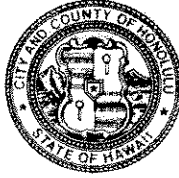


AUG 23 2007

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

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WW.P 07-0189

August 9, 2007

Mr. Laurence K. Lau, Acting Director
Office of Environmental Quality Control
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Mr. Lau:


SUBJECT: Final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI)
Beachwalk Wastewater Pump Station and Force Main and Ala Wai Trunk Sewer Replacement
Honolulu, Island of O'ahu, Hawaii

The Department of Design and Construction (DDC) has reviewed the comments received during the 30-day public comment period which began May 23, 2006, and has determined that the proposed project will not have significant adverse environmental impacts.

DDC hereby issues this FONSI and requests publication of this notice in the next available issue of the *Environmental Notice*.

We have enclosed a completed OEQC Publication Form and 3 copies of the Final EA (2 hard copies and 1 PDF copy on compact disk). Please contact Mr. Jay Hamai, Wastewater Division, at 768-8750, if you have any questions.

Very truly yours,


Eugene C. Lee, P.E.
Director

Enclosures

FINAL ENVIRONMENTAL ASSESSMENT

Prepared in Accordance with Requirements of Chapter 343, Hawai'i Revised Statutes

Beachwalk Wastewater Pump Station and Force Main and Ala Wai Trunk Sewer Replacement Honolulu, Island of O'ahu

TMK 2-6-18: Parcel 11

August 10, 2007

Department of Design and Construction
City and County of Honolulu
Honolulu, Hawai'i

FINAL ENVIRONMENTAL ASSESSMENT

Beachwalk Wastewater Pump Station and Force Main and Ala Wai Trunk Sewer Replacement Honolulu, Island of O‘ahu

TMK 2-6-18: Parcel 11

August 10, 2007

PREPARED FOR:
Department of Design and Construction
City and County of Honolulu
Honolulu, Hawai‘i

PREPARED BY:

R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawai‘i 96817-4941
1-17693-0P

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SECTION 1 PROJECT SUMMARY

Proposed Action:	Replacement of the existing Beachwalk Wastewater Pump Station (WWPS), Replacement of Beachwalk 42" Force Main, and Replacement of the Ala Wai Trunk Sewer
Applicant and Proposing Agency:	Department of Design and Construction Eugene C. Lee, Director
Agent for the Applicant:	R.M. Towill Corporation 420 Waiakamilo Road, #411 Honolulu, Hawai'i 96817 Contact: Mr. Chester Koga, Phone: 842-1133
Project Cost:	\$57.4 million
Project Location:	Lewers Street, Kaiolu Street, Kuhio Avenue, Ala Wai Boulevard, Ala Wai Canal, Ala Wai Park, Ala Wai Promenade and Ala Moana Park
Recorded Fee Owner:	City and County of Honolulu
Tax Map Key:	Beachwalk WWPS: (1) 2-6-18: 11 Ala Wai Trunk Sewer: along Lewers Street to Ala Wai Canal Beachwalk Force Main: along Kaiolu Street, Ala Wai Boulevard, Ala Wai Park and Promenade to Ala Moana Park
Area:	Existing Beachwalk Pump Station Site: 10,855 square feet; Trunk Sewer: 927 lineal feet; Force Main: 1.14 to 1.32 miles in length
State Land Use:	Urban District
Primary Urban Center Development Plan:	Resort on the DP Land Use Map (illustrative of the policy statements in the DP text)
County Zoning:	Waikiki Special District – Apartment Mixed Use, Apartment, Public Precinct, P-2, BMX-3, A-2
Special Management Area:	Located within the SMA
Flood Insurance Rate Map:	Flood Zone A, AE2, A07– areas within the 500 year floodplain
Existing Use:	Beachwalk WWPS, Force Main, and Trunk Sewer
Surrounding Uses:	Apartments, Hotels, Commercial, Open Space, Golf Course and Park
Permits Required:	Special Management Area Permit, Waikiki Special District, Building Permit, NPDES (Stormwater and Dewatering) Permits, Combustible and Flammable Liquids Tank Installation Permit, Grading, Grubbing, Excavation and Stockpiling Permits, Street Usage Permit, Flood Determination, Plan Review - BWS and DPP, Public Infrastructure Map Amendment, Air Pollution Control, Community Noise Control, Disability and Communication Access Board

SECTION 2 DESCRIPTION OF PROJECT

2.1 BACKGROUND

The Department of Design and Construction (DDC), City and County of Honolulu, proposes to replace the existing Beachwalk Wastewater Pump Station (WWPS), Force Main, and Ala Wai Trunk Sewer to increase the capacity and overall reliability of the Beachwalk WWPS, and to upgrade the currently aging force main and trunk sewer.

The Beachwalk Wastewater Pump Station projects were initiated by the East Mamala Bay Facilities Plan (Dec. 1993) to address the following concerns:

- The pump station and force main are nearing the end of their designed useful service lives;
- The pump station is located in a major tourist resort area;
- The Ala Wai Trunk Sewer (Lewers Street) needs to be replaced;
- Projected peak flows are expected to be greater than the design capacity of the existing influent gravity sewers, and pump station; and
- Recent break in the force main indicated there is a need to improve reliability and consequences of failure of this system are severe and improving reliability is a high priority for the City.

DDC created three projects which are the subject of this environmental assessment (EA) to address these concerns and to develop a solution that is both cost effective and publicly acceptable. The objective of the proposed improvements is to ***reduce and prevent the risk of wastewater spills in the Beachwalk WWPS tributary area, which includes Waikiki.***

In March of 2006, the existing Beachwalk force main ruptured under Kaiolu Street, forcing the City & County to divert raw wastewater into the Ala Wai Canal. An emergency temporary bypass line was constructed to avoid further discharges should the force main fails again. The temporary bypass line is now used as a back up force main for the existing Beachwalk force main and utilized on an as needed basis.

The temporary line will remain in-place until this proposed project is complete. The emergency construction of the temporary bypass line involved the installation of a bypass line along portions of Ala Wai Boulevard, within the Ala Wai Canal, along a portion of the Ala Wai Neighborhood Park and along the makai side of Ala Moana Boulevard from the Canal to the Moana Park WWPS.

2.2 PROJECT PURPOSE AND NEED

This Environmental Assessment (EA) has been prepared in accordance with the Hawai'i Revised Statutes (HRS), Chapter 343, Section 343-5-1, which states an environmental assessment shall be required for actions which “[P]ropose the use of state or county lands or the use of state or county funds, other than funds to be used for feasibility or planning studies for possible future programs or projects which the agency has not approved, adopted, or funded, or funds to be used for the acquisition of unimproved real property; provided that the agency shall consider environmental factors and available alternatives in its feasibility or planning studies.”

The subject properties are owned by the City and County of Honolulu, which necessitates the preparation of this EA.

A Draft EA was published for public review in the May 23, 2006 issue of the State Department of Health (DOH), Office of Environmental Quality Control (OEQC), Environmental Notice. Comments were received during the public comment period (see Appendix A - Public Consultation).

This Final EA provides additional information based on the comments received that further describes the proposed project, the environmental conditions of the site, the potential for significant adverse impacts, and the application of mitigation measures as appropriate, to reduce the potential for significant environmental impacts.

The Final EA and accompanying Finding of No Significant Impact (FONSI) will be filed with the OEQC by the Department of Design and Construction.

2.3 PROJECT LOCATION

The locations of the existing Beachwalk WWPS, Ala Wai Trunk Sewer, and Beachwalk Force Main are shown in **Figure 2-1, Project Location Map**.

2.3.1 BEACHWALK WWPS TRIBUTARY AREA

The tributary area (service area) for the Beachwalk WWPS is shown in **Figure 2-2**. The Beachwalk WWPS tributary area encompasses a total area of approximately 1,870 acres. The Ala Wai Canal separates the tributary area into two sub-areas: mauka and makai. The mauka area stretches from McCully to Kapahulu. The makai area includes the Waikiki community and the Diamond Head area. The Beachwalk WWPS transports wastewater to the Ala Moana WWPS through the 42-inch Beachwalk WWPS Force main and the 69-inch Ala Moana Trunk Sewer (see **Figure 2-1**).

2.3.2 BEACHWALK FORCE MAIN

The existing 42-inch force main was constructed in 1964 and is approximately 6,500 feet long (see **Figure 2-1**). The force main consists of roughly 4,000 feet of reinforced concrete pipe (RCP) and 2,500 feet of concrete cylinder pipe (CCP). Several air release valves are located

along the Ala Wai Canal. The force main runs from the Beachwalk WWPS, mauka along Kaiolu Street, Ewa along Ala Wai Boulevard, Ewa along Ala Moana Boulevard, and connects to the 69-inch Ala Moana Trunk Sewer located at Ala Moana Beach Park.

2.3.3 ALA WAI TRUNK SEWER

The Ala Wai Trunk Sewer consists of approximately 930 feet of 48-inch diameter reinforced concrete pipe extending from the Beachwalk WWPS to a junction manhole at the intersection of Lewers Street and Ala Wai Boulevard (see Figure 2-1). An inverted siphon from across (east) of the Ala Wai Canal and a 27-inch diameter sewer from the Diamond Head direction along Ala Wai Boulevard also enter this manhole. Construction of the sewer was completed in 1964.

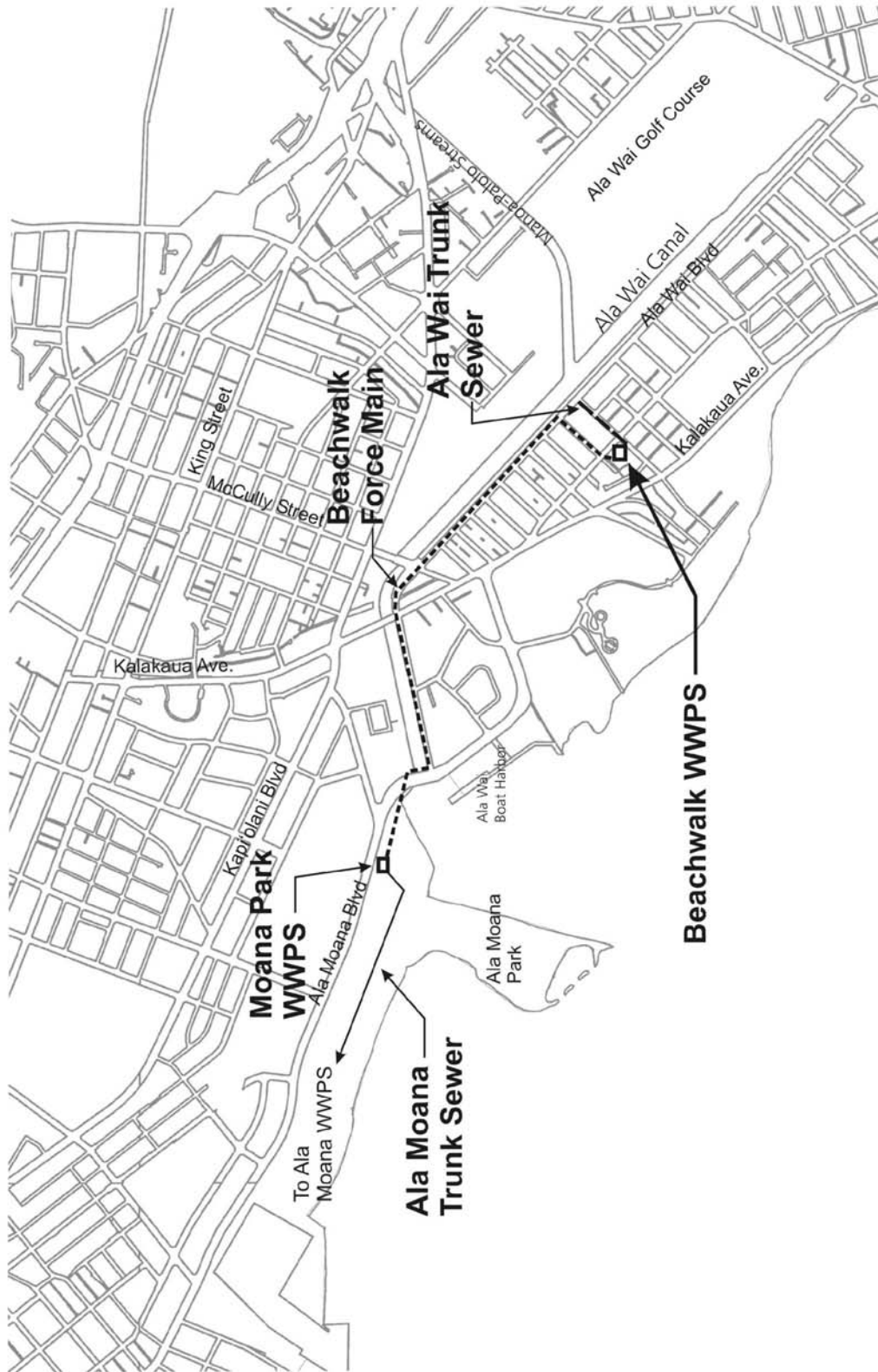


FIGURE 2-1
PROJECT LOCATION MAP
 Beachwalk WWPS & Force Main
 and Ala Wai Trunk Sewer Replacement

