

Water

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Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan

Environmental Impact Statement

Honouliuli Wastewater Treatment Plant Secondary Treatment and Support Facilities

Environmental Impact Statement–Final March 2017

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FINAL

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Glossary of Acronyms and Technical Terms

%	Percent
§	Section
°F	Degree Fahrenheit
ADF	Average Daily Flow
Admin	Administration
ALISH	Agricultural Lands of Importance to the State of Hawaii
AS	Activated Sludge
ATA	Austin Tsutsumi & Associates, Inc.
Blda	Building
BMP	Best Management Practices
BOD	Biochemical Oxygen Demand
BWS	Board of Water Supply, City and County of Honolulu
CAA	Clean Air Act
CBOD	Carbonaceous Biochemical Oxygen Demand
CCD	Census County Divisions
ССН	City and County of Honolulu
CDP	Census-Designated Place
cfm	Cubic Feet per Minute
CER	Code of Federal Regulations
СНР	Combined Heat and Power
CO	Carbon Monovide
CSH	Cultural Surveys Hawai'i Inc
CSM	Collection System Maintenance
CWB	Clean Water Branch
CZM	Coastal Zone Management
dB	
dBA	Decibel A-weighted filter (a decibel rating commonly used for measuring sound levels)
	Hawaii Dopartment of Pusiness, Economic Dovelopment, and Tourism
	Department of Design and Construction
	Department of Design and Construction
	Department of Emergency Management
	Department of Energency Management
	Department of Facility Maintenance
	Department of Lond and Natural Department. State of Heuraii
	Department of Land and Natural Resources, State of Hawaii
DNL	Day-Night Average Sound Level (a system that models the average holse levels over a
DOLL	24-nour period, typically an average day over the course of a year)
DOH	Department of Health, State of Hawaii
	Development Plan
	Department of Planning and Permitting
	Department of Public Works
atpa	dry tons per day
DWM	Department of Wastewater Management
EA	
EIS	Environmental Impact Statement
EJ	Environmental Justice
ENV	Department of Environmental Services
EPA	Environmental Protection Agency, United States
ESA	Endangered Species Act
FACD	First Amended Consent Decree
FEA-EISPN	Final Environmental Assessment-Environmental Impact Statement Preparation Notice
FEIS	Final Environmental Impact Statement

FEMA	Federal Emergency Management Agency
FHA	Federal Housing Administration
Final Sewer I/I Plan	Final Sewer Infiltration and Inflow Plan
FIRM	Flood Insurance Rate Map
FOG	Fats, Oils, and Greases
ft	Feet/Foot
FTE	Full Time Equivalent
FPPA	Farmland Protection Policy Act
GAC	Granular Activated Carbon
GBT	Gravity Belt Thickeners
GHG	Greenhouse Gas
GIS	Geographic Information System
H_2S	Hydrogen Sulfide
HAR	Hawaii Administrative Rules
HDoD	State of Hawaii Department of Defense
HECO	Hawaii Electric Company, Inc.
HEPA	Hawaii Environmental Policy Act
HFD	Honolulu Fire Department
HHCTCP	Honolulu High-Capacity Transit Corridor Project
HoLIS	Honolulu Land Information System
Honouliuli Fac Plan	Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan
Honouliuli WWTP	Honouliuli Wastewater Treatment Plant
HPD	Honolulu Police Department
H-POWER	Honolulu Program of Waste Energy Recovery
HRS	Hawaii Revised Statues
HUD	Federal Department of Housing and Urban Development
HWRF	Honouliuli Water Recycling Facility
1/1	Infiltration/Inflow
I/I Study	Sewer Rehabilitation and Infiltration & Inflow Minimization Study, Volumes 1 to 9
IBC	International Building Code
IPS	Influent Pump Station
IWS	Individual Wastewater System
kWh	Kilowatt Hour
LID	Low Impact Development
LOS	Level of Service
LUC	Land Use Commission
LUO	Land Use Ordinance
MBTA	Migratory Bird Treaty Act
MG	Million Gallons
mg/L	Milligram Per Liter
mgd	Million Gallons per Day
mi.	Mile
MSL	Mean Sea Level
mph	mile per hour
NAAQS	National Ambient Air Quality Standards
NH ₃	Ammonia
NOI	Notice of Intent
NO ₂	Nitrogen Dioxide
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NTU	Nephelometric Turbidity Unit
NWI	National Wetland Inventory
O&M	Operation and Maintenance
O ₃	Ozone
OEQC	Office of Environmental Quality Control

