2; am L 1986, c 276, §14]

The proposed project supports the State Plan objectives and policies related to the adequate development of sewerage facilities. The project will provide an additional step in the wastewater process which aids in the proper treatment and disposal of liquid waste.

4.2 STATE LAND USE LAW

The State Land Use Commission classifies all lands in the State of Hawai‘i into one of four land use designations: Urban, Rural, Agricultural and Conservation. The project site is located in the State Land Use Urban District. Wastewater treatment facilities are an approved public use within this District. Land uses within the Urban District are regulated through the City and County of Honolulu (CCH) Land Use Ordinance, Chapter 21, Revised Ordinances of Honolulu (ROH). No action from the State Land Use Commission is required to implement the proposed project. See **Figure 4-1, State Land Use District**.



4.3 CITY AND COUNTY OF HONOLULU (CCH) GENERAL PLAN

The General Plan, a requirement of the CCH Charter, is a written commitment by CCH to a future for the Island of O‘ahu. The current plan, approved in 2006, is a statement of the long-range social, economic, environmental, and design objectives and a statement of broad policies which facilitate the attainment of the objectives of the plan.

Wastewater facilities are considered utilities. Therefore, the most relevant section of the General Plan is Section V, entitled “Transportation and Utilities”.

Section V, Transportation and Utilities

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

Policy 3 - Encourage the development of new technology which will reduce the cost of providing water and the cost of waste disposal.

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

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

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

Policy 2 - Provide improvements to utilities in existing neighborhoods to reduce substandard conditions.

Policy 3 - Plan for the timely and orderly expansion of utility systems.

Objective D: To maintain transportation and utility systems which will help O‘ahu continue to be a desirable place to live and visit.

Policy 1- Give primary emphasis in the capital-improvement program to the maintenance and improvement of existing roads and utilities.

Policy 2 - Use the transportation and utility systems as a means of guiding growth and the pattern of land use on O‘ahu.

Policy 4 - Evaluate the social, economic, and environmental impact of additions to the transportation and utility systems before they are constructed.

Policy 5 - Require the installation of underground utility lines wherever feasible.

The proposed project is consistent with Section V, Objective B, concerning environmentally-sound utility systems. Implementation of the project will promote safe, efficient, and environmentally sensitive waste disposal. Objective C is aimed at maintaining a high level of service for all utilities under the jurisdiction of CCH, including wastewater collection and treatment. The new solids handling building return lift station will aid in providing the means to maintain a high level of infrastructure utility service. With regard to Objective D, maintaining utility systems, the planned improvements are intended not only to maintain, but to improve, wastewater treatment process.

4.4 CCH ZONING AND LAND USE ORDINANCE

The project site is located in the CCH I-3 (Waterfront Industrial) zoning district, as defined in Chapter 21, ROH, the “Land Use Ordinance” (LUO):

SECTION 4 – Relationship to Land Use Plans and Policies

“Sec. 21-3.130 Industrial districts--Purpose and intent.

(f) The intent of the I-3 waterfront industrial district is to set apart and protect areas considered vital to the performance of port functions and to their efficient operation. It is the intent to permit a full range of facilities necessary for successful and efficient performance of port functions. It is intended to exclude uses which are not only inappropriate but which could locate elsewhere.

(Added by Ord. 99-12)”

According to LUO Table 21-3, Master Use Table, the Sand Island WWTP facilities, including the proposed solids handling building return lift station, are defined as “public uses and structures” and are permitted in the I-3 zoning district. The project is thus consistent with the purpose and uses of the land’s associated zoning district classifications under the CCH LUO. See **Figure 4-2, Zoning**.

SECTION 4 – Relationship to Land Use Plans and Policies



4.5 PRIMARY URBAN CENTER (PUC) DEVELOPMENT PLAN

The PUC Development Plan, most recently updated in 2004, implements the objectives and policies of the General Plan for the PUC, which is described as the “cultural, governmental and economic center of both O‘ahu and the State.” The PUC Development Plan is incorporated into Ordinance 04-14 by reference. The proposed project is consistent with the policies described in the PUC Development Plan, Chapter 4.2, Wastewater:

Section 4.2.2 Policies

- *Implement adequate and timely upgrades/expansion of wastewater treatment facilities to meet the growth demands of the PUC.*

The proposed solids handling building return lift station is not required to address increased service demands at the Sand Island WWTP, however it is a required upgrade to ensure continued, reliable operations and maintenance of a satisfactory standard of treatment processes in compliance with the NPDES permit under which the plant operates. The project site is located within land identified for “Industrial” use on the PUC DP Map A.5: Land Use Map PUC – Central. Wastewater treatment facilities are an approved use within this land use designation.