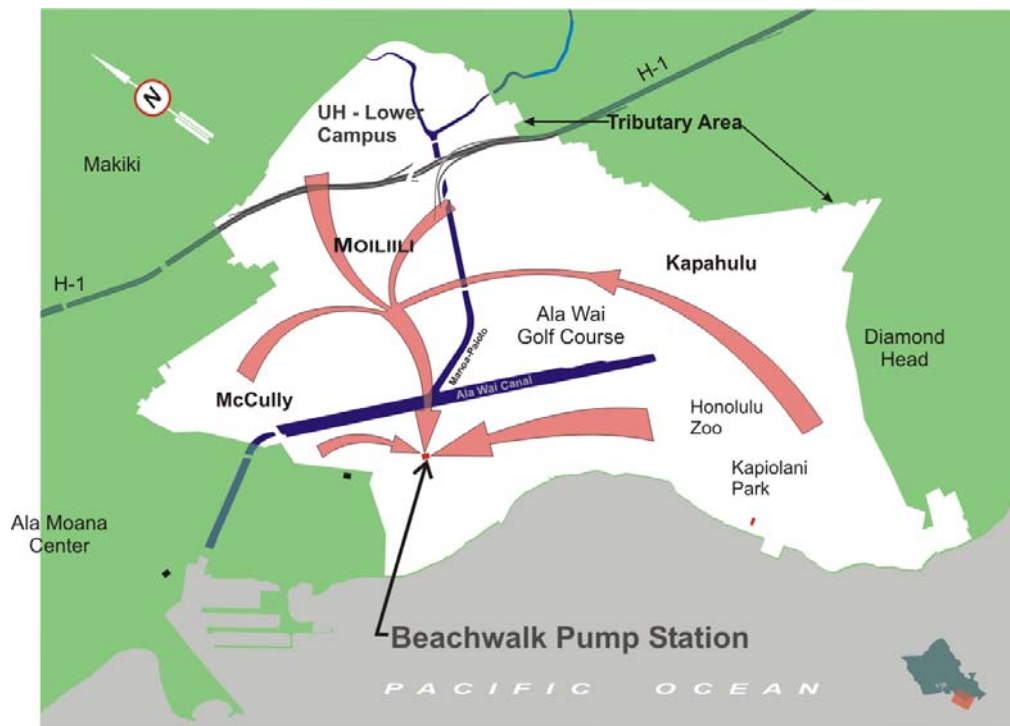


Figure 2-2. Beachwalk WWPS Tributary Area

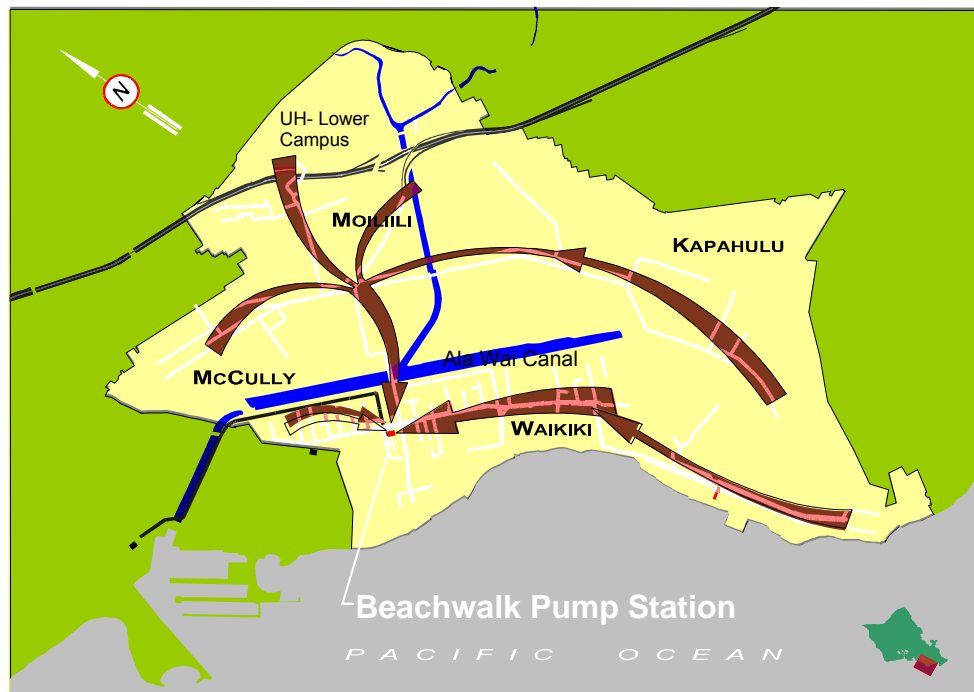


Figure 2-3. Beachwalk WWPS Collection System

2.4 WASTEWATER PUMP STATION

2.4.1 EXISTING CONDITIONS

The Beachwalk WWPS was designed in 1963 with a peak flow capacity of 32 mgd. Four centrifugal pumps, located in a dry well, pump wastewater from a two-compartment wet well. Three pumps must be operating to meet the design capacity. The static head and total dynamic head (TDH) at 32 mgd are 12.5 feet and 35 feet, respectively. The major components of the Beachwalk WWPS are:

- Two variable speed pumps (Pumps 1 and 3) - 150 horsepower (HP) units with liquid rheostat (Flomatcher) variable speed controls
- Two constant speed pumps (Pumps 2 and 4) - 150 HP and 200 HP units
- Four hydraulically controlled ball check valves - one for each pump, provided for surge control
- Natural ventilation system - designed in compliance with past design standards; does not meet present design standards
- One activated carbon canister for odor control - portable unit with capacity of 100 cubic feet per minute (cfm)
- One 600 kilowatt (KW) emergency generator - provides power to three of four pumps, Motor Control Center (MCC), and lighting during utility power outages.
- One diesel fuel tank - capacity of 6,000 gallons will last 66 continuous hours at full load.
- Wet well divided into two compartments - total effective volume is 56,000 gallons (between lead pump on-off levels). The wet well does not contain an emergency overflow line.
- Four 10-inch standby force main connections - available for emergencies or maintenance purposes.
- Two 10-inch portable pumps - available at the pump station for emergencies or maintenance purposes.
- The pump station is monitored by the Supervisory Control and Data Acquisition (SCADA) system.

2.4.2 CURRENT OPERATIONS

The variable speed pumps (Pumps 1 and 3) are normally designated as the “Lead” and “Lag 1” pumps. The constant speed pumps (Pumps 2 and 4) serve mainly as the “Lag 2” and “Lag 3” pumps. On a typical day, with the Flomatcher operating properly, the “Lead” pump alone can accommodate incoming flows. If the Flomatcher malfunctions, the “Lead” and “Lag 1” pumps are needed to convey average day flows.

A pump test was conducted in February 1996. The test results are summarized below:

Table 2-1. Beachwalk WWPS Pump Test Results

Pump	Pumping Rate (mgd)	TDH(feet)
Pump 1(100% speed)	14.6	19.7
Pump 2	18.8	19.1
Pump 3 (100% speed)	18.1	19.0
Pump 4	23.8	22.9
Pumps 1 & 3	24.5	27.2
Pump 1, 2 & 3	29.0	32.8
Pump 1, 3 & 4	32.5	36.3
All four pumps	35.0	39.0

Historical Effects of Peak Flows

Based on records from 1989 to 1998, there were no spills at the Beachwalk WWPS. The operator of the facility recalls that there has been a storm event requiring operation of all four pumps. Wet weather flows in November 1996 required operation of three pumps.

Complaint History

There were two recorded odor complaints between 1989 and 1998: 12 March 1990 and 22 November 1992. The 1990 odor complaint was attributed to a nearby storm drain. No information was available for the 1992 odor complaint. During the 8 February 1996 wet well inspection, hydrogen sulfide levels of approximately 2 parts per million (ppm) were measured in the wet well at 12:00 midnight.

There have been no recorded noise complaints. Noise measurements of the existing pump station were performed on 1 February 1996 between 6:00 and 7:10 AM. The high pitched pump noise was slightly audible above the dominant traffic noise. Measured pump noise at the west and south property lines ranged from 53 to 54 decibels (dBA). The measured pump noise slightly exceeds the Department of Health nighttime noise limit of 50 dBA.

2.4.3 DESIGN FLOWS

The Beachwalk WWPS will be sized to accommodate a design peak flow of 37.9 million gallons per day (mgd). The design peak flow was obtained from the Final Sewer Rehabilitation and Infiltration and Inflow Minimization Study (Final Sewer I/I Plan) prepared by Fukunaga and Associates, Inc. in December, 1999. The projected flow was based on a 2-year, 6-hour design storm and future (2020) population.

2.5 BEACHWALK FORCE MAIN

2.5.1 EXISTING CONDITIONS

The existing 42-inch force main was constructed in 1964 and is approximately 6,500 feet long (see Figure 2-1). The force main consists of roughly 4,000 feet of reinforced concrete pipe (RCP) and 2,500 feet of concrete cylinder pipe (CCP). Based on a maximum velocity of 10 feet per second (fps), the force main has a capacity of 62 million gallons per day (mgd). An emergency bypass connection is provided at the Beachwalk WWPS. Several air relief valves are located along the Ala Wai Canal. The off-site venturi flow meter and meter box will be removed.

The Beachwalk Force Main is 40 years old, and because it is a single force main system, there is no redundancy or back-up system in the event of a force main break or should there be a need to shut down the force main for maintenance. As a critical component of wastewater collection in the service area, its failure could result in wastewater backups and spills in Waikiki as demonstrated by the 2006 spill into the Ala Wai Canal. The bypass into the Ala Wai Canal is not operable because of the frozen bypass valve. Until a replacement force main is built, the existing force main cannot be adequately repaired. The existing force main is not hydraulically deficient, but the need for servicing and repair is becoming rapidly more important.