ORMP	Hawai'i Ocean Resources Management Plan
Pb	Lead
PM _{2.5}	Particulate Matter (diameter ≤ 2.5 micrometers)
PM ₁₀	Particulate Matter (diameter ≤ 10 micrometers)
ppmV	Parts per Million by Volume
PSRP	Process to Significantly Reduce Pathogens
PUC	Primary Urban Center
PV	Photovoltaic
RAS	Return Activated Sludge
ROI	Region of Influence
RSS	Return Secondary Sludge
SC	Solids Contact
SCADA	Supervisory Control and Data Acquisition
SCAP	Stream Channel Alteration Permit
SCP	Sustainable Communities Plan
SCS	Soil Conservation Service
SFAS	Sewer Flow Analysis System
SHPD	State Historic Preservation Division
SO ₂	Sulfur Dioxide
SSO	Sanitary Sewer Overflow
State	State of Hawaii
SWD	Side Water Depth
TF	Trickling Filter
TF/SC	Trickling Filter/Solids Contact
TIAR	Traffic Impact Analysis Report
TS	Total Solids
TSS	Total Suspended Solids
UA	Urbanized Area
UFC	Uniform Fire Code
UHWO	University of Hawaii at West Oahu
U.S.	United States
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USFWS	United States Department of the Interior, Forestry and Wildlife Service
UV	Ultraviolet
v/c	volume to capacity
VOC	Volatile Organic Compound
WAS	Waste Activated Sludge
Wastewater Design	Design Standards of the Department of Wastewater Management,
Standards	Volume 1 (1993) and Design Standards of the Division of Wastewater Management.
	Volume 2 (1984)
WSS	Waste Secondary Sludge
WTD	Wastewater Treatment and Disposal
wtpd	wet tons per day
ŴŴTP	Wastewater Treatment Plant

Preface

The following notation has been used to depict substantive differences between this document and the Draft Environmental Impact Statement

- Insertions are noted by a <u>double underline</u>
- Deletions are noted with a strike through

In order to maintain legibility, formatting changes (such as revised headers and footers), updates to the table of contents with new page numbers and cross-references, changes to the publication date, revisions to the title page to reflect the fact that the document is a Final EIS, pagination adjustments, and other non-substantive changes are <u>not</u> marked.

Edits/addition/corrections to figures and appendices that could not be depicted by the method described above are listed below.

Change	Item	Description
Revision	Reference	Updated Reference to <i>Reuse</i> <i>Guidelines</i> and <i>Hawaii Administrative</i> <i>Rules, Title 11 Department of Health</i> <i>Chapter 62 Wastewater Systems</i> (DOH 2016)
Revision	Table 4-1	Updated Sludge Quantities
Revision	Table 4-4	Added clarifying text to the table
Revision	Table 4-5	Replaced table with latest available data
Addition	Table 7-1	Inserted Table addressing HRS 226 Objectives

This Final Environmental Impact Statement (FEIS) was prepared pursuant to Chapter 343, Hawaii Revised Statutes (HRS), and Title 11, Chapter 200, Administrative Rules, State of Hawaii Department of Health (DOH). The City and County of Honolulu (CCH) Department of Environmental Services (ENV) proposes to upgrade the Honouliuli Wastewater Treatment Plant (WWTP) on the island of Oahu to provide full secondary treatment and expand the facility to accommodate future projected wastewater flow. This includes the potential relocation of non-process facilities (including Administrative support, central supervisory control and data acquisition operations, Laboratory, Ocean Team, Central Shops and the Central Warehouse) that support island-wide wastewater system functions that are currently located at Sand Island WWTP to the Honouliuli WWTP site. The upgrade of the Honouliuli WWTP is required by the First Amended Consent Decree (FACD) described in further detail below.

The CCH ENV is currently preparing the Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan, which updates portions of the West Mamala Bay Facilities Plan (2001) for the Honouliuli sewer basin. The Honouliuli sewer basin encompasses the areas from which current wastewater flows into the Honouliuli WWTP including Halawa, Aiea, Pearl City, Waipio, Waikele, Waipahu, Ewa, Kapolei, and Mililani. The United States (U.S.) Navy facilities at Pearl Harbor and Campbell Industrial Park are excluded because their wastewater does not flow to the CCH system.

The 2010 Consent Decree (Civil No. 94–00765 DAE–KSC) between CCH, DOH, and U.S. Environmental Protection Agency (EPA), now referred to as the FACD, requires CCH to meet certain requirements with respect to its wastewater collection system and WWTPs. In the FACD the CCH agreed to implement measures in its collection system that include the following: repair and replacement of sewers, force mains, and wastewater pump stations; development of condition assessments and spill contingency plans for force mains; development of condition assessments and spill contingency plans for force mains; development of a control

program for the discharge of grease. In addition, the CCH agreed to complete improvements to the Honouliuli and Sand Island WWTPs. The Honouliuli WWTP must be upgraded to fully meet secondary treatment standards by June 1, 2024. The Sand Island WWTP (which is the subject of a separate EIS) must be upgraded to meet secondary treatment standards by December 31, 2035, with the possibility of extending the deadline to December 31, 2038. The FACD provides for interim effluent limits that both plants must meet until they achieve full secondary treatment.