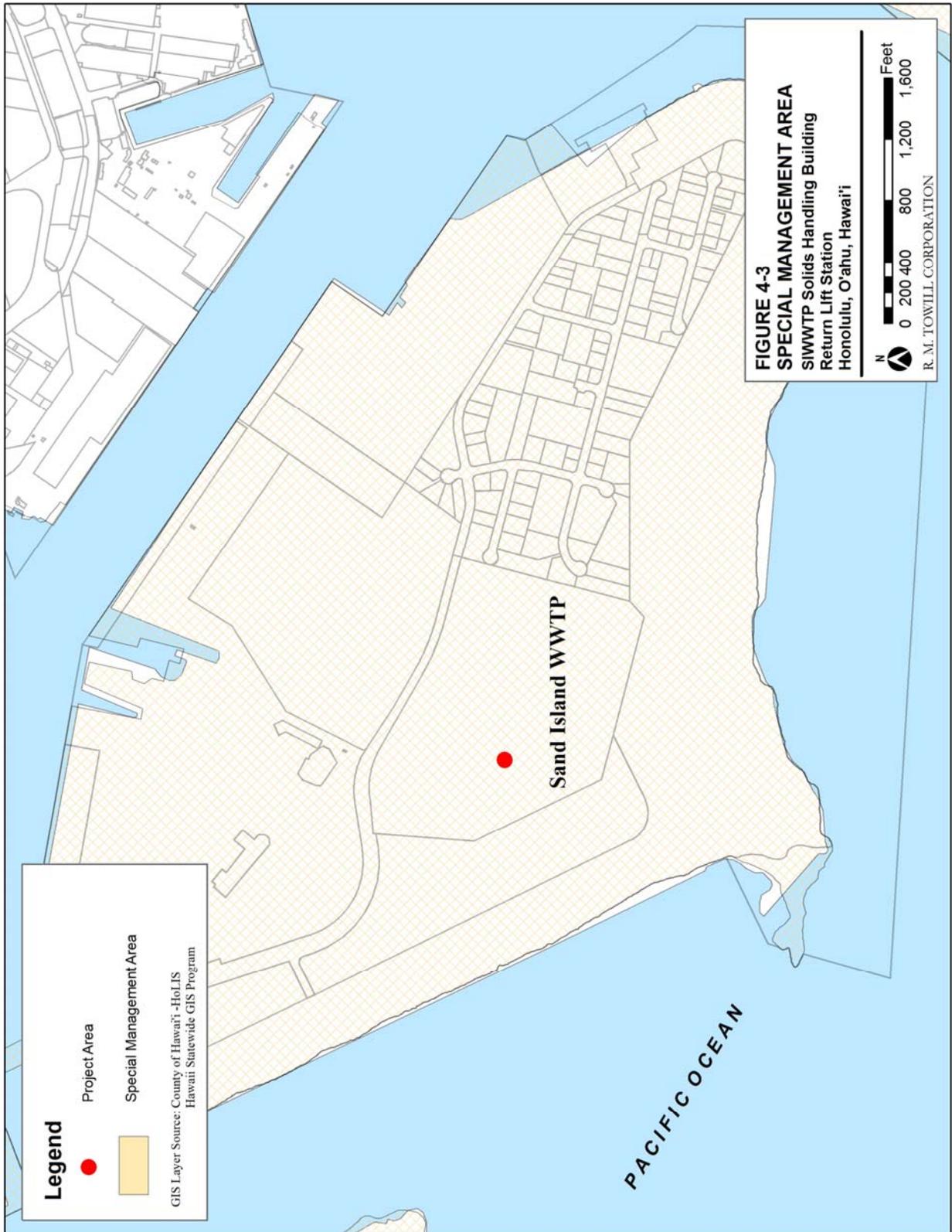
The project is consistent with the PUC Development Plan, Section 3.4.2.4, “Military, Airport, Harbor, and Industrial Areas Policy” which states: “Promote compatibility with the surrounding urban and natural environment. Where industrial areas are mixed with or adjacent to residential communities or natural areas, mitigate visual, noise, and other environmental impacts by adopting performance standards.” The new solids handling building return lift station will not be visible from any vantage point within the Sand Island State Recreation Area, as it will be hidden by existing buildings and structures. Noise in the vicinity of the project site will be generated during construction by heavy equipment, internal combustion vehicles, and power tools used during construction. Due to the distance between the project site and the Sand Island State Recreation Area, and the intervening industrial structures, construction-generated noise is not expected to adversely affect public enjoyment of the recreation area. Construction noise will cease at project completion. Operation of the solids handling building return lift station, will not result in noticeable changes in sound levels compared to existing operations.

4.6 SPECIAL MANAGEMENT AREA (SMA) RULES AND REGULATIONS

The City and County of Honolulu has designated the shoreline and certain inland areas of O‘ahu as being within the Special Management Area (SMA). SMA areas are designated sensitive environments that should be protected in accordance with the State’s Coastal Zone Management policies, as set forth in Revised Ordinances of Honolulu (ROH), Section 25, Shoreline Management, and Hawai‘i Revised Statutes (HRS), Section 205A, Coastal Zone Management.

The Sand Island WWTP, including the proposed project site, is located within the SMA. See **Figure 4-3, Special Management Area**.

SECTION 4 – Relationship to Land Use Plans and Policies



4.6.1 SHORELINE MANAGEMENT, ROH SECTION 25

The potential effects of the proposed project are evaluated based on the review guidelines in the Revised Ordinances of Honolulu (ROH) Section 25-3.2. The following is a discussion of the applicability of the guidelines to the planned construction of a new solids handling building return lift station.