Until this proposed project is completed, the emergency temporary bypass line, constructed in 2006, will be used as a back up for the existing force main.

2.6 ALA WAI TRUNK SEWER

2.6.1. EXISTING CONDITIONS

The City has identified the Ala Wai Trunk Sewer (under Lewers Street) as a primary hydraulic limitation within the tributary area. This trunk sewer transports wastewater generated in the Mauka sub-area and the Public Bath WWPS tributary area directly to the Beachwalk WWPS. The Ala Wai Trunk Sewer consists of approximately 930 feet of 48-inch diameter reinforced concrete pipe extending from the Beachwalk WWPS to a junction manhole at the intersection of Lewers Street and Ala Wai Boulevard (see Figure 2-1). An inverted siphon from across the Ala Wai Canal and a 27-inch diameter sewer from the Diamond Head direction along Ala Wai Boulevard also enter this manhole. In this section, between the Beachwalk WWPS and the manhole at the Ala Wai Canal, there is a portion of the pipe that has settled over time to where there is nearly a foot difference in elevation between manholes upstream and downstream of the settled area. This settlement is another reason for the replacement of the trunk sewer as this “sag” creates an area where solids in the pipe can settle and reduce the efficiency of the trunk sewer. Construction of the sewer was completed in 1964.

2.7 PROJECT ALTERNATIVES

This section describes the alternative examined for each of the three (3) projects:

2.7.1 BEACHWALK PUMP STATION

Three alternatives were considered for the Beachwalk Pump Station. Different variations of each alternative were evaluated and include:

- **Alternative 1 – Existing Beachwalk Pump Station**
 - 1.A Construct new WWPS at the Beachwalk site. Demolish the existing WWPS
 - 1.B Modify the existing Beachwalk WWPS and construct a new WWPS on the Existing Beachwalk WWPS site. Dry weather flows would be handled by the new WWPS. Both pump stations together convey peak wet weather flows. Existing WWPS will serve as a back-up to the new WWPS during dry weather. Replace Ala Wai Trunk Sewer
 - 1.C Improve or replace Beachwalk Force Main
 - 1.D-Modify the existing WWPS.
- **Alternative 2 – New Mauka Pump Station at Golf Course Maintenance Facility**
 - 2A – New pump station near Ala Wai Park
 - 2B – New pump station near to Ala Wai Elementary School
 - 2C - Ala Wai Golf Course Site “C” - Construct a new WWPS between the fairways of the 13th, 14th and 15th holes of the Ala Wai Golf Course
 - 2D - Ala Wai Golf Course Site “D” - Construct a new WWPS between the fairways of the 15th, 16th and 17th holes of the Ala Wai Golf Course
 - 2E - Ala Wai Golf Course Site “E” - Construct a new WWPS between the fairways of the 10th, 17th and 18th holes of the Ala Wai Golf Course
 - 2F- Maintenance Facility Site - Construct a new WWPS next to the existing maintenance facility in the northwest corner of the Ala Wai Golf Course.
- **Alternative 3 – New Mauka Pump Station within Golf Course**
 - 3.A Combine Alternatives 1 and 2 and split flows

The proposed alternative pump station sites were presented to the community for input and several alternatives listed below were eliminated after the public meetings:

- Alternative 1D- The invert of the existing wet well is too high to eliminate the need for an

inverted siphon under the Ala Wai Canal nor to address the existing surcharge flow conditions in the Ala Wai Trunk Sewer. Lowering the invert of the existing WWPS wet well is not practical.

- Alternative 1B - This alternative had significantly higher capital and annual operation and maintenance costs because two pump stations are required.
- Alternative 2A - Concerns were raised during the Public Participation Program about potential adverse impacts to the users of Ala Wai Park.
- Alternative 2B - Concerns were raised during the Public Participation Program about potential adverse impacts to Ala Wai Elementary School.
- Alternative 2D - Higher life-cycle cost than Alternative 2C with no other advantage over Alternative 2C.
- Alternative 2E - Significantly higher life-cycle cost than Alternative 2C with no other advantage over Alternative 2C.
- Alternative 3A - This alternative had significantly higher capital and annual operation and maintenance costs because two pump stations and force mains are required.

Based on comments received, the following summarizes the advantages and disadvantages of the remaining alternatives.

Alternative 1A – Beachwalk Site- New WWPS – Advantages / Disadvantages

- No impact on current and future use of the Ala Wai Golf Course parcel.
- Good site access under normal operating conditions.
- Nominal increase in maintenance effort.
- Moderate permit and approval requirements.
- Old force main can be used as a backup
- Lowest cost alternative.
- WWPS remains in Waikiki. The station's proximity to existing development increases the risk of odor and noise nuisances.
- Risk that adjacent structures, utilities and roadways may be adversely impacted by construction activities.

Alternative 2C – Ala Wai GC Site – Advantages / Disadvantages

- WWPS moved out of Waikiki. Moving the WWPS away from Waikiki minimizes adverse impacts during and after construction.
- Land availability. Site allows for future expansion.
- Will impact current and future use of the Ala Wai Golf Course parcel.
- Poor site access. Construction and post construction activities will directly and adversely impact the golf course.
- Availability of utilities. Water, power and other utilities must be extended to the site.
- Moderate increase in maintenance effort. This alternative requires roughly 1,500 more feet of pipe than the Beachwalk Site alternative.

Alternative 2F – Maintenance Facility Site – Advantages / Disadvantages

- WWPS moved out of Waikiki. Moving the WWPS away from Waikiki minimizes adverse impacts during and after construction.
- Minimal impact on current and future use of the Ala Wai Golf Course parcel.
- Improved emergency access.
- Highest cost alternative.
- Significant increase in maintenance effort. This alternative involves roughly 4,000 more feet of pipe than the Beachwalk Site alternative.

2.7.2 BEACHWALK FORCE MAIN (FM)

Three (3) alternatives were evaluated for the location of the FM. The location of the FM always started with the alternatives for the Beachwalk WWPS (see **Figure 2-4 and 2-5**).

- ***Alternative 1— Maintenance Facility Site (Mauka of Ala Wai Golf Course)***
 - Option 1.A — Force Main along Bike/Walk Path and Ala Wai Boulevard
 - Option 1.B — Force Main along Hihiwai Street and the Convention Center
 - Option 1.C — Force Main along Bike/Walk Path and the Convention Center
- ***Alternative 2- Ala Wai Golf Course Site***
 - Option 2.A — Force Main along Bike/Walk Path and Ala Wai Boulevard

-
- Option 2.B — Force Main along Hihiwai Street and Convention Center
 - Option 2.C — Force Main along Bike/Walk Path and Convention Center
 - **Alternative 3— Beachwalk WWPS Site (Existing)**
 - Option 3.A — Force Main along Bike/Walk Path and Ala Wai Boulevard
 - Option 3.B — Force Main along Ala Wai Boulevard
 - Option 3.C — Force Main along Bike/Walk Path and Convention Center
 - Option 3.D — Force Main Along Kuhio and Kalakaua Avenues and Ala Wai Boulevard

The preferred alternative for the Beachwalk FM was a combination of Option 1.C, 2.C, and 3.A. Cost for the preferred alternative is shown in **Table 2-2**.

Table 2-2. Beachwalk Force Main Recommended Alignment

Recommended Alignment	Figure	Length (Feet)	Estimated Construction Cost*
OPTION 1.C	2-5	8850	\$25.8 mil.
OPTION 2.C	2-5	9050	\$32.8 mil.
OPTION 3.A	2-5	7250	\$32.1 mil.

* 2006 Dollars

2.7.3 ALA WAI TRUNK SEWER

Improvements to the Ala Wai Trunk Sewer were based on the location of the Beachwalk WWPS. Three alternative sites for the WWPS were evaluated as follows:

- Alternative 1A, Beachwalk Site - Construct a new WWPS on the existing Beachwalk WWPS site.
- Alternative 2C, Ala Wai Golf Course Site - Construct a new WWPS between the fairways of the 13 14 and 15 holes of the Ala Wai Golf Course.
- Alternative 2F, Maintenance Facility Site - Construct a new WWPS next to the existing maintenance facility in the northwest corner of the Ala Wai Golf Course.

Alternate 1A Beachwalk Site

A new WWPS will be constructed within the existing Beachwalk WWPS site. Two possible options were evaluated: (1) The existing 48-inch Ala Wai Trunk Sewer will be rehabilitated and reused or (2) The existing 48-inch Ala Wai Trunk Sewer will be abandoned and a new sewer line constructed. In each option, the sewer will be designed to accommodate the sewer flows between the new WWPS to the existing Junction SMH located at the intersection of Lewers Street and Ala Wai Blvd. Evaluation of the Ala Wai Siphon and the existing 27-inch sewer line in Ala Wai Blvd is not in this project's scope of work. An estimated construction cost is \$3.2 mil. (2006 dollars).

Alternative 2C & 2F

The existing Beachwalk WWPS will be abandoned. This will allow the existing 48-inch Ala Wai Trunk Sewer to be abandoned. Where possible, sewer reconnections will be made outside of the property to avoid the need for easements. A new gravity sewer line from the Beachwalk WWPS connecting to a new Junction Sewer Manhole (SMH) located at the intersection of Lewers Street and Ala Wai Blvd will be provided. The existing 27-inch sewer line in Ala Wai Blvd will be intercepted by this Junction SMH. A new gravity sewer line will extend from this Junction Sewer Manhole and cross under the Ala Wai Canal to the Ala Wai Golf Course Site "C" or the Maintenance Facility Site.

For Alternatives 2C & 2F, the existing Beachwalk WWPS will be replaced with a new WWPS located on the mauka side of the Ala Wai Canal. Design sewer flows will be based on the contribution from the makai tributary area entering the existing Beachwalk WWPS's 30-inch influent sewer line. Research of available as-built plans indicates that an existing 6-inch sewer line connects to several properties at Lauula Street and enters the Beachwalk WWPS from the makai direction. This sewer line will also need to be reconnected within the site. A future easement will be required if the site is to be abandoned. It is also difficult to construct another sewer line in Kuhio Avenue which would run parallel to the existing 21- inch and 24-inch sewers and an abandoned 16-inch sewer. It is proposed to create an easement within the property frontage and construct the sewer within this easement. A new SMH will be constructed over the

existing 30-inch influent sewer line entering the Beachwalk WWPS. Calculations indicate that a new 27-inch RCP will be required for the new gravity sewer line. The proposed alignment will be parallel to the existing 48-inch Ala Wai Trunk Sewer on the Diamond Head side, crossing Kuhio Avenue to Lewers Street. Along Lewers Street, the sewer line will run parallel to the existing 48-inch Trunk Sewer until Ala Wai Blvd, where it will angle to a new drop SMH to be constructed over the existing 27-inch sewer line in Ala Wai Blvd. A 30-inch RCP will connect another SMH located at the sidewalk along the canal. This alignment will allow the existing 48-inch Ala Wai Trunk Sewer to remain in service until construction of the new sewer line is completed. At that time, the existing 48-inch sewer line will be abandoned in place. Continuation of the gravity sewer line crossing under the Ala Wai Canal to the respective WWPS sites was included in the WWPS site selection analysis. Sizing of this portion of the gravity sewer line will incorporate design flows from the existing 27-inch sewer line in Ala Wai Blvd. A connection will be made to the siphon to allow emergency by-pass provisions.