The CCH ENV, the proposing agency, has determined that the proposed alternative actions for the Honouliuli WWTP require the preparation of an Environmental Impact Statement. The Final Environmental Assessment-Environmental Impact Statement Preparation Notice (FEA-EISPN) submitted for this project and published in *The Environmental Notice* in July 2010 examined potential impacts associated with proposed upgrades to and/or expansion of the Honouliuli major sewer conveyance system in addition to the Honouliuli WWTP itself. The FEA-EISPN predates the issuance of the FACD described above. Since the FEA-EISPN submittal, the focus of the Honouliuli Fac Plan has shifted to the Honouliuli WWTP improvements necessary to comply with the FACD and meet the June 1, 2024 upgrade deadline. Meanwhile, the timeline for planning and engineering efforts for the conveyance system improvements required to accommodate future wastewater flows associated with projected growth in the sewer basin is independent of the June 1, 2024 upgrade deadline, and the recommendations for the conveyance system are still under consideration.

Therefore, this FEIS only concerns the upgrade and expansion of the Honouliuli WWTP to provide secondary treatment and accommodate projected wastewater flows, as well as addresses the potential location of non-process facilities to accommodate future needs that will arise from upgrading Honouliuli and Sand Island WWTPs to secondary treatment, and other treatment and collection system support facilities improvements. The improvements to the conveyance system and other FACD requirements will be the subject of separate Hawaii Environmental Policy Act (HEPA) environmental review documents to be prepared and submitted when the system improvements are better defined. The CCH ENV communicated this HEPA review approach to the Office of Environmental Quality Control (OEQC) and received OEQC's concurrence (OEQC 2013).

Several alternatives (herein referred to as options) were considered for secondary treatment upgrades for the Honouliuli WWTP, including:

- Option 1 (includes Sub-options 1A and 1B) Expand Existing Trickling Filter/Solids Contact (TF/SC) Process to Full Capacity
- Option 2 Replace Existing TF/SC Process with Activated Sludge (AS) to Full Capacity
- Option 3 (includes Sub-options 3A and 3B) Add to Existing TF/SC Process with AS to Full Capacity

A "No Action" alternative was also assessed. The proposed upgrades are sized for a projected 2050 design average daily flow (ADF) of 45 mgd. Following an evaluation of each option/sub-option, Option 2 was selected as the preferred alternative, as it meets project needs and criteria and would have the smallest footprint and lowest cost. <u>A list of potential projects covered by this FEIS is provided below.</u>

- New Ingress and Egress Locations
- <u>New Perimeter Fencing</u>
- Bike Path/Pedestrian Walkways
- <u>Modified Septage Receiving Station</u>
- Influent Screens
- Influent Pump Station
- Influent Pump Station/Headworks Odor Control
- Plant Wide/Centralized Odor Control System

- Grit/Preaeration Process Buildings
- <u>Aerated Grit Chambers</u>
- Preaeration Tanks
- Blower Building
- Emergency Generator/Power Buildings
- <u>Rehabilitation of Locker Building and other</u> <u>Support Buildings</u>
- Grit/Primary Electrical Building

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- Modified Return Flow Pump Station
- <u>Biosolids Dryers</u>
- Upgraded Dewatering Building (Solids)
- Thermal Drying Building
- Biosolids Handling Building
- Sludge Blend Tanks No 5-8
- Secondary Sludge Gravity Belt Thickeners
- Primary Sludge Pump Station NO. 1
- Primary Clarifiers NO. 1 -4
- Primary Sludge Pump Station No. 2
- Anaerobic Digesters NO. 1-5
- High Flow Diversion Structure
- Primary Effluent Metering
- Wet Weather Storage Basins
- Shallow Storm Water Infiltration Basins
- Aeration Tanks NO. 1-4
- <u>Flow Diversion Structure to Secondary</u> <u>Clarifiers</u>
- Secondary Clarifiers NO. 1-8
- Digester Control Building NO. 2
- Anaerobic Digesters NO. 4-5
- <u>Cogeneration Facilities</u>

- Sludge and FOG Receiving Station
- Final Effluent Metering Station
- <u>UV Disinfection</u>
- <u>Final Effluent Channel</u>
- <u>Operations Support Building</u>
- <u>Covered Parking</u>
- <u>Central Shops Building</u>
- Warehouse Building
- Maintenance Building
- Main Electrical Building
- Utility (HECO) Electrical Substation
- <u>Administration Building</u>
- Laboratory Building
- Ocean Team Building
- <u>Collection System Maintenance Dewatering</u> <u>Facility</u>
- <u>Collection System Maintenance Truck Wash</u>
- Dried Solids Storage, Truck Load Out and Emergency Storage
- <u>Sludge Receiving Station</u>
- <u>Cake Receiving Facility Odor Control System</u>

The DEIS was submitted to the OEQC for publication in *The Environmental Notice* on May 8, 2016 and will bewas available to the public in addition to various Federal, State and CCH agencies. This FEIS has been prepared to assess the overall environmental impacts of the recommended alternative. This FEIS has been prepared in compliance with HRS Chapter 343. As part of the environmental process, there was a 45-day review and comment period and informational meetings after the publication of the DEIS. This FEIS was prepared after the comment period.