(a) All development in the special management area shall be subject to reasonable terms and conditions set by the council to ensure that:

(1) Adequate access, by dedication or other means, to publicly owned or used beaches, recreation areas and natural reserves is provided to the extent consistent with sound conservation principles;

The project site is located within the Sand Island WWTP facility. Access to beaches, recreation areas, and natural reserves will not be affected by project activities or operation of the solids handling building return lift station following construction.

(2) Adequate and properly located public recreation areas and wildlife preserves are reserved;

The project consists of improvements within an existing, established WWTP facility. Public recreation areas and wildlife preserves will not be affected by project activities or operation of the solids handling building return lift station following construction.

(3) Provisions are made for solid and liquid waste treatment, disposition and management which will minimize adverse effects upon special management area resources; and,

Construction activities will not generate a significant quantity of wastewater. Construction personnel will have access to existing restroom facilities at the solids handling building or be provided with Port-a-Johns. No other mitigation measures are recommended or required. Construction and use of the proposed project will not disrupt or otherwise adversely affect wastewater systems. The new solids handling building return lift station will benefit the Sand Island WWTP by aiding in the proper treatment and disposal of liquid waste in compliance with the NPDES permit under which the WWTP operates.

Construction activities will result in the generation of small amounts of construction and demolition debris. Construction and demolition debris will be disposed of at the PVT Landfill in accordance with CCH and State DOH regulations and provisions of the PVT facility license. Non-construction solid waste generated by project activities may be collected and disposed at the Waimānalo Gulch Landfill or H-Power. Excess soils resulting from excavation activities would be disposed by storage at the Sand Island WWTP Soil Management Area.

(4) Alterations to existing land forms and vegetation; except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation or failure in the event of earthquake.

SECTION 4 – Relationship to Land Use Plans and Policies

The new solids handling building return lift station is being constructed in a vacant area adjacent to the existing solids handling building located near the center of the Sand Island WWTP. The project site is flat with an existing elevation of approximately 8 feet above mean sea level (msl), and is not susceptible to landslides or erosion. There are no surface waters in the immediate vicinity. Best management practices will be undertaken during construction activities to ensure that silt and dust will not escape the project site during ground disturbing activities. The site is located in FEMA Flood Zone X, which designates areas with 0.2 percent annual chance of flooding, thus is exposed to minimal risk from flooding. The site is located outside of the tsunami evacuation zone. All structures will be constructed to meet International Building Code 2003 standards for seismic design category rating ‘D’, which designates the highest load effect on a structure; and seismic use group III (Chapter 16, Table 1604.5 ROH), which designates essential facilities that are required for post earthquake recovery and those containing substantial quantities of hazardous substances.

Proposed improvements consist primarily of underground wet wells and pumps. Above-ground features that will be visible include piping, miscellaneous valves and appurtenant instrumentation. The height of new above-ground features is well below the maximum building height of 60 feet for the underlying zoning district. The project site is surrounded by existing large structures and tanks, some of which exceed 60 feet in height, that are part of the Sand Island WWTP facilities. The surrounding area is primarily used as an industrial harbor and contains large commercial / industrial buildings, fuel tanks, and tall cranes (approximately 250 feet in height) used for shipping operations. Within view planes from the urban coastline towards the sea, the Sand Island WWTP facilities are subordinate to the much taller cargo facility loading cranes and are consistent in appearance with other industrial facilities on Sand Island. The proposed solids handling building return lift station will not occupy views from recreational areas toward the ocean or toward scenic view planes or landmarks.

- (b) No development shall be approved unless the council has first found that:*
- (1) The development will not have any substantial, adverse environmental or ecological effect except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or compelling public interest. Such adverse effect shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself might not have a substantial adverse effect and the elimination of planning options;*

The proposed project is not anticipated to involve a substantial degradation of environmental quality. The site has long been developed and in use as Honolulu’s primary wastewater treatment facility. The planned construction and operation of the new solids handling building return lift station will not substantially alter environmental conditions at the project site. Planning and design for the project includes mitigation measures to prevent or minimize potential adverse environmental effects. The project will not result in cumulative impacts, will not involve a commitment to larger actions, and will not result in the elimination of planning options.

SECTION 4 – Relationship to Land Use Plans and Policies

The minor environmental effects from construction activities should be considered in light of the project’s benefit to wastewater treatment operations which will aid in the proper treatment and disposal of liquid waste in compliance with Clean Water Act regulations.

(2) The development is consistent with the objectives and policies set forth in Section 25-3.1 and area guidelines contained in HRS Section 205A-26;

The project is in compliance with the objectives and policies set forth in HRS 205A-2, and SMA guidelines contained in HRS 205-A26. This document is prepared to summarize the project effects in relation to the SMA guidelines in HRS Section 205A-26 and ROH Section 25. See **Section 4.6.2** for discussion of the project’s compliance with the State’s objectives and policies for the Coastal Zone.