It is anticipated that a combination of open trenching and a “trenchless method” will be used for construction. A trenchless method will reduce impacts to traffic, extensive street reconstruction and avoid costly utility relocations and extensive dewatering. Construction of the sewer manholes however, will require open pits, sheeting, shoring and major dewatering. The manhole locations at the intersection of Kuhio Avenue and Lewers Street and at the intersection of Lewers Street and Ala Wai Blvd will require temporary traffic lane closures during construction. It is anticipated that the contractor will be able to use the Municipal parking lot at the Beachwalk WWPS as a temporary Operations and Storage area for materials and equipment.

The estimated construction costs for Alternative 2C or 2F is \$12.9 mil. and \$21.1 mil., respectively (2006 dollars).

2.7.4 CONSTRUCTION METHODOLOGY FOR FORCE MAIN

Evaluations were conducted by SSFM International and R.M. Towill Corporation to determine an appropriate methodology for the installation of the force main. Four methods were evaluated and they included: a) open trench construction, b) conventional tunneling, c) horizontal directional drilling, and d) micro-tunneling. The findings are presented below.

A. Open Trench Construction

The key advantage of open trench construction compared to trenchless construction is reduced construction costs. It can be used in areas where environmental and socioeconomic impacts during construction are expected to be minor. Proper ground support and watertight groundwater control will be required for open trenching in the saturated, highly compressible, very loose to very soft lagoon deposits.

Open trench construction was considered for construction of this project within Ala Wai Park and Ala Wai Golf Course, with trenchless methods employed elsewhere. However, the requirement for transitions between open trench piping (with a cover depth of approximately 3 feet) and deeper, trenchless piping would offset open trench savings. The requirement for air relief valves (ARV) and blow-off valves for these vertical transitions also negates the benefits of

open trench construction. Furthermore, open trenching will have a major impact on park and golf course users. There are numerous other factors that increase the cost of open trench construction, including dewatering, disposal of excavated material, water filtering. Additional problems with noise or dust may arise with this construction method. Therefore, open trench construction is not recommended for any part of this project and is eliminated from further consideration.

B. Conventional Tunneling (Trenchless)

Conventional tunneling methods involve the use of a tunnel shield or tunnel boring machine (TBM), the installation of an initial support system to support the surrounding ground, and placement or installation of a final lining. TBMs utilize a full-face rotating cutterhead to excavate the tunnels. There are open TBMs and shielded TBMs. Open TBMs are used mainly for excavating hard rock formations with no significant groundwater inflows. The cutterhead of the open or main boring machine is thrust forward with hydraulic rams supported by grippers, which are mounted on each side of the main beam of the machine and bear against the tunnel walls. In soft ground, the material is not strong enough to withstand the bearing pressure of the grippers therefore a shielded TBM with thrust jacks would normally be used.

For this project, because a saturated ground condition is anticipated, a closed-face shield and earth pressure balanced TBM may be considered.

In general a shielded TBM has a full circular shield that provides temporary ground support while the initial support system (for generally stable ground conditions, steel ribs, steel liner plates, or pre-cast concrete segments) is erected within the tail of the shield. Shielded TBM's advance by thrusting against the tunnel's initial support system with hydraulic jacks. Such an approach requires an initial support system that can withstand both ground loads and the TBM thrust forces. Closed face and more sophisticated pressurized face shields with segmental steel or reinforced concrete liners will be required for tunnel excavation and support below the groundwater level. The cutterhead of either type of TBM can be equipped with disc cutters for excavating rock or drag teeth for excavating soil and soft rocks. If a TBM were used for this project, it would most likely be equipped with a close face shield and earth pressure balanced capabilities that would allow the TBM to mine through the range of anticipated ground conditions and at the same time controls the soil at the face by use of an earth pressure balance technique and counterbalances the groundwater by a slurry pressure technique. The TBM is operated by an operator in the rear portion of the TBM. Soil cuttings are generally removed from the face of the machine by use of a slurry system then rail cart or conveyor belt system. The TBM is steerable and guided by sophisticated theodolite guidance systems.

The conventional tunneling alternative will require a construction access portal and an exit shaft at both ends of the alignment. Surface workspace at the construction site will be required to accommodate cranes, pipe and materials storage, spoil loading and hauling, and construction support facilities such as office trailers, change houses, and sanitary facilities. Access for delivery of materials, waste (spoils) removal and parking would need to be provided.

Adequate space is required at the main construction portal so that the contractor will be able to efficiently carry out the work. The amount of space required depends on the tunneling method selected, but a total area of approximately one to two acres is typically required to stage construction at the main construction portal. Alternatively, an area about 25 feet wide by 50 feet long at the portal is sufficient provided that additional space (about ½ to 1 acre) is available nearby for trailers, shops, material storage, lay down space, and parking.

For the proposed tunneling diameter, bends in the tunneling alignment or profile must be more than 800 feet radius, and must not exceed 4 percent grade (for rail carts). Other design considerations that would affect the feasibility of this method include geotechnical conditions, pipe materials, pipe stresses, constructability, and construction staging.

Constructability Evaluation

The results of the preliminary evaluation indicate that conventional tunneling may not be feasible for this project due to a combination of very limited construction staging area availability, adverse geological conditions, and the necessary bending radius for the proposed alignment.

C. Horizontal Directional Drilling Construction (Trenchless)

Horizontal directional drilling (HDD) methods have been used to construct pipelines and avoid open cut trench crossings beneath rivers and other waterways and roadways through favorable geological deposits. HDD methods of constructing of pipelines involve using sophisticated drilling techniques to drill a pilot hole (Phase 1), which is subsequently enlarged by reaming (Phase 2) with various reaming tools to obtain a hole of the desired size. Drilling mud is used to flush the cuttings from the hole and to stabilize the hole by maintaining a slurry-filled pathway for subsequent reaming passes and pipe pullback. When the hole has reached the required size, the pipeline (or a casing) is pulled back into the hole in a single operation (Phase 3). Typically, the drill profile has at least two vertical curves (due to entry and exit point requirements). The drill profile can also accommodate horizontal curves but straight horizontal alignments are generally preferred.

The accuracy of HDD methods with respect to line and grade control of the installed pipeline is not as high as micro-tunneling methods, but in general would be sufficient for a force main. Typical line and grade accuracy of a pipeline installed by HDD methods under favorable conditions is about 1- 2 feet over a 1000-foot length of pipe. Horizontal and vertical deviation from the design alignment may vary depending on the subsurface conditions, the tracking system used, and the skills of the operator.

In general, the location of the pilot hole is monitored during drilling by taking periodic readings of the inclination and azimuth of the leading end of the drill string. Readings are taken with an instrument, commonly referred to as a probe, inserted in a drill collar as close as possible to the drill bit. Transmission of downhole probe survey readings to the surface is generally accomplished through a wire running inside the drill string. These readings, in conjunction with measurements of the distance drilled since the last survey, are used to calculate the horizontal

and vertical coordinates, and the elevation of the drill bit along the pilot hole (i.e., x, y and z coordinates).

Important design considerations for HDD methods that would affect the feasibility of this method include geotechnical conditions, the horizontal and vertical alignment, pipe materials, pipe stresses, constructability, and construction staging. The results of the preliminary evaluation indicate that HDD methods are probably not practical for this project due to a combination of very limited construction staging areas, adverse geological conditions, minimum bending radius of the required pipe size and materials.

Constructability Evaluation

Due to the unprecedented pipe size and length and adverse geotechnical conditions, the risks associated with the use of HDD methods to install the proposed force main are considered to be unacceptably high. Furthermore, inadequate right-of-way easement and construction staging area render HDD methods impractical for the alignments under consideration.

D. Micro-tunneling Construction (Trenchless)

Micro-tunneling methods have been used to construct pipelines where the disturbance associated with open cut methods is not acceptable. Important design considerations that would affect the feasibility of micro-tunneling methods include geotechnical conditions, the plan and profile of the pipeline, pipe materials, jacking and receiving pits, construction staging areas, spoil disposal, constructability, and construction cost and schedule.

Micro-tunneling is an underground method of constructing pipelines using a remotely controlled, laser guided, steerable boring machine. The pipeline is installed using pipe-jacking methods from a jacking pit to a receiving pit. The alignment and profile of the pipeline must be straight, in a series of drives with no curves, in order to avoid eccentric stresses which could damage the jacking pipe. The line and grade accuracy of this method is usually good, typically within several inches when properly executed. Maximum drive lengths using micro-tunneling methods are typically about 700 feet to 1,500 feet for pipes 42 inches in diameter and larger. When drive lengths exceed about 350 feet to 600 feet, intermediate jacking stations must be used to distribute the jacking load along the pipe string. If micro-tunneling methods are used to install the entire force main, a minimum of six to nine 1,000-foot long segments will be required, depending on the selected force main alignment. Several intermediate jacking stations would be required to install 1,000-foot long drives.

Intermediate jacking stations consist of a series of hydraulic jacks spaced evenly around the pipe circumference within the pipe string that can be activated to push a section of the pipe string forward, supplementing the capacity of the main jacking system. The pipe must be large enough to permit access for removal of the jacking stations once the drive is completed. The minimum pipe size for which the use of intermediate jacking station is usually considered practical is 36-inch ID pipe.

Constructability Evaluation

Micro-tunneling methods are applicable to a wide range of soil/rock conditions and should perform well in the stiff alluvial sediments and loose to dense coralline deposits. The main geotechnical concern would be encountering obstructions like cobbles and/or boulders that are too large for the machine to handle. The potential for encountering obstructions during micro-tunneling needs to be evaluated carefully. Potential obstructions that could stop the micro-tunneling machine include large cobbles and boulders in a loose soil matrix, strongly cemented coral reef rock, and hard basaltic lava flows. A special rock cutterhead on the machine can be provided to excavate through rock such as cemented reef rock, basalt, or boulders, which are too large to crush.

Machines with rock crusher can usually handle a cobble or boulder up to about 30 percent of the machine diameter. Furthermore, the lengths of the proposed drives (about 1,000 feet) also exceed the capabilities of an auger micro-tunneling machine and therefore a slurry micro-tunneling machine will be required.

Mixed face conditions along the alignment, such as soft soils over cemented coral reef deposits, can create steering difficulties for the machine. Selection of the most favorable force main alignment and profile with respect to alignment specific geotechnical conditions along with specific contingency planning for construction during the final design phase will be critical to minimize the potential for problems during construction.

To reduce potential difficulties and risks relating to the construction of force main using micro-tunneling, the following design and construction considerations must be addressed:

- Select a vertical profile that minimizes the depth of the shaft excavations for the jacking or receiving pits;
- Provide enough cover to avoid slurry discharge into the Manoa-Palolo Stream, Ala Wai Canal or onto Waikiki streets;
- Include provisions for ground improvement, such as by jet grouting, to improve the strength of the lagoonal soils prior to micro-tunneling in such very soft or very loose soils;
- Include provisions for ground improvement, such as by jet grouting, other grouting methods or tremied concrete, at the shaft excavations to control groundwater inflows into the shafts and to prevent the potential for shaft instability;
- Installation of a casing will be required if an HDPE force main pipe is required. In addition, larger casing pipe will allow better access for the installation of intermediate jacking stations, access to the cutterhead to remove obstructions, maintenance of ancillary equipment such as booster pumps, and surveying of the laser guidance system. In addition, use of a casing would allow more flexibility in selection of the carrier pipe for the force main. However, if construction budget constraints become an overriding concern, direct jacking of the carrier pipe will reduce installation costs, but will require the use of a reinforced concrete pressure force main pipe.

-
- The micro-tunneling machine and equipment will need to be properly designed to handle the hydrostatic pressures, the long slurry supply and return lines and special electrical or hydraulics will be required if the contractor elects longer drive lengths, and have the ability to excavate or crush coralline cobbles and hard cemented coral reef rock, and at the same time excavate sands and silts efficiently.
 - To reduce construction costs, risks, and difficulties, avoid micro-tunneling profiles that will require underground excavation in buried basaltic lava flows.