During preparation of the FEA-EISPN, various stakeholders and residents were consulted and notified of the proposed upgrades/expansion of the Honouliuli major conveyance system and Honouliuli WWTP from meetings and pre-assessment letters (see Appendix H for a summary of responses to comments and comment letters). Following the submittal of the DEIS, additional meetings were held to answer questions or comments the public had on the DEIS.

Summary Sheet

Project Name	Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan: Honouliuli Wastewater Treatment Plant Secondary Treatment and Facilities
Proposing Agency	City and County of Honolulu (CCH) – Department of Environmental Services (ENV) 1000 Uluohia Street, Suite 308 Kapolei, Hawaii 96707 Lori Kahikina, P.E., Director
Accepting Authority	CCH – ENV 1000 Uluohia Street, Suite 308 Kapolei, Hawaii 96707 Lori Kahikina, P.E., Director
Location	Ewa District, Oahu, Hawaii
Project Area	The project area includes the existing Honouliuli WWTP site and the recently acquired parcel adjacent to the existing WWTP to the north and east (expansion area).
Tax Map Keys	Honouliuli WWTP: 9-1-013:007 and 9-1-069:004 Honouliuli WWTP Expansion Area: 9-1-069:003
Brief Description of the Action	The evaluation described in this Final Environmental Impact Statement (FEIS) is focused on the upgrade of the Honouliuli WWTP required to comply with a First Amended Consent Decree. This FEIS for the Honouliuli WWTP is intended to inform the public and various stakeholders of potential impacts the project may have on the environment and has been prepared in accordance with the Hawaii Revised Statutes Chapter 343.
	This project proposes to upgrade and expand the existing Honouliuli WWTP to provide secondary treatment and accommodate projected wastewater flows. The project may also result in a future increase in effluent discharged to Mamala Bay via the Barbers Point Deep Ocean Outfall.
	Regardless of which treatment alternative is selected, additional improvements at the Honouliuli WWTP are proposed for the following: Central Laboratory, Ocean Team Facilities, Administration Building, Operations Building, Leeward Region Maintenance, Central Shops, Warehouse, truck wash, central supervisory control and data acquisition operations, septage receiving station, odor control, grounds keeping, janitorial service and security, and Honouliuli Water Recycling Facility. This FEIS also addresses the potential siting of new facilities at the Honouliuli WWTP to help consolidate island-wide wastewater system administrative services.
	Improvements to the Honouliuli major sewer conveyance system will be the subject of separate, subsequent environmental review documents.

Significant Beneficial and Adverse Impacts and Proposed Mitigation Measures	<u>Short-Term Impacts:</u> The proposed project would result in some unavoidable short-term impacts, as described below. These potential impacts are generally minor and would be further minimized through the implementation of BMPs.
	 Soils – Construction activities would result in unavoidable impacts to soils in the project area due to grading and excavation activities and due to the potential for localized contamination of soils from construction activities (i.e., accidental release of construction equipment fluids). Construction methods to preserve the integrity of existing facilities would be implemented and construction equipment would be maintained in good working condition to reduce the potential for accidental spills. In addition, erosion and sedimentation controls would be implemented to reduce impacts to the natural environment. Soil which is not immediately used for backfilling would be stockpiled and covered or otherwise protected to prevent erosion or sedimentation. In addition, temporary seeding and mulching may be used to minimize soil erosion and provide soil stabilization on slopes.
	 Groundwater – Construction activities could potentially impact groundwater if encountered during construction. Mitigation measures would be implemented during construction activities to preserve the integrity of existing infrastructure and keep construction equipment in good working condition to prevent accidental spills. Also, dewatering may be necessary for construction below the groundwater table, if necessary, and the construction contractor would be required to include provisions for dewatering. Appropriate BMPs, monitoring of groundwater for contaminants and careful site preparation would be utilized to minimize adverse impacts. Proposed designs would comply with stormwater runoff requirements, pursuant to the Clean Water Act.
	 Wetlands – It is anticipated that an abandoned irrigation ditch located on the project site would need to be filled to construct the various site components in that location. All work would be performed in accordance with Federal, State, and CCH regulatory requirements including, but not limited to the Section 404 of the Clean Water Act, if applicable. The project team would consult with the Army Corps of Engineers, U.S. Fish and Wildlife, DLNR Commission on Water Resource Management, CCH, and other regulatory agencies, as necessary, to determine whether filling the former irrigation ditch is jurisdictional under current regulations. If the ditch is determined to be jurisdictional by one or more agencies, then the project team would work with the appropriate agencies to determine acceptable mitigation options.
	• Flora – Vegetation would need to be removed within the expansion property area for construction activities. Native Hawaiian plants are recommended for landscaping within the project area, including species such as: ko'oloa'ula, kou, 'ilie'e, and 'a'ali'i to minimize unavoidable impacts to vegetation and trees.
	• Air Quality - Construction-related air quality impacts would result from site preparation and earth moving activities, the movement of construction vehicles on unpaved areas of the site, emissions from construction equipment, and construction of structures. The construction contractor is responsible for complying with DOH regulations which prohibit visible dust emissions at property boundaries. Although short-term air quality impacts are anticipated to be less than significant, the presence of nearby residences and buildings near the project site suggests that open-air areas and naturally ventilated structures could be impacted by dust in spite of compliance with these regulations. BMPs to control dust emissions would be implemented to minimize visible fugitive dust emissions at the property line. The BMPs would include watering of active work areas,