(3) The development is consistent with the county general plan, development plans and zoning. Such a finding of consistency does not preclude concurrent processing where a development plan amendment or zone change may also be required.

The project is in conformance with the General Plan objectives for Transportation and Utilities, as described in **Section 4.3**. The County zoning designation for the project site is I-3, Waterfront Industrial. According to Table 21-3, Master Use Table, of the LUO, the planned solids handling building return lift station is considered a “public use and structure” and is a permitted use in the I-3 zoning district, as described in **Section 4.4**. The project site is designated as “Industrial” in the Development Plan for the Primary Urban Center. The planned solids handling building return lift station is in compliance with this designation, as described in **Section 4.5**.

(c) The council shall seek to minimize, where reasonable:

(1) Dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough or lagoon;

The project does not involve filling or otherwise altering any water body.

(2) Any development which would reduce the size of any beach or other area usable for public recreation;

The project site is located within the existing Sand Island WWTP and does not affect any beach or other area usable for public recreation.

(3) Any development which would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the special management area and the mean high tide line where there is no beach;

The project is not located where it would reduce or impose restrictions upon public access to any shoreline areas or surface waters.

(4) Any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast; and

The new solids handling building return lift station will not be visible from Sand Island Parkway, and will not interfere with or detract from line of sight toward the sea from the roadway. Waterfront industrial structures in the area, including facilities at Sand Island WWTP, are visible from the ocean, from Ke‘ehi Lagoon, from various vantages within urban Honolulu and the immediate surrounding properties, and from areas with elevations exceeding 100 feet above sea level, including Punchbowl, Pacific Heights, Alewa Heights, Upper Kalihi, Tantalus/Roundtop, Diamond Head, and high-rise buildings along Ala Moana Boulevard and Nimitz Highway. Within view planes from the urban coastline towards the sea, the Sand Island WWTP facilities are subordinate to the much taller cargo facility loading cranes and are consistent in appearance with other industrial facilities on Sand Island.

(5) Any development which would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.

The project site is located within an existing, developed industrial facility at the Sand Island WWTP. The new solids handling building return lift station collects excess liquids from the washdown, condenser, Venturi scrubber, and centrifuge operations, and condensate from the gas holding tank at the digester operations. The liquids are then pumped back near the start of the wastewater treatment process to be treated. Operation of the new lift station will not result in a significant change to the quantity of treated discharge effluent or residual solids generated at the SIWWTP. The project will not adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.

4.6.2 COASTAL ZONE MANAGEMENT, HRS 205(A)

The State of Hawai‘i designates the Coastal Zone Management Program (CZMP) to manage the intent, purpose and provisions of Chapter 205(A)-2 of the Hawai‘i Revised Statutes (HRS), as amended, for the areas from the shoreline to the seaward limit of the State’s jurisdiction, and any other area which a lead agency may designate for the purpose of administering the Coastal Zone Management program. The following is an assessment of the project with respect to the CZMP objectives and policies set forth in Section 205(A)-2.

1. Recreational resources

Objective: *Provide coastal recreational opportunities accessible to the public.*

Policies:

A) Improve coordination and funding of coastal recreational planning and management; and

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

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

SECTION 4 – Relationship to Land Use Plans and Policies

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

Discussion:

The proposed project will not have an adverse effect on the adjacent Sand Island State Recreation Area or other recreational resources. The project site near the center of the Sand Island WWTP may be visible from limited areas of the park, however due to distance and the small project scale, construction activities will not be generally noticeable nor have an adverse effect on recreational activities at the park. Operation of the new solids handling building return lift station following construction will not result in noticeable change from existing operations at the WWTP facility. Public access and use of the park and shoreline areas will remain unaffected by project activities.

Water quality will be protected during construction through the application of construction stormwater BMPs to prevent sediment or other pollutants from discharging in runoff from the site. The construction site and staging area will be smaller than one acre, therefore a National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit is not required. Excavation from the wet wells will require some dewatering. Measures to minimize the extent of dewatering will be considered such as utilizing precast improvements and sealing of excavated areas. Dewatering effluent will be processed through the WWTP. Also, any water from hydrotesting procedures will be processed through the WWTP. Thus, NPDES Construction Dewatering and Hydrotesting permits are not anticipated to be required as well. Planned improvements will not alter existing drainage patterns.

Operation of the new solids handling building return lift station following construction will help ensure that SIWWTP treatment processes are conducted in compliance with Clean Water Act regulations to safeguard coastal water resources.

2. Historic resources

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

Policies:

(A) Identify and analyze significant archaeological resources;

(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and

(C) Support state goals for protection, restoration, interpretation, and display of historic resources.

Discussion:

The project site is situated within artificially created Fill Land, mixed (FL) which was entirely submerged by the ocean during pre- and post-contact periods. In addition, the project site was subject to extensive ground disturbance and modification during construction of the existing Sand Island WWTP. As a result, no archaeological sites are known or expected to be encountered at the project site.