E. Spoil Disposal

For disposal of spoils, a temporary spoil stockpiling and dewatering area is needed during construction to allow spoils separated from the slurry (or mud) to be stockpiled, inspected, sampled and tested prior to disposal. A minimum area of 200 feet by 200 feet will probably be needed to process and temporary stockpile slurry and spoils.

The dewatering basin will have to include a lined spoil containment area with a plastic liner to prevent infiltration of the drilling fluids into the ground. Typically, the plastic liner is covered by a layer of sand to protect the liner.

If such dewatering area is not available, environmental sampling and testing of the soils within proposed shaft areas and along the micro-tunnel zone can be performed in advance during the design phase to evaluate the option of direct disposal to Nanakuli Landfill.

F. Comparison of Trenchless Construction Methods — HDD vs. Micro-tunneling

Two trenchless construction methods have been evaluated for the proposed Beachwalk WWPS force main replacement: horizontal directional drilling (HDD) and micro-tunneling. Both micro-tunneling and HDD methods have advantages in certain situations and limitations that need to be recognized. For example, HDD methods are generally considered very difficult and in some cases not feasible in clean gravel, soils with cobbles and boulders, and in hard rock, stronger than about 17,000 psi (American Gas Association, 1995) for the proposed pipe size and length. Micro-tunneling machines, on the other hand, have been developed to handle a wide range of ground conditions including gravelly soils, cobbles and boulders, and hard rock. It is important to have an accurate determination and understanding of the ground conditions, so the proper machine and cutterhead can be selected.

Pipe installation for the proposed force main is expected to encounter various amounts of coralline gravels, occasional cobbles, and hard reef rock. An unprecedented pipe size and length, i.e. 60-inch diameter steel casing along a 6,000-foot long drill path with at least one compound curve, will likely be required if HDD method is used. Based on the available project and geotechnical information, the risks and uncertainties associated with such installation are unacceptable. Therefore, micro-tunneling is considered to be the most feasible trenchless construction method for the proposed force main.

2.8 PREFERRED ALTERNATIVE

2.8.1 BEACHWALK WWPS

From the WWPS alternatives considered (see Section 2.7) the following alternatives were evaluated:

- **Alternative 1A, Beachwalk Site** - Construct a new WWPS on the existing Beachwalk WWPS site
- **Alternative 2C, Ala Wai Golf Course Site "C"** - Construct a new WWPS between the fairways of the 13th, 14th and 15th holes of the Ala Wai Golf Course
- **Alternative 2F, Maintenance Facility Site** - Construct a new WWPS next to the existing maintenance facility in the northwest corner of the Ala Wai Golf Course

An evaluation matrix for the shortlist alternatives was developed based on various assessment criteria. Each of the alternatives was evaluated on desirable factors which include impacts to the public, maintenance, reliability and costs. Each of the alternatives was given scores from 0 to 10. The evaluation matrix is presented in **Table 2-3**.

Based on the evaluation of the three alternatives, Alternative 1.A was recommended as the preferred alternative (see **Figure 2-6 and 2-7**). Once the pump station site was selected, the preferred alternative for the force main and trunk sewer projects could be made. In addition, consideration for odor control at the WWPS was also considered and the recommendation for an odor control system is described below.

Table 2-3. Beachwalk WWPS Evaluation Matrix of Preferred Alternatives

	Alt. 1A Beachwalk Site	Alt. 2C Ala Wai GC Site "C"	Alt. 2F Maintenance Facility Site
Adverse Impacts to the Public			
Golf Course Users	10	0	5
Residents	0	10	0
20-yr Life Cycle Cost	0	10	0
Long-Term Land Use	0	0	10
Accessibility			
Maintenance	10	0	0
Emergency	0	10	10
Force Main Redundancy	10	0	0
Permits and Approvals	10	0	0
TOTAL SCORE	40	30	25

Proposed elevations for the Beachwalk WWPS are shown in Figures 2-8, East Elevation, 2-9, North Elevation, and 2-10, Storage Building.