Significant Beneficial and Adverse Impacts and Proposed Mitigation Measures (Continued)	 using wind screens, keeping adjacent paved roads clean, and covering open-bodied trucks. Measures to control construction emissions from equipment and vehicles can also be considered if necessary, such as using newer equipment and reducing on-site truck idling time. In addition, increased vehicular emissions due to disruption of traffic by construction equipment and/or commuting construction personnel can be alleviated by moving construction materials and workers to the site during off-peak traffic hours. Noise – Construction noise would be unavoidable during the project construction period. Short-term increases in noise levels would result from construction activities, vehicles and equipment. The use of muffled equipment, noise barriers, and restrictions on construction hours, as well as adherence to DOH regulations on noise mitigation, would minimize construction and traffic-related noise. For construction work to be performed at night or on weekends and holidays, a Community Noise Variance permit from the DOH would be required if it exceeds regulatory noise levels. Traffic – An unavoidable slight increase in entering and exiting proposed project traffic is anticipated in some areas during construction activities. Therefore, roadway improvements, including road widening, are recommended at the affected intersections.
	 Visual and Aesthetic Resources – During construction activities, the presence of cranes and other heavy construction equipment would alter a portion of the viewshed from nearby buildings within the WWTP site. In addition, the proposed improvements would alter the viewshed of the surrounding area by adding new three-dimensional, man-made features. During construction, fencing surrounding the construction site may be provided as needed to provide a visual screen. Any construction impacts regarding visual aesthetics are expected to be short-term and would cease after construction.
	Long-Term Impacts: The following unavoidable long-term impacts may result from development of the proposed project
	 Soils – Following upgrades to the existing WWTP, the potential would still remain for wastewater spills to occur which could result in soil contamination. Soils stability inspections in the vicinity of the foundations of proposed facilities would need to be conducted periodically.
	• Water Quality – The proposed project will provide wastewater treatment facilities needed to comply with secondary treatment standards. It is also anticipated to have beneficial impacts due to expansion of the WWTP to handle flows from future population increases and development.
	• Sludge – There will be an increase in the amount of sludge that is produced, handled, and disposed of due to the upgrade to secondary treatment.
	Groundwater – The stormwater detention/infiltration basins proposed at several locations within the project area may have an effect on the local groundwater table. However, these basins would be designed as part of a larger stormwater BMP system and are therefore anticipated to enhance the quality of stormwater recharge to groundwater. In addition, localized effects on groundwater levels may occur due to the potential reduction to local groundwater recharge.
	 Surface and Coastal Waters – There is a potential for indirect impacts due to additional development allowed by sewered areas, including an increase in wastewater flow to the Honouliuli WWTP and effluent discharged to Mamala Bay.