The proposed project is not expected to result in potential for negative adverse effects to archaeological resources. This is due to the artificially created, mixed fill soils found at the project site. A review of records with the Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD), also indicates that there are no known historic sites at the project location. See **Appendix A, Letter from State Historic Preservation Division, March 5, 2001**. However, in the event of unexpected discovery of historic or archaeological resources, the SHPD will be immediately notified for appropriate response and action.

The project site and surrounding Sand Island WWTP facility is not used for traditional, customary, or cultural practices. The project site is located on artificially created land comprised of mixed fill soils in an area that was submerged by the ocean until modern times. The site was heavily modified during construction of the Sand Island WWTP. Plants found at the site are introduced grass species not associated with cultural gathering or use activities. The artificial creation and developed condition of the site is not conducive to the presence of wahi pana (storied place) or other sites associated with cultural practices.

Based on the above, the potential for adverse effects to traditional and cultural practices is not anticipated. Construction of the new solids handling building return lift station will not disturb traditional sacred sites or traditional cultural objects; will not result in the degradation of resources used by native Hawaiians for subsistence or traditional cultural practices; will not obstruct landforms or wayfinding features; and will not result in loss of

access to the shoreline or other areas customarily used by Hawaiians or others for resource gathering or traditional cultural practices. No mitigation measures are proposed.

3. Scenic and open space resources

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

Policies:

- (A) Identify valued scenic resources in the coastal zone management area;*
- (B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;*
- (C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and*
- (D) Encourage those developments that are not coastal dependent to locate in inland areas.*

Discussion:

The Sand Island WWTP is located in an industrial harbor area containing large commercial / industrial buildings, fuel tanks, and tall cranes used for container shipping operations. The WWTP facilities include several prominent structures, including clarifier tanks, gas tank (40 feet tall), incinerator building (80 feet tall) and anaerobic digester tower (108 feet tall). These facilities are visible from the ocean, from Ke‘ehi Lagoon, from various vantages within urban Honolulu and the immediate surrounding properties, and from areas with elevations exceeding 100 feet above sea level, including Punchbowl, Pacific Heights, Alewa Heights, Upper Kalihi, Tantalus/Roundtop, Diamond Head, and high-rise buildings along Ala Moana Boulevard and Nimitz Highway. Within view planes from the urban coastal areas laterally down the shoreline or towards the sea, the Sand Island WWTP facilities are subordinate to the much taller cargo facility loading cranes (approximately 250 feet in height) and are consistent in appearance with other industrial facilities on Sand Island.

The proposed site for the new solids handling building return lift station is located near the center of the Sand Island WWTP adjacent to the existing solids handling building. Proposed improvements consist primarily of underground wet wells and pumps. Above-ground features that will be visible include piping, miscellaneous valves and appurtenant instrumentation. Above-ground features will be significantly smaller than the surrounding WWTP facilities, including the solids handling building, the primary clarifier tanks, and the digester tanks, and will be consistent in appearance with the industrial character of the existing facilities. The planned improvements will be significantly below the maximum building height of 60 feet for the underlying zoning district.

Due to the relatively small scale, location near the center of the existing Sand Island WWTP, and industrial context of the surrounding area, the project will not adversely affect scenic and visual resources in the shoreline area. The new solids handling building return lift station will not obstruct or degrade lateral coastal views or mauka-makai views from the shoreline, Sand Island Parkway, or the Sand Island State Recreation Area.

4. Coastal ecosystems

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

Policies:

- (A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;*
- (B) Improve the technical basis for natural resource management;*
- (C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;*
- (D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and*
- (E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.*

Discussion:

The proposed project is not expected have any adverse affects on marine resources. Project activities do not involve work in the coastal waters or alterations to stream channels or other water bodies or water sources. Following project completion, there will be no noticeable change in wastewater treatment operations, or in discharge effluent quantity or quality over existing conditions.

During construction, stormwater BMPs will be employed to prevent pollutant discharge in stormwater runoff. Discharge pollution prevention measures will be installed for each project action as required by project activities. Measures to prevent sediment discharge in stormwater runoff during construction will be in place and functional before project activities begin and will be maintained throughout the construction period. Planned improvements will not alter existing drainage patterns or involve modifications to existing drainage systems.

5. Economic uses

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

Policies:

- (A) Concentrate coastal dependent development in appropriate areas;*
- (B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and*

SECTION 4 – Relationship to Land Use Plans and Policies

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

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

Discussion:

The proposed project is located near the center of the existing Sand Island WWTP and involves a relatively minor upgrade to the existing facilities. The new solids handling building return lift station collects excess liquids from the washdown, condenser, Venturi scrubber, and centrifuge operations, and condensate from the gas holding tank at the digester operations. The liquids are then pumped back near the start of the wastewater treatment process to be cleaned. This generally helps to ensure the continued reliable operation of wastewater treatment processes in compliance with Clean Water Act regulations.

The project has been assessed for social, visual, and environmental impacts in accordance with Chapter 343, HRS. With the implementation of mitigation measures outlined in this document, no adverse impacts are expected to result from this project.

6. Coastal hazards

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

Policies:

- (A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;*
- (B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;*
- (C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and*
- (D) Prevent coastal flooding from inland projects.*

Discussion:

The project will be undertaken in a manner that will reduce potential harm to life and property from coastal hazards.