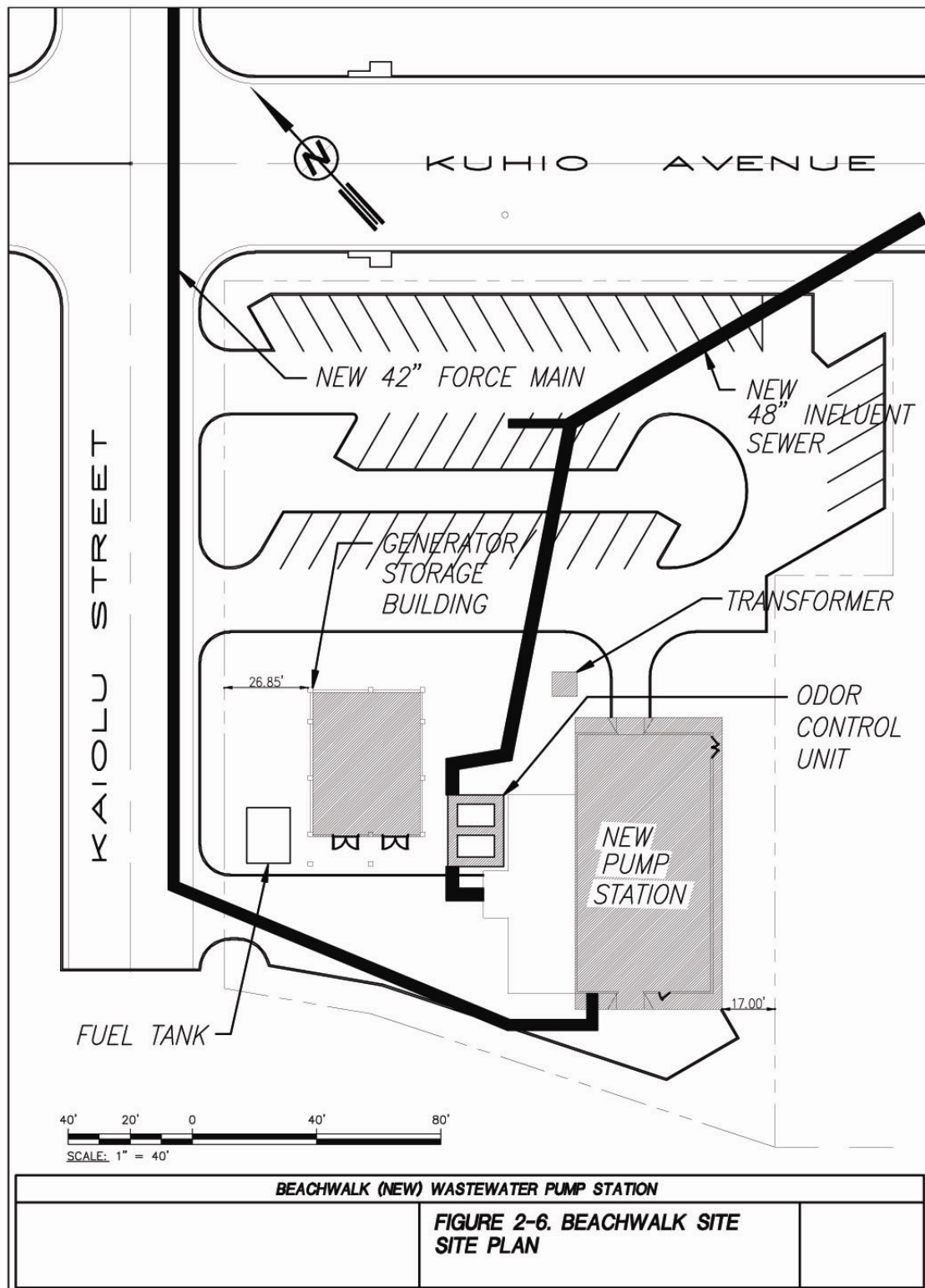


Figure 2-6. Proposed Beachwalk WWPS

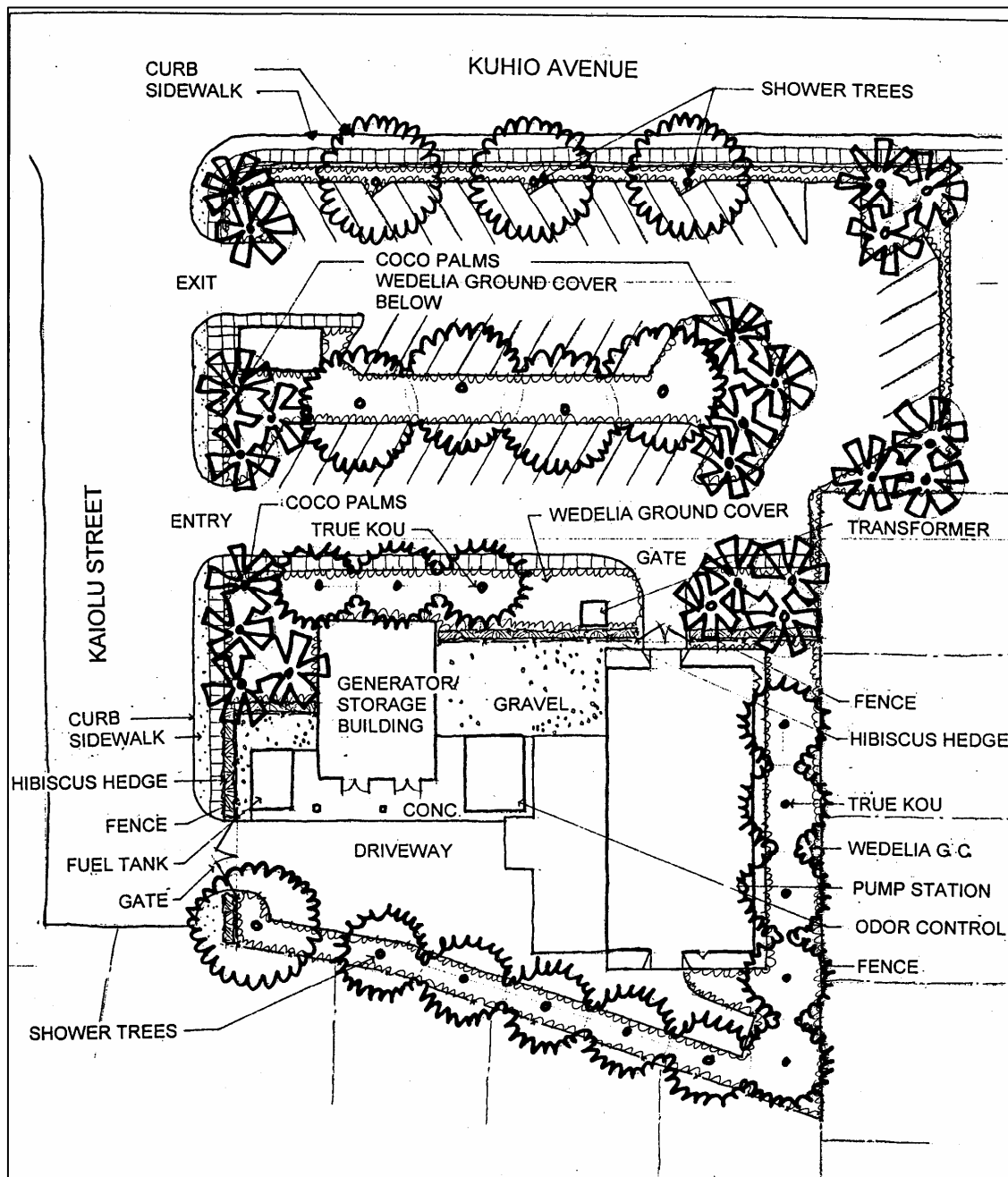


Figure 2-7. Proposed Beachwalk WWPS Landscaping Plan

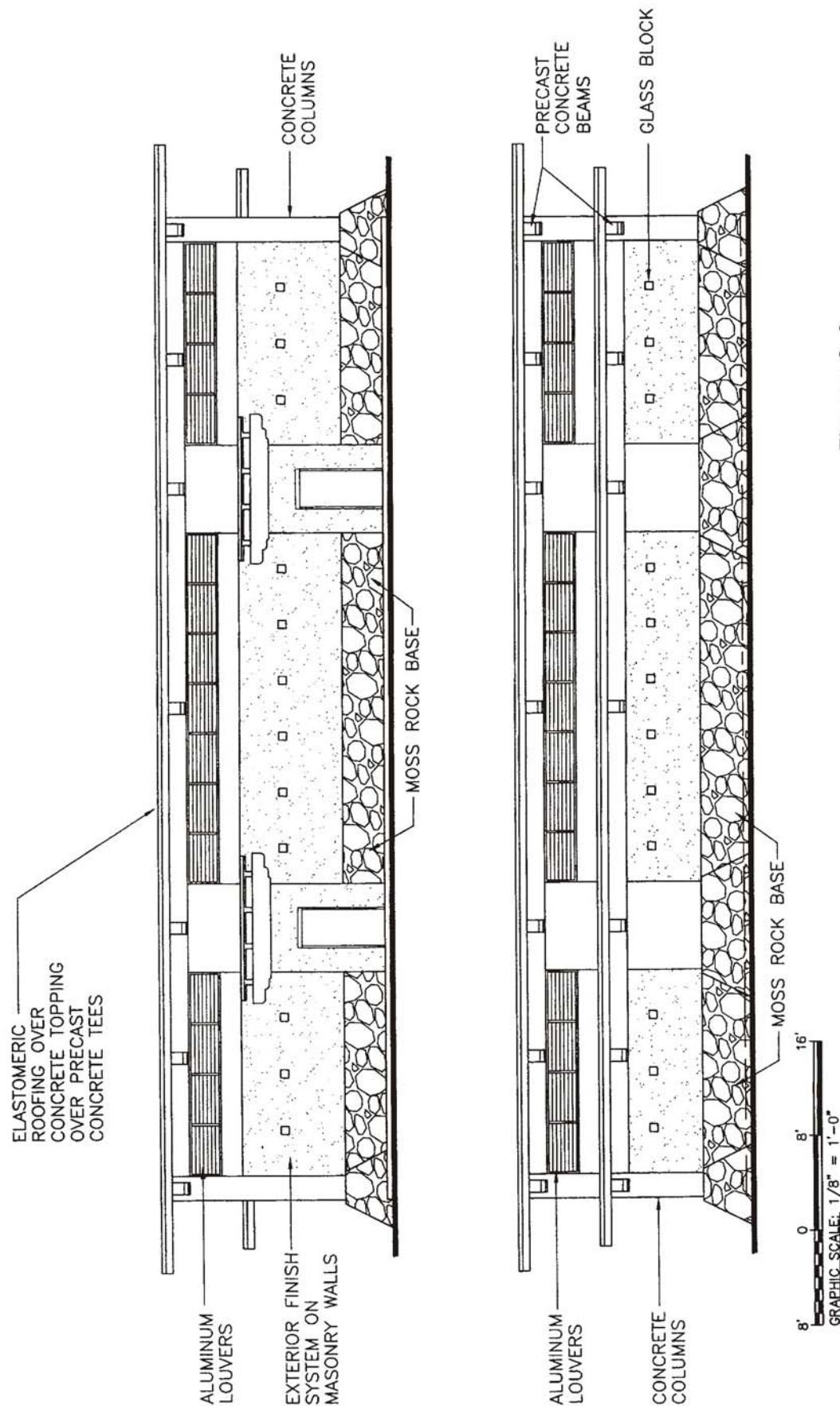


Figure 2-8
East Elevation Beachwalk WWPS

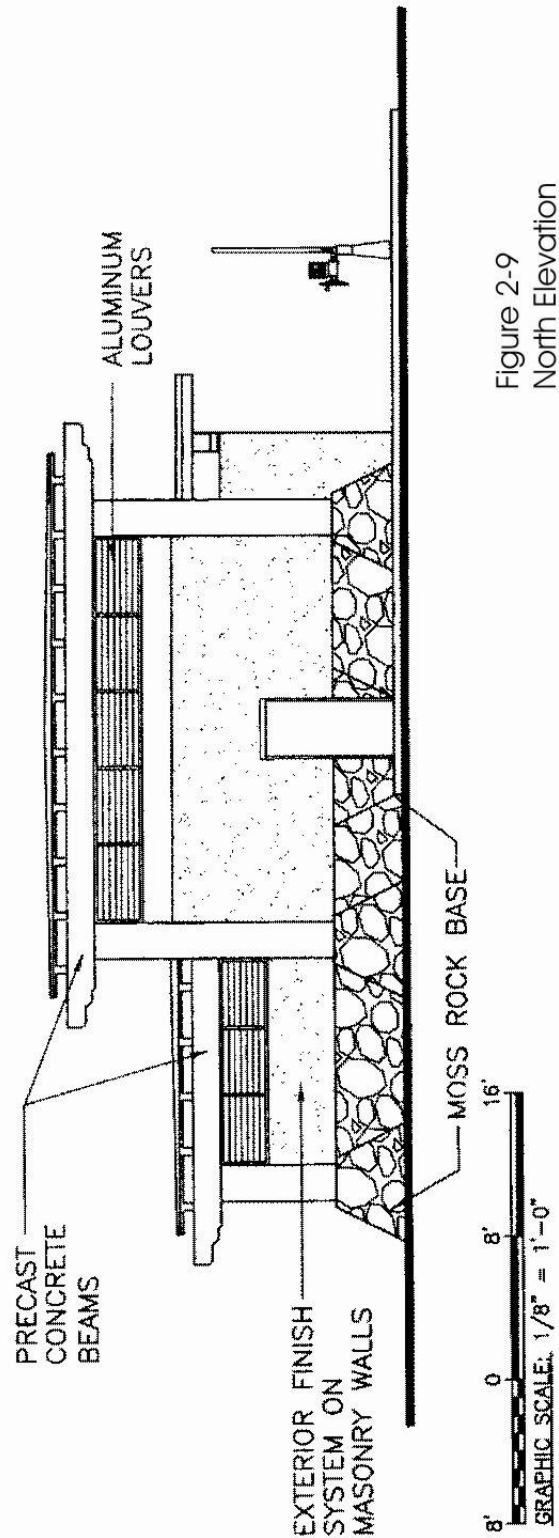
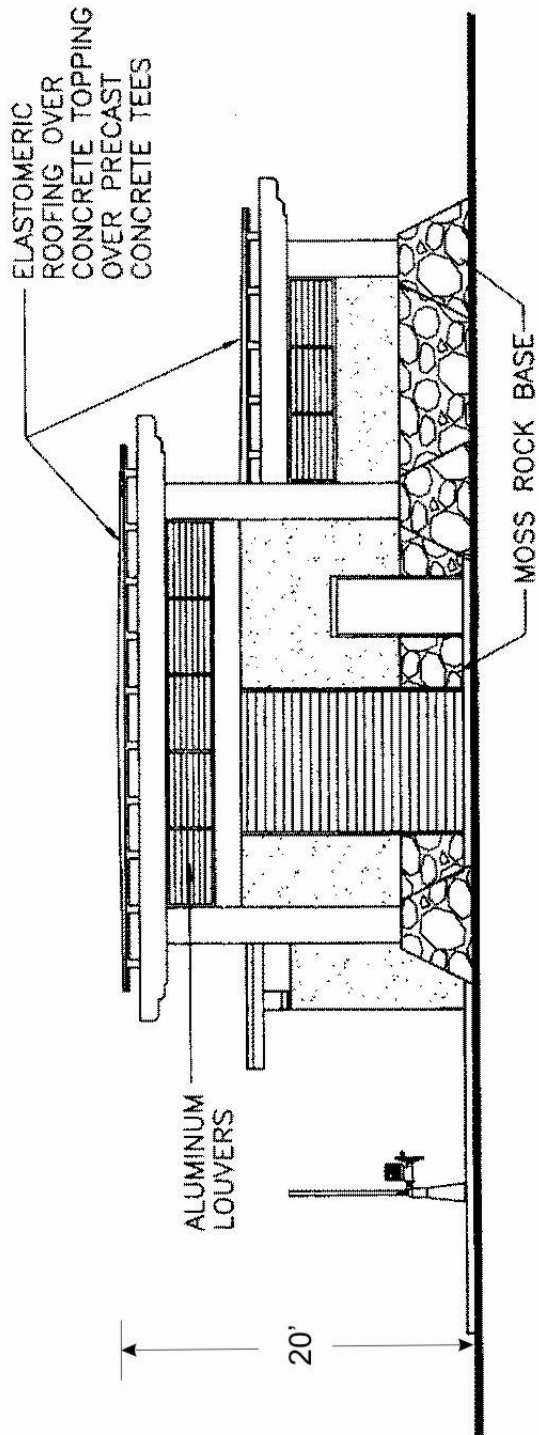