Significant Beneficial and Adverse Impacts and Proposed Mitigation Measures (Continued)	 Air Quality – The primary air quality concern associated with the proposed project could be potential odor nuisances. The proposed alternatives include odor control for some of the existing facilities and all new facilities. Compliance with all applicable ambient standards, including odor in terms of H₂S concentration levels, would be demonstrated 1) during the final design stage of the project when the air permit is modified for applicable criteria pollutants and 2) after the completion of construction with an ambient monitoring program for odor. There is potential to increase on-site stationary and mobile source emissions due to an increase in the plant operational capacity.
	However, the possibility of huisance odor from the Hohodidiu WWTP would likely be reduced by the upgrade to the odor control system, which would help minimize nuisance odor downwind of the Honouliuli WWTP. Operation of the plant under future proposed conditions would involve installation of new standby generators to provide expanded emergency power supply, which may cause potential short-term increase in combustion source emissions. However, given their emergency usage purposes, potential air quality impacts would be short in duration and would be unlikely to cause significant air quality impacts. Thus, mitigation measures would unlikely be necessary during the operational period. If a CHP facility is incorporated at the Honouliuli WWTP, it would need to be permitted according to State and Federal air regulations, as operation of the facility has the potential to produce additional emissions over the long term. The potential air emissions from the facility cannot be defined at this time, since the design is currently conceptual, but would be specified in air quality permit applications.
	 Traffic – An unavoidable slight increase in entering/exiting project traffic is anticipated during peak hours as a result of the proposed project. Road improvements are proposed to minimize long term local impacts to traffic.
	• Noise – The adverse noise impacts resulting from the proposed activity may include increased vehicular noise due to additional vehicles traveling to and from the facilities, and increased stationary noise resulting from new equipment at the facilities. During the operation of the project, compliance with the DOH property line noise limits for fixed machinery would also be required, and it is expected that the long-term noise impacts associated with the proposed improvements would be minimized by the adherence to the DOH rules regarding noise limits for fixed machinery. Mitigation measures include soundproofing or muffling equipment noise such that noise levels remain below the maximum allowable levels. All CCH wastewater facilities must comply with the noise requirements of the DOH, pursuant to Chapter 46, Title 11, Community Noise Control, HAR.
	 Energy Consumption – Implementation of the proposed project would increase demand in energy consumption as all alternatives involve operation of new pumps, blowers, and other equipment required to convey and treat wastewater, which would require use of fuel and electricity. There is a potential for energy recovery from digester gas or by utilizing new emerging technology for gasification of sewage sludge. CCH is currently evaluating alternatives to use the digester gas for energy recovery.
Alternatives Considered	Alternatives considered for the WWTP upgrade include the following treatment upgrades:
	No Action Alternative
	 Option 1 – Expand Existing Trickling Filter/Solids Contact (TF/SC) Process to Full Capacity
	 Option 2 – Replace Existing TF/SC Process with Activated Sludge (AS) to Full Capacity
	Option 3 – Add to Existing TF/SC Process with AS to Full Capacity

Unresolved Issues	Project descriptions for every treatment option offer conceptual designs based on available information. It is likely that adjustments will need to be made as the detailed design of the selected option proceeds. As such, the conceptual designs should be regarded as estimates and approximations.
	The proposed site layout presented in this FEIS is intended to conceptualize the potential for land use at the Honouliuli WWTP site for the ultimate build-out in Year 2050. It is anticipated that further changes to the site layout, support structures, and buildings will occur as part of later detailed design efforts and results which may vary from those documented herein and could require additional environmental review in the future.
	The Honouliuli Wastewater Basin Odor Control Project is ongoing. The project scope addresses odor and corrosion concerns in both the WWTP and tributary collection system. Design of improvements is anticipated to be completed by mid to late 2016. <u>The required environmental review associated with the Honouliuli WWTP upgrades are included in the FEIS while future improvements outside the WWTP will be the subject of additional environmental review documents to be prepared and submitted when the collection system improvements are <u>better defined</u>. will be conducted and included in documentation for proposed improvements which are not included in this DEIS.</u>
	The project assessed in this FEIS only concerns the upgrade and expansion of the Honouliuli WWTP to provide secondary treatment and accommodate projected wastewater flows, as well as addresses the potential relocation of non-process facilities that support island-wide wastewater system functions that are currently located at Sand Island WWTP to the Honouliuli WWTP site. The required environmental review associated with the Honouliuli WWTP upgrades, including estimating the flows that will be conveyed to the WWTP, is included in this FEIS. The improvements to the conveyance system will be the subject of separate environmental review documents to be prepared and submitted when the system improvements are better defined.
Compatibility with Land Use Plans and Policies	State Land Use – The project site is located in the following state land use districts: Urban and Agriculture. The proposed uses are permissible uses in these districts. Zoning – Zoning of the site is Restricted Agriculture District (AG-1) and Intensive Industrial
	District (I-2). The proposed uses are permissible uses in the Industrial zoning but will require a <u>Special Use Permit or Land Use Change for construction on the Agriculture district land</u> . Compatibility with State and Local Land Use Plans – The project alternatives generally conform
	with the various relevant land use plans, policies and regulatory controls, including, but not limited to, the Hawaii State Plan, Recreation State Functional Plan, Historic Preservation State Functional Plan, State Coastal Zone Management Program, Ocean Recreation Management Plan, and the CCH's General Plan, Primary Urban Center Development Plan, Central Oahu Sustainable Communities Plan, and Ewa Development Plan.
	Flood Insurance Rate Map – The Project Area is not located within a flood zone.