- The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel 15003C0361G, dated July 22, 2009, identifies the project site within flood zone X, which designates areas outside of the 0.2 percent annual chance (500 year) floodplain. The project will not exacerbate conditions that would contribute to coastal flooding. No special provisions for flood risk mitigation are recommended.
- The project will not result in changes to existing drainage patterns. Rainfall and stormwater runoff from the site is directed to the Sand Island WWTP's existing

storm drain system consisting of catch basins and underground piping, and discharges into a man-made drainage ditch located at the north side of the facility. The drainage ditch connects to a 6-foot by 8-foot box culvert that passes under the Sand Island Parkway and nearby cargo container yard located north of the WWTP, and discharges to Honolulu Harbor. No modifications to the drainage system are proposed.

- On the Tsunami Evacuation Zone Map prepared by the Department of Emergency Management, the proposed project site is located outside of the evacuation boundary within an area considered to be safe from wave action and that would not likely be subject to inundation by a tsunami.
- The potential for hurricanes, while relatively rare, is present. To safeguard against hurricane damage, the new facility will be designed in compliance with 2003 IBC standards for wind exposure rating C, and will carry a design wind load of 105 mph (ROH Chapter 16).
- Earthquakes pose a threat throughout Hawai‘i, but disruptive seismic events are relatively uncommon in this region. Design and construction of the proposed facility will be in accordance IBC design category rating D and Seismic Use Group III, per CCH standards.

7. Managing development

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

Policies:

- (A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;*
- (B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and*
- (C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.*

Discussion:

All work activities will be conducted in compliance with federal, state, and county environmental rules and regulations. This environmental assessment document is prepared to identify and, where necessary, propose mitigation measures to address impacts anticipated from the construction and operation of proposed improvements.

8. Public participation

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

Policies:

- (A) Promote public involvement in coastal zone management processes;*
- (B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and*

SECTION 4 – Relationship to Land Use Plans and Policies

organizations concerned with coastal issues, developments, and government activities; and

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

Discussion:

Public participation in the project is being accommodated during the Draft Environmental Assessment (EA) publication period, and during public hearings to be conducted as part of the SMA permit application process. Public notice of the proposed action is provided through publication of the EA and SMA permit application in the OEQC Bulletin.

9. Beach protection

Objective: *Protect beaches for public use and recreation.*

Policies:

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

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

and

(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion:

The project site is located approximately ¼ mile inland from the shoreline and will not interfere with coastal open space or natural shoreline processes. The project site is situated on flat topography within a developed, industrial wastewater treatment facility. The site is not susceptible to erosion.

10. Marine resources

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

Policies:

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

(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

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

(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and

SECTION 4 – Relationship to Land Use Plans and Policies

inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion:

The proposed project does not involve construction activities within a sensitive marine environment. The project site is located approximately ¼ mile from the shoreline within the Sand Island WWTP. The new solids handling building return lift station is required to ensure the continued reliable operation of wastewater treatment processes at the facility for the protection of public health and safety and for the protection of the natural environment and water resources.

- No listed or protected plant species are known from the area surrounding the project site. Rare, threatened, or endangered fauna are not known to utilize the site for either habitat or for foraging purposes. Although there is no evidence of migratory seabirds and native waterfowl species using the project site for breeding or habitation, some are known to visit areas within the wider project study area. No night lighting is anticipated to be needed or implemented.

No mitigation measures are recommended or required.

SECTION 5

Necessary Permits and Approvals

5.1 CITY AND COUNTY OF HONOLULU

Department of Design and Construction

- Finding of No Significant Impact (Chapter 343, HRS)

Department of Planning and Permitting

- Special Management Area Use Permit
- Construction Plan Review and Approval (including Grading and Erosion Control Plan Review as appropriate with concurrent review by Department of Design and Construction)
- Building Permit
- Grading and Stockpiling Permits

5.2 STATE OF HAWAII

Department of Health

- Construction Plan Review and Approval

SECTION 6
Organizations and Agencies Consulted During the
Preparation of the DEA

6.1 City and County of Honolulu

- Department of Environmental Services
- Department of Planning and Permitting
- Department of Design and Construction

6.2 State of Hawai'i

- Office of Environmental Quality Control
- DLNR, Land Division

SECTION 7
Organizations and Agencies Consulted During the 30
Day DEA Review Period

7.1 City and County of Honolulu

Department of Design and Construction
Department of Facilities Maintenance
Department of Parks and Recreation
Department of Planning and Permitting
Department of Transportation Services
Honolulu Board of Water Supply
Honolulu Fire Department
Honolulu Police Department

7.2 State of Hawai‘i

Department of Accounting and General Services
Department of Business, Economic Development and Tourism
Department of Health
Department of Land and Natural Resources
Department of Transportation
Disability and Communication Access Board
Office of Environmental Quality Control
Office of Hawaiian Affairs
State Historic Preservation Division, DLNR
University of Hawai‘i Environmental Center