Figure 2-9
North Elevation
Beachwalk WWPS

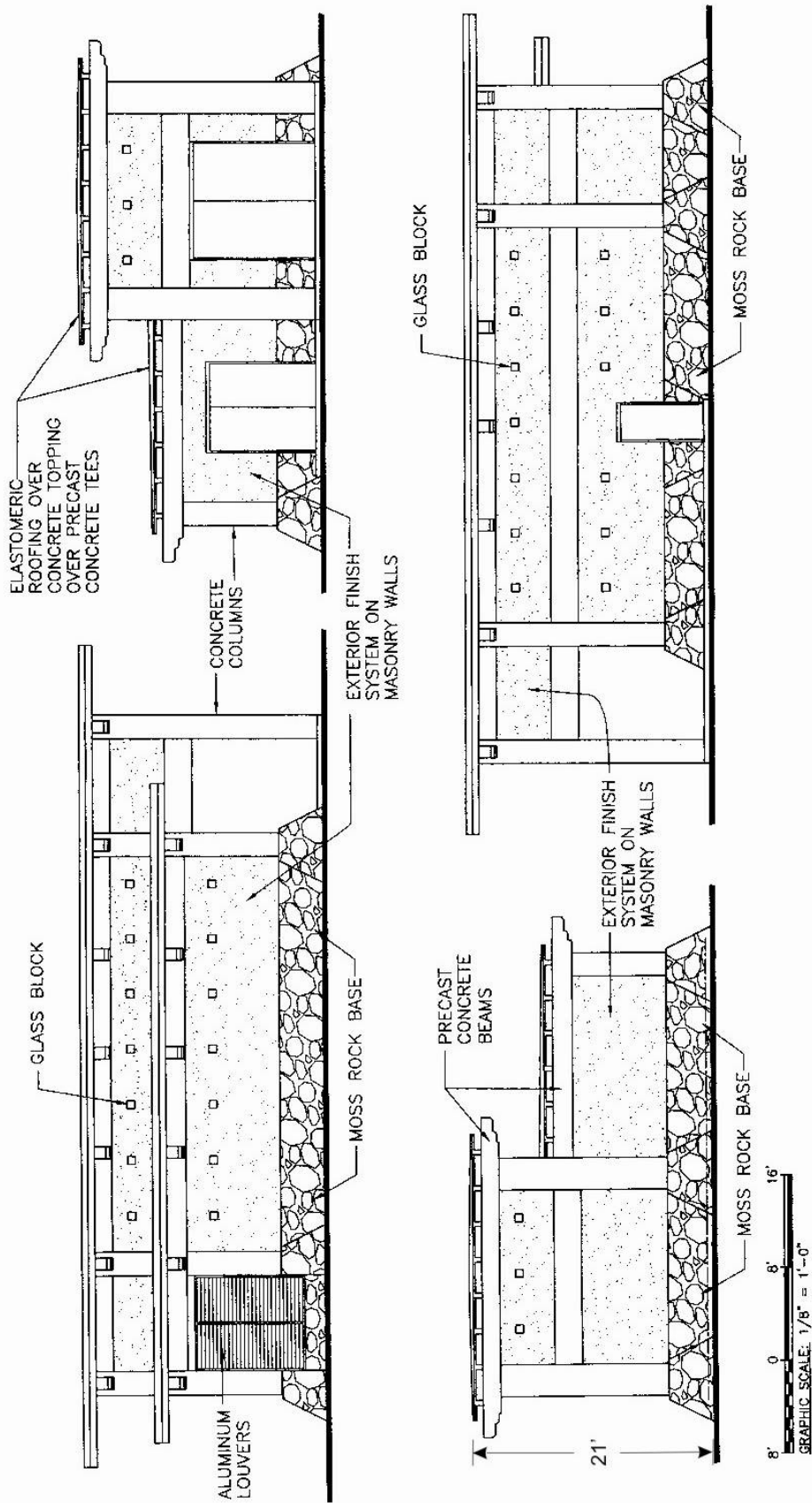


Figure 2-10
Storage Building
Beachwalk WWPS

ODOR CONTROL SYSTEM

Activated carbon is the recommended odor control system for the Beachwalk WWPS. Activated carbon is a relatively simple system which reliably removes a broad range of odorous compounds.

The proposed odor control system would be comprised of two identical, separate systems consisting of two adsorber vessels, an exhaust fan in an acoustically treated enclosure, and associated piping and ductwork. Each system would discharge treated air through a dispersion stack attached to the adjacent pump building. One adsorber vessel would be capable of treating the induced air flow if one unit is off-line for maintenance.

A design data summary for the odor control system is presented in the following table:

Table 2-4. Design Data for Odor Control System

Design Air Flow, cfm	2100
Influent H ₂ S Concentration, ppm	<10 (to be determined)
Removal Rate	> 99% H ₂ S
Number of Adsorber Vessels	2
Diameter of Adsorber Vessel, feet	7.5
Carbon Capacity, pounds	3,825
Regeneration	Water Wash
Horsepower of Fan	15
Materials of Construction	Polyethylene, FRP, PVC

2.8.2 BEACHWALK FORCE MAIN

The portion of the recommended force main alignment common to all three alternative WWPS sites is along the mauka side of Ala Wai Canal. The new 42-inch force main would run alongside the Ala Wai Promenade from Ala Wai Park past the Convention Center, and finally Ewa along Ala Moana Boulevard to Ala Moana Park (Option 1.C, 2.C, and 3.C, see **Figure 2-11**). Trenchless micro-tunneling is the recommended construction method for the entire length of each alignment.

Of the alternative alignments evaluated, the recommended alignments will cause the least impact on highly traveled and highly occupied areas. The recommended alignments will avoid extensive construction on major streets, will minimize utility impacts, and will provide the greatest separation from nearby buildings. Only one crossing of the Ala Wai Canal will be required. Ala Wai Park, Golf Course, and bike/walk path users will be temporarily inconvenienced during construction. Micro-tunneling will limit impacts to the ground surface and will eliminate the need for air relief and blowoff valves. Based on historical construction costs, the table below provides the estimated construction cost for the recommended alignments.

Table 2-5. Recommended Force Main Alignment

Alternative WWPS Site	Recommended Alignment	Figure	Length (Feet)	Estimated Construction Cost*
Golf Course Maint. Facility	OPTION 1.C	2-4	8,850	\$32.1 mil.
Golf Course Site	OPTION 2.C	2-4	9,050	\$32.8 mil.
Extg. WWPS	OPTION 3.C	2-5	7,250	\$25.8 mil.

* 2006 Dollars

2.8.3 ALA WAI TRUNK SEWER

The recommended WWPS Alternative 1A construction activities for the Trunk Sewer will occur within City and County roadways and within the City's Municipal parking lot at the Beachwalk WWPS. Land acquisition and construction easements will not be required. Factors such as heavy traffic volume on Kuhio Avenue and Ala Wai Blvd, the many utility crossings, the depth of construction being well below the water table, all lead to making conventional open trench construction costly and difficult. The use of a trenchless method such as pipe jacking or micro-tunneling will greatly reduce these impacts; however, open pits would still be required for the entry pit at SMH locations, and dewatering is required. The use of the entire municipal parking lot as an operations and staging area will help reduce the construction impacts to the neighborhood. However, this will temporarily reduce available public parking.



Figure 2-11. Proposed Beachwalk Force Main Alignment

Construction will be done during the normal week day working hours of 8:30 am to 3:30 pm over an estimated 4 to 6 month period. Construction of the project will be phased, such that the relief sewer will be constructed while the existing 48-inch Trunk Sewer Line remains in operation. The new makai WWPS would need to be completed, tested and accepted before the existing 48-inch Trunk Sewer Line can be abandoned and the existing sewer system reconnected to the new Trunk Sewer Line. There should be no adverse impacts to the current operations at the Beachwalk WWPS.

PREFERRED TRUNK SEWER ALIGNMENT

The new Beachwalk WWPS will be constructed on the west-side of the existing Beachwalk WWPS and design flows from both the mauka and makai tributary area will enter the new WWPS. Calculations indicate that the existing 48-inch Ala Wai Trunk Sewer does not have the adequate capacity to accommodate the design flows. There is a sag in the sewer line between SMH 0633 to SMH 0637. In order to rehabilitate the existing 48-inch trunk sewer, this portion will need to be reconstructed. Reconstruction will require temporarily diverting the flow in order to reconstruct the sewer line. Conventional open trench construction will be required in order to remove and to replace the sewer line. Even with reconstruction, a second smaller parallel sewer relief line would be required to accommodate the design flows. Since this is the case, it is more feasible to construct an entirely new sewer relief line and then abandon the existing 48-inch Trunk Sewer.

In order to maintain the operation of the existing Beachwalk WWPS and the existing 48- inch influent sewer line until construction is completed, the new relief sewer line will need to be designed to accommodate 100% of the design flows from both the mauka and makai tributary areas. The relief sewer line will be constructed on the Diamond Head side of the existing 48- inch Ala Wai Trunk Sewer line with alignment similar to Alternative 1. The existing relief sewer line will tie into the Junction SMH 0637 at the intersection of Lewers Street and Ala Wai Blvd. The existing Junction SMH will be re-channelized. The existing 6-inch, 24-inch and 30-inch influent sewer lines at the existing Beachwalk WWPS will be reconnected to the new 30-inch sewer line. Calculations indicate that a new 48-inch RCP sewer will be required. It is assumed that the Ala Wai Siphon will still be adequate.

It is anticipated that a combination of open trenching and a trenchless method will be used for construction. A trenchless method will reduce impacts to traffic, extensive street reconstruction and avoid costly utility relocations and extensive dewatering. Construction of the sewer manholes however, will require open pits, sheeting, shoring and major dewatering. The manhole locations at the intersection of Kuhio Avenue and Lewers Street and at the intersection of Lewers Street and Ala Wai Blvd will require temporary traffic lane closure during construction. It is anticipated that the contractor will be able to use the Municipal parking lot at the Beachwalk WWPS as a temporary Operations and Storage area for materials and equipment.

The estimated construction cost for Alternative 1A is \$3.2 mil. (2006 dollars).

2.8.4 PROJECT SCHEDULE

The project is expected to proceed in accordance with the following schedule:

- WWPS and Trunk Sewer
 - Design Nov-06 to Oct-08
 - Bidding Phase Nov-08 to Apr-09
 - Construction May-09 to Apr-11
- Force Main
 - Design Jan-06 to Sep-07
 - Bidding Phase Oct-07 to Dec-07
 - Construction Jan-08 to Jun-10

2.8.5 ESTIMATED COSTS

The estimated construction cost for the proposed project is shown in **Table 2-6**.

Table 2-6. Project Construction Cost (2006 Dollars)

Project	Cost
Beachwalk Pump Station	\$28.4 mil.
Beachwalk Force Main	\$25.8 mil.
Ala Wai Trunk Sewer	\$3.2 mil.
TOTAL	\$57.4 mil.

SECTION 3 DESCRIPTION OF AFFECTED ENVIRONMENT

3.1 PHYSICAL ENVIRONMENT

3.1.1 CLIMATE

The climate in the project area is characterized by abundant sunshine, relatively constant temperatures, persistent trade winds, and moderate humidity. Temperatures range from 73 degrees Fahrenheit (F) in the winter to 81 degrees F in the summer. Annual rainfall averages approximately 23 inches with the greatest amount occurring between the months of November and April. Trade winds from the northeast prevail throughout most of the year. Relative humidity ranges from 56 to 72 percent.

Potential Impacts and Proposed Mitigation

The proposed project is not expected to impact the climate of the area. No mitigation is required or proposed.

3.1.2 TOPOGRAPHY

The project site is virtually flat with ground elevations ranging from 5 to 10 feet above mean sea level (MSL). The site project area been previously modified for construction of the existing facilities. Minimal earthwork will be required to accommodate the proposed Beachwalk WWPS facilities. The Beachwalk Force Main and Ala Wai Trunk Sewer will be placed underground.

Potential Impacts and Proposed Mitigation

The proposed project is not expected to have a significant impact on the topography of the area. No mitigation is required or proposed.

3.1.3 SOILS AND GEOLOGY

The project site is classified as "Fill land, mixed (FL)" by the U.S. Department of Agriculture, Soil Conservation Service (USDA, 1972). This land type consists of areas filled with material dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources. The site is underlain by a layer of soft lagoonal deposits made of sand, silt, and clay. These deposits cover a coral layer occurring between 5 and 20 feet MSL.

In summary, the regional geology within the vicinity of Honolulu and Waikiki consists of a volcanic basalt island core that is overlain and flanked by ancient beaches, coral reefs, estuaries, lagoons, and new lava flows. The mixing and the inter-fingering of coral reef, beach sand, and lagoon deposits with recent Honolulu Volcanic Series tuff, lava flows and occasional alluvial deposits carried down from the mountains make the local geologic conditions highly complex.

The project area is located approximately 3,000 feet landward of the existing Waikiki beach shoreline, in an area where fills were placed on top of lagoon and coral reef deposits around the

shoreline of O'ahu. Available geological and geotechnical data indicate that the subsurface conditions in the study area generally consist of lagoon deposits underlain by coralline deposits, coral reef rocks, alluvium, massive to clinkery basaltic lava flows, volcanic cinder sand, and peat layers. The alluvium appears to be deposited in shallow basins and deep erosion channels formed by the several ancient streams.