Required and Potential Permits and Approvals	Required and potential clearances and permits needed from the various Federal, State and CCH agencies include but are not limited to the following:
	Enderol
	Federal.
	Department of the Army Permit (CWA Section 404: Rivers and Harbors Act Section 10)
	U.S. Environmental Protection Agency:
	CWA Section 301(h) Review
	FAA
	Air Traffic Flight Path Approval
	State of Hawaii:
	Department of Business, Economic Development and Tourism, Office of Planning:
	Coastal Zone Management Consistency Determination
	Department of Health (DOH):
	Air Pollution Control Permits (Covered Source Permit and/or Noncovered Source Permit)
	Construction Plan Review and Approval
	Noise Variance Permit
	Clean Water Branch (CWB) Individual NPDES Form – Coverage for Discharge of Municipal
	Wastewater from New and Existing Publicly Owned Treatment Works (Modification)
	CWB NOI Form – Coverage under the NPDES General Permit for Storm Water Discharges
	Associated with Construction Activities
	CWB NOI Form – Coverage under the NPDES General Permit for Discharges Associated with
	Construction Activity Dewatering (if required)
	Department of Land and Natural Resources – Commission on Water Resource Management Stream Channel Alteration Permit (SCAP)
	Land Use Commission Special Use Permit
	City and County of Honolulu (CCH):
	Board of Water Supply (BWS):
	Water and Water System Requirements
	Construction Plan Review and Approval
	Department of Transportation
	Street Usage Permit for Construction
	Department of Environmental Services:
	EIS Approval
	Permission to Discharge into CCH storm drain system (required for CWB NPDES stormwater
	permits)
	Department of Planning and Permitting (DPP):
	Building Permit
	Conditional Use Permit
	Construction Plan Review and Approval
	Public Infrastructure Map Revision
	Dewatering Permit
	Electrical Permit
	Flood Certification
	Grading and Erosion Control Plan Review
	Grading, Grubbing, and Stockpiling Permit
	Height Variance
	Plumbing Permit

Shoreline Setback Variance Sidewalk/Driveway Work Permit <u>Special Use Permit</u> Trenching Permit
Other: Utility Companies Utility Service Requirements Permit Regarding Work on Utility Lines OR&P RR Crossing Traffic Control Plans

1 INTRODUCTION

The City and County of Honolulu (CCH) Department of Environmental Services (ENV) is conducting a planning and engineering study for improvements to the Honouliuli sewer basin wastewater conveyance and treatment facilities required to meet service demands for the year 2035 and beyond. The CCH ENV is undertaking the study to confirm that public investment in essential wastewater infrastructure is directed toward system improvements that provide the greatest benefit to current and future users.

The Honouliuli/Waipahu/Pearl City Wastewater Facilities Plan (Honouliuli Fac Plan) updates the existing West Mamala Bay Facilities Plan (2001). The updating process involves reviewing and evaluating the alternatives and recommendation of the West Mamala Bay Facilities Plan to identify alternatives for the current Honouliuli Fac Plan.

The 2010 Consent Decree (Civil No. 94–00765 DAE–KSC) between CCH, DOH, and U.S. Environmental Protection Agency (EPA), now referred to as the First Amended Consent Decree (FACD), requires CCH to update its wastewater collection system and WWTPs. In the FACD, the CCH agreed to implement measures in its collection system that include the following: repair and replacement of sewers, force mains, and wastewater pump stations; development of condition assessments and spill contingency plans for force mains; development of condition assessments and spill contingency plans for force mains; development of condition assessments and spill contingency plans for force mains; development of condition assessments and a systematic cleaning program for gravity mains; and development of a control program for the discharge of grease. In addition, the CCH agreed to complete improvements to the Honouliuli and Sand Island WWTPs. One of the key FACD requirements is that the Honouliuli WWTP be upgraded to a full secondary treatment facility by 2024. Therefore, the Honouliuli Fac Plan evaluates and recommends the necessary improvements to upgrade the Honouliuli WWTP to full secondary treatment to comply with the FACD.

The CCH ENV, the proposing agency, has determined that the proposed alternative actions require the preparation of an Environmental Impact Statement (EIS). The Final Environmental Assessment-Environmental Impact Statement Preparation Notice (FEA-EISPN) submitted for this project and published in *The Environmental Notice* in July 2010 examined potential impacts associated with proposed upgrades to and/or expansion of the Honouliuli major sewer conveyance system in addition to the Honouliuli WWTP itself. The FEA-EISPN predates the issuance of the FACD referenced above. Since the FEA-EISPN submittal, the focus of the Honouliuli Fac Plan has shifted to the Honouliuli WWTP improvements necessary to comply with the FACD and meet the June 1, 2024 upgrade deadline. Meanwhile, the timeline for planning and engineering efforts for the conveyance system improvements required to accommodate future wastewater flows associated with projected growth in the sewer basin is independent of the June 1, 2024 upgrade deadline, and the recommendations for the conveyance system are still under consideration.

Therefore, the project assessed in this Final Environmental Impact Statement (FEIS) only concerns the upgrade and expansion of the Honouliuli WWTP to provide secondary treatment and accommodate projected wastewater flows, as well as addresses the potential relocation of non-process facilities (including Administrative support, Central Supervisory Control and Data Acquisition [SCADA] operations, Laboratory, Ocean Team, Central Shops and the Central Warehouse) that support island-wide wastewater system functions that are currently located at Sand Island WWTP to the Honouliuli WWTP site. The improvements to the conveyance system and other FACD requirements will be the subject of separate HEPA environmental review documents to be prepared and submitted when the system improvements are better defined. The CCH ENV communicated this HEPA review approach to OEQC and received OEQC's concurrence (OEQC 2013).