7.3 Federal Agencies

U. S. Army Corps of Engineers
U. S. Environmental Protection Agency – Pacific Islands Office
U. S. Fish & Wildlife Service
National Marine Fisheries Service

7.4 Elected Officials and Boards

City and County of Honolulu
Mayor Peter Carlisle
Councilmember Tom Berg, District 1
Councilmember Ernest Martin, District 2
Councilmember Ikaika Anderson, District 3
Councilmember Stanley Chang, District 4
Councilmember Ann Kobayashi, District 5
Councilmember Tulsi Gabbard Tamayo, District 6

SECTION 7 – Organizations and Agencies Consulted

Councilmember Romy Cachola, District 7
Councilmember Breene Harimoto, District 8
Councilmember Nestor Garcia, District 9

Neighborhood Board

Downtown Neighborhood Board No. 13
Kalihi Palama Neighborhood Board No. 15
Kalihi Valley Neighborhood Board No. 16
Salt Lake-Aliamanu Neighborhood Board No. 18

State of Hawai‘i

Senator Suzanne Chun Oakland, Senate District 13
Representative Joey Manahan, House District 29

7.5 Utility Companies

Hawaiian Electric Company, Inc.
Hawaiian Telcom

7.6 Community Organizations

Kalihi Business Association
Sand Island Business Association
Chinese Merchants Association

SECTION 8 Determination

In accordance with the content requirements of Chapter 343, Hawai‘i Revised Statutes, and the significance criteria in Section 11-200-12 of Title 11, Chapter 200, it is anticipated that this project will have no significant adverse impact to water quality, air quality, existing utilities, noise, archaeological sites, or wildlife habitat. All anticipated impacts will be temporary and will not adversely impact the environmental quality of the area.

According to the significance criteria:

1. *Irrevocable commitment to loss or destruction of natural or cultural resources.*

The proposed project is not expected to adversely impact any natural or cultural resources. The proposed activity will involve use of fill land on Sand Island. This area contains the existing wastewater treatment plant which has already been subject to extensive grading and land disturbance.

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

The proposed project will involve use of disturbed areas of land within the existing Sand Island WWTP site. No curtailment of the range of beneficial uses that may be exercised at the site are therefore expected. With or without the project, the Sand Island WWTP will continue to handle a major part of the wastewater processing needs of the City and County of Honolulu.

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

The proposed project is consistent with the environmental policies, goals and guidelines expressed in Chapter 343, HRS. Potential sources of adverse impacts have been identified and appropriate measures have been developed to either mitigate or minimize potential impacts to negligible levels.

4. *Substantially affects the economic or social welfare of the community or state.*

The proposed project is expected to enhance the future long term stability of the City and State through the maintenance of basic public works infrastructure necessary to the health and welfare, of the community and region.

5. *Substantially affects public health.*

The proposed project will be constructed in accordance with Federal, State, and City and County of Honolulu, rules and regulations governing public safety and health. Concerns involving air, water, noise, and waste impacts have been addressed in this EA document by use of appropriate mitigation measures as described. Upon completion, the proposed modifications will benefit public health by maintaining the continued reliability of wastewater treatment processes at the Sand Island WWTP.

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

The proposed project involves the construction of improvements necessary to maintain reliable operations of a wastewater treatment facility which is consistent with the General Plan, Population, Objectives and Policies. The proposed project will create short-term employment opportunities, but will not be an inducement to changes in population size or distribution. Public infrastructure requirements, including power and water services, which will be utilized by the project have been evaluated and no negative adverse effects to the public utilities are anticipated. The project will not influence use by the public of the Sand Island State Recreation Area and related shoreline areas. Following project completion there will be no noticeable change in wastewater treatment operations, or in discharge effluent quantity or quality over existing conditions.

7. *Involves substantial degradation of environmental quality.*

The proposed project will be developed in accordance with the environmental polices of Chapter 343, HRS, and the National Environmental Policy Act. The project will help to ensure the continued reliable operation of wastewater treatment processes. No degradation of environmental quality is, therefore, anticipated or expected.

8. *Is individually limited but cumulatively has considerable effects on the environment, or involves a commitment for larger actions.*

Based on the description of the proposed action and mitigation measures identified in this document, potential for considerable adverse environmental effects and a commitment for larger actions, is not expected.

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

There are no endangered flora or fauna species within the project site.

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

As required, any potential impacts to air, water quality, or noise levels will be addressed through the implementation of appropriate mitigation measures described in this document.

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

The proposed activity will be undertaken within an existing industrial area which is home to Sand Island WWTP. The site contains no especially sensitive environmental characteristics which would detract from continued use for this activity.

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

The proposed project is not expected to adversely affect the public's enjoyment of scenic vistas or mauka-makai and lateral shoreline view planes from urban Honolulu, Sand Island Parkway, the Sand Island State Recreation Area, or other areas in the vicinity of the Sand Island WWTP. The project site at the center of the Sand Island WWTP may be visible from limited areas of the State Recreation Area, however due to distance and the small project scale, construction activities will not be generally noticeable nor have an adverse effect on recreational activities at the park. The project is consistent with the industrial zoning designation of the site which allows for a wastewater treatment facility. The proposed project will also be consistent with the building height restriction of 60 feet.