1.1 Background

The Honouliuli WWTP was originally built in 1978 as a primary plant and became operational in 1984. As of December 16, 1993, the Honouliuli WWTP operated under NPDES No. HI0020877. The CCH applied to the U.S. Environmental Protection Agency (EPA) to renew the permit before it expired on June 5, 1996. In 2009, the EPA denied reissuing the permit. The Honouliuli WWTP operated under an administrative extension of the permit after

it expired in 1996. The NPDES permit was then reissued by the DOH for the Honouliuli WWTP, which became effective March 30, 2014.

The WWTP provides primary treatment to all flow received. In 2013, the average daily flow (ADF) was approximately 26.1 million gallons per day (MGD). Planning for the existing secondary treatment system began in 1990 as a first step toward reclamation of effluent for reuse through irrigation. The existing secondary treatment system was constructed in 1996, in preparation for future water reclamation purposes. Approximately 13 mgd (or about 50 percent [%] of the ADF) receives secondary treatment. The Honouliuli Water Recycling Facility (HWRF) was constructed in 2000 specifically for water reclamation purposes. It is now owned by the Board of Water Supply (BWS) and operated by Veolia. The Facility has a capacity of 12 MGD and produces two grades of recycled water, R1 Water is used for irrigation and Reverse Osmosis (RO) is used for industrial purposes. The facility is currently capable of supplying 10 MGD of R1 water and 2 MGD of RO water.

ADF includes the flow generated by the population in the service area, including residential, commercial, and industrial uses. In addition to these flows, ADF includes water that may enter the system through infiltration, where pipes and mains lie below the water table during normal dry weather. The Honouliuli WWTP serves one of the fastest growing areas in the state; therefore, wastewater flow to the WWTP is projected to increase based on the high potential for population growth, as discussed further in Section 3, and improvements are required to the WWTP to accommodate this additional flow.

As previously noted, in 2010 the CCH, State, and EPA entered into an agreement currently referred to as the FACD (Civil No. 94-00765 DAE-KSC) that requires the CCH to meet certain established milestones for improving its wastewater collection system and WWTPs. The FACD requires the Honouliuli WWTP to be upgraded to a full secondary treatment facility by 2024. The Honouliuli Fac Plan recommends the necessary improvements to upgrade the Honouliuli WWTP to full secondary treatment to comply with the FACD.

In 2011, CCH acquired 48.4 acres of land abutting the north and east boundaries of the existing Honouliuli WWTP (herein referred to as the expansion property) to provide sufficient space for treatment facilities to comply with the FACD mandates. The Honouliuli WWTP site area, including the expansion property, is currently 100.5 acres.

A detailed description of the existing Honouliuli WWTP is included in Section 1.3 of this FEIS. Alternatives considered for upgrading the Honouliuli WWTP (both hydraulic expansion and expansion to full secondary treatment) and the potential relocation of non-process facilities to the Honouliuli WWTP site are the focus of this FEIS.

1.2 Project Location

The study area includes the existing Honouliuli WWTP located at 91-1000 Geiger Road and expansion property to the north and east, adjacent to the Coral Creek Golf Course. The Honouliuli WWTP project site is identified on Figures 1-1 and 1-2.





1.3 Project Need

This project is being undertaken to address the following needs:

- Protect public health and safety through the development and maintenance of municipal wastewater treatment facilities
- Meet secondary treatment requirements set by EPA under the Clean Water Act
- Accommodate projected wastewater flows from the Honouliuli sewer basin through 2050
- Relocate non-process facilities to accommodate future needs that will arise from upgrading Honouliuli and Sand Island WWTPs to secondary treatment
- Implement certain requirements of federal and state permits and mandates

This project focuses on providing hydraulic and treatment upgrades to the Honouliuli WWTP in order to comply with the FACD. The objective of this project is to comply with regulatory mandates from the State of Hawaii Department of Health (DOH) and EPA, and to provide a basis to meet future wastewater management needs.

1.3.1 Regulatory Mandates

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

- Propose the use of County and State lands and County funds.
- Propose any wastewater facility, except an individual wastewater system or a wastewater facility serving fewer than 50 single-family dwellings or the equivalent.
- Propose any waste-to-energy facility.

The proposing and accepting agency for this project is the CCH ENV. The DEIS was submitted to the Office of Environmental Quality Control for publication in *The Environmental Notice* on May 8, 2016 and was available to various Federal, State, and CCH agencies. The intent of the DEIS was to notify interested parties of the project of the potential impacts and mitigation measures and to solicit comments from stakeholders including government agencies, community organizations, private businesses, and the general public.

Following the DEIS, this FEIS has been_prepared to assess the overall environmental impacts of the recommended alternative, including any written comments received during the public review of the DEIS. The DEIS and the FEIS have been prepared in compliance with the HRS Chapter 343. As part of the environmental process, there was a 45-day review and comment period and informational meetings after the DEIS was published.