13. *Requires substantial energy consumption.*

The facilities identified in this project will not consume a substantial amount of energy. Construction activities will result in a short-term increase in power demand, but the increase will be of short duration and will cease upon project completion.

Based on the above evaluation and the information contained in this Draft Environmental Assessment, it is anticipated that an Environmental Impact Statement (EIS) will not be required and that a recommended Finding of No Significant Impact (FONSI) will be published for this project.

SECTION 9

References

- (DDC, 2001) *Sand Island Wastewater Treatment Plant Modifications and Expansion, Honolulu, O‘ahu, Hawai‘i*. R. M. Towill Corporation, prepared for the City and County of Honolulu, Department of Design and Construction. Honolulu, HI. April, 2001.
- (DDC, 2005), *Sand Island Wastewater Treatment Plant Primary Expansion, Elevator Installation for the Motor Control Building, Honolulu, O‘ahu, Hawai‘i*. R. M. Towill Corporation, Prepared for the Department of Design and construction, Honolulu, October 2005.
- (DDC, 2011) *Final Environmental Assessment Wet Sludge Storage Tank Addition Sand Island Wastewater Treatment Plant Modifications and Expansion*. R. M. Towill Corporation, prepared for the City and County of Honolulu Department of Design and Construction, May 2011.
- (DOH, 1988) *Water Quality Standards Map of the Island of O‘ahu, to be used in Conjunction with Hawai‘i Department of Health*, Chapter 54, Water Quality Standards. State of Hawai‘i, Department of Health. 1988.
- (DOH, 2010) *Island of O‘ahu, Daily Air Quality Data*. State of Hawai‘i, Department of Health. June 10, 2010. <http://www.state.hi.us/doh/air-quality/main.html>
- (DPP, 2004). *Primary Urban Center Development Plan (ROH, Ch. 24, Article 2)*. Department of Planning and Permitting, City and County of Honolulu. Honolulu, HI. June 2004.
- (FEMA, 2009) *Federal Insurance Rate Map (FIRM), City and County of Honolulu. Map No. 15003C0361G, dated July 22, 2009*. Federal Emergency Management Agency.
- (HoLIS, 2009) *Honolulu Land Information System, Geographic Information System*. City and County of Honolulu, Department of Planning and Permitting. 2009.
- (UH, 1998) *University of Hawai‘i, Department of Geography, Atlas of Hawai‘i*, University of Hawai‘i Press, Honolulu, HI.
- (Stearns and Vaksviks, 1935) *Geology and Groundwater Resources of the Island of O‘ahu, Hawai‘i*. Division of Hydrography, Volume 1. H. T. Stearns and K. N. Vaksviks. Honolulu, HI. 1935.
- (USDA, 1972) *Soil Survey of Islands of Kaua‘i, O‘ahu, Maui, Moloka‘i and Lāna‘i, State of Hawai‘i*. Published by the United States Department of Agriculture (USDA),

Soil Conservation Service, in Cooperation with The University of Hawai‘i
Agricultural Experiment Station. Honolulu, HI. August 1972.

(USGS, 2000) *Ground Water in Hawai‘i*. U. S. Geological Survey. Honolulu, HI. 2000

Appendix A

Letter from State Historic
Preservation Division,
March 5, 2001

Appendix A

Letter from State Historic Preservation Division, March 5, 2001 Chapter 6E Historic Preservation Review Sand Island Wastewater Treatment Plant, Modifications and Expansion

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
Kekunihewa Building, Room 566
201 Kamehaha Boulevard
Kapele, Hawaii 96707

MARCH 5, 2001

Rae M. Loui, Acting Director
Department of Design and Construction
City & County of Honolulu
650 South King Street, 11th floor
Honolulu, Hawaii 96813

Dear Ms Loui:

**SUBJECT: Chapter 6E-8 Historic Preservation Review - Draft Environmental Assessment for the Sand Island Wastewater Treatment Plant, Modifications and Expansion
Honolulu, Kona, O'ahu
TMK:1-5-041:005**

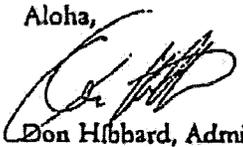
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DIV. OF SURVEY AND ACQUISITION

Thank you for the opportunity to comment on the DEA for the Sand Island Wastewater Treatment Plant Modifications and Expansion. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of the project areas.

The DEA is correct in stating that the project site is comprised of fill lands and mixed fill lands. A review of our records shows that there are no known historic sites at the project location. This area of Sand Island has been in-filled to enlarge the shoreline. Since modifications are proposed for the existing Sand Island WWTP, and the plant is built upon fill soils, we believe that this project will have "no effect" on historic sites.

If you have any questions please call Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

EJ:jk

LIBERTY S. COLLEGE-AGAWAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JANET E. KAWLO
UNNEE NISROKA

AGUATIC RESOURCES
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COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

STATE OF HAWAII
1999

USAMEN J. SAIVETANG
VICE-CHIEF OF HAWAII