The complex combination of marine and alluvial sediments with basaltic lava flows and volcanic cinder deposits and formation of buried erosional channels reflect the influence of Honolulu Volcano Series and fluctuations of sea levels on the geological conditions in the project area. It appears that the back-reef environment along with the influx of fresh water from the major upslope Manoa and Kaimuki surface drainage basins were not favorable to significant coral reef development within portions of the project area. Exposure of the back-reef deposits to air during the fluctuating sea levels may have resulted in re-cementation of some of the sandy and gravely coralline deposits. Due to such an active geologic history of the project area, there are significant variations in stratigraphy, including complex and irregular layering of the alluvial, coralline, and volcanic deposits, and great variability in grain sizes and degree of cementation. Large variations in the soil types, grain sizes, and material properties should be expected within short distances in both horizontal and vertical directions (URS, 1999).

A detailed site-specific geotechnical investigation that includes a generalized geologic profile should be performed during final design, to explore and characterize the subsurface conditions along the selected force main and trunk sewer alignments. The selected alignment should be updated and modified based on the results of the site-specific geotechnical investigation.

The Island of O'ahu is in Uniform Building Code (UBC) earthquake zone 2A. The final design of the new force main should be analyzed for earthquake response, including liquefaction potential, particularly in the compressible lagoon and in the granular coralline soils. Peak ground accelerations on O'ahu are estimated to be approximately 0.17g.

Potential Impacts and Proposed Mitigation

The proposed projects are not expected to have a significant impact on soils and geology. The proposed Beachwalk WWPS project will involve very little grading as the site is relatively flat. Erosion control programming will minimize the erosion potential of areas disturbed during construction. The force main and trunk sewer projects will be placed underground and therefore will minimally impact surface conditions. The actual location of the force main and trunk sewer will be impacted by the type of soil during construction.

3.1.4 HYDROLOGY

South O'ahu's coastal plain is underlain by sedimentary deposits that extend 800 to 900 feet below sea level. These deposits form a caprock which retards the seaward movement of fresh groundwater. Groundwater occurs at mean sea level with some tidal fluctuation. The underlying groundwater is not considered a drinking water source. The site is on the ocean side (makai) of the Underground Injection Control line. The Mānoa-Palolo Streams are adjacent

to the project area and drain into the Ala Wai Canal. The Beachwalk Force Main and Ala Wai Trunk Sewer will be installed under the Ala Wai Canal.

Potential Impacts and Proposed Mitigation

The proposed project is not expected to have a significant impact on groundwater. Implementation of appropriate Best Management Practices (BMPs) will minimize the impacts of construction dewatering and disposal of hydro-testing water. Drainage patterns will not change substantially as the majority of the proposed improvements will be modifications to existing facilities.

3.1.5 FLOODS AND TSUNAMI

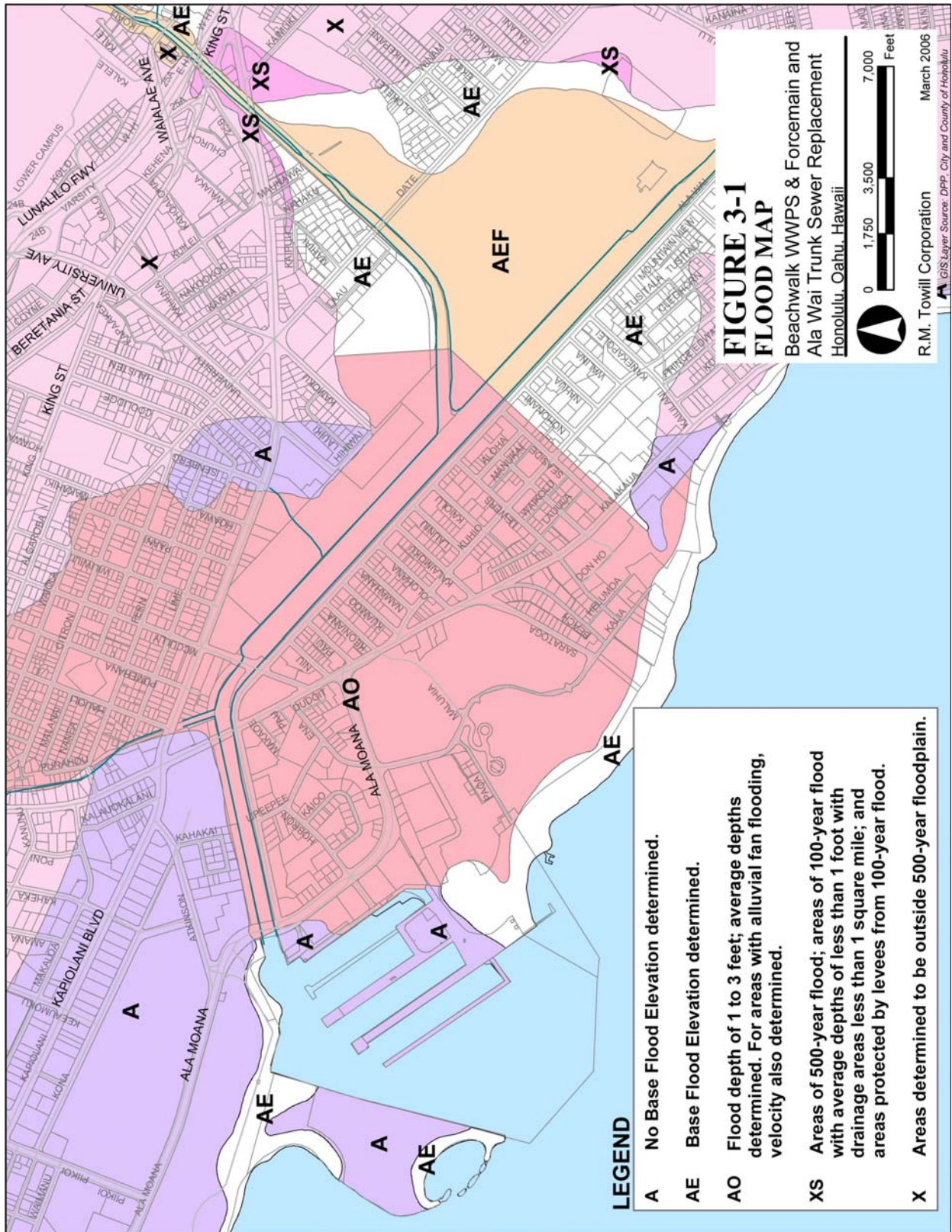
The Flood Insurance Rate Maps indicate that the project site is within several flood zones including A, A02, and AE7 (see **Figure 3-1**). Flood Zone A represents a flood hazard area inundated by a 100-yr flood with no base flood elevation determined and extends Ewa from the Ala Moana Boulevard Bridge. Flood Zone A02 represents a flood hazard area inundated by a 100-year flood with flood elevation of 2 feet and extends on the mauka and makai sides of the Ala Wai Canal. Flood Zone AE7 represents a flood hazard area inundated by a 100-year flood with flood elevation of 7 feet and encompasses the Ala Wai Golf Course. Special construction mitigation measures during construction of the force main will be required to safeguard the proposed improvements and nearshore waters. Areas designated as Zone X are determined to be outside the 500-year flood plain. The project site is not in a tsunami evacuation zone (O'ahu Civil Defense Evacuation Zone Maps, 1997-1998).

Potential Impacts and Proposed Mitigation

The project sites are located within several flood zones and therefore specific design measures will be taken to protect the improvements. The Beachwalk WWPS will be designed to accommodate localized flooding. The primary concern is the release of untreated wastewater into the flood waters. To minimize the risk of flood damage, the ground floors of the Beachwalk WWPS and critical electrical equipment will be located above the flood elevation of 8 feet MSL. The finished floor elevation of the WWPS will be 9 feet. The pump station site is not in a tsunami evacuation zone (Tsunami Evacuation O'ahu Map1: Waikiki, Verizon 2003).

The Beachwalk FM will not be impacted by flood waters because it is a closed system from pump station to pump station and therefore no mitigation is proposed or required.

The Ala Wai TS is susceptible to flood impacts because of the potential of floodwater infiltrating the system. To minimize infiltration, the trunk sewer manholes will be sealed.



3.1.6 FLORA AND FAUNA

The project is located in a highly altered urban environment. No rare or endangered flora and fauna are known to inhabit the project site. Existing flora at the site consists of introduced species.

Potential Impacts and Proposed Mitigation

No adverse impacts on flora and fauna are anticipated. No rare or endangered flora and fauna are known to inhabit the project site.

3.1.7 WATER QUALITY

Nearshore coastal waters from Ala Moana Beach to the east entrance channel of Honolulu Harbor are designated as “Class A” by the Department of Health, State of Hawai‘i (DOH) while Honolulu Harbor is designated a “Class A” embayment. Waters designated “Class A” are to be protected for recreational uses, aesthetic enjoyment, and propagation of marine life. The proposed project does not involve discharge of wastewater into nearshore waters. The waters of the Ala Wai Canal are classified as Class AA. The Ala Canal, however, is also considered “impaired” as defined by Section 303 of the Clean Water Act.

Section 303(d) of the 1972 Clean Water Act, states, “territories, and authorized tribes are required to develop lists of impaired waters. These impaired waters do not meet water quality standards that states, territories, and authorized tribes have set for them, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop Total Maximum Daily Loads (TMDL) for these waters (DOH, 2004).”

A TMDL specifies the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and allocates pollutant loadings among point and nonpoint pollutant sources. By law, Environmental Protection Agency (EPA) must “approve or disapprove lists and TMDLs established by states, territories, and authorized tribes. If a state, territory, or authorized tribe submission is inadequate, EPA must establish the list or the TMDL. EPA issued regulations in 1985 and 1992 that implement section 303(d) of the Clean Water Act - the TMDL provisions (DOH, 2004).”

Potential Impacts and Proposed Mitigation

No adverse impacts on water quality are anticipated. The project site is approximately 1,500 feet from nearshore waters. The proposed project will reduce the risk of wastewater spills by increasing the pumping capacity of the facility. Implementation of appropriate BMPs will minimize the impacts of construction dewatering and disposal of hydro-testing water.

Dewatering

Due to the relatively shallow groundwater table and permeable coral formations at this

site, large quantities of water will need to be removed or displaced from the excavation. Because of the proximity of surrounding structures at this site, special attention must be given to the potential impacts of the dewatering operations on the adjacent structures. Jet grouting is proposed as a way to improve the existing ground conditions and aid in the dewatering operations and construction of the proposed pump station building.

3.1.8 AIR QUALITY

Automobile emissions from traffic along Ala Moana Boulevard are the major source of air pollution in the area. Despite the urban character of Waikiki, the present ambient air quality in the project area is generally considered good due to the prevailing northeasterly tradewinds and the absence of "heavy" industries. However, during Kona (southerly and southwesterly) wind conditions, a buildup of particles could occur in the general project area.

Facilities exposed to wastewater are currently sealed to prevent the escape of odors. Foul air within these spaces is removed and treated before being released to the atmosphere. There have been two recorded odor complaints. The first occurred in 1988 with the second occurring in 1992. Both were attributed to manholes that had been opened for maintenance.

Potential Impacts and Proposed Mitigation

The proposed project is not expected to have a significant impact on air quality. Construction activities may result in short-term air quality impacts. To mitigate these impacts, the Contractor will be required to follow State and City dust control regulations.

Long-term impacts are a result of wastewater's potential for generating odors. The proposed project includes new odor control systems. The new odor control systems will provide a significant increase in treatment capacity relative to the existing system and will minimize long-term impacts on air quality. It should be noted that the risk of odors could be minimized but not eliminated. See discussion in Section 2.

3.1.9 NOISE

Background ambient noise was measured in October 1994 at various locations around the perimeter of the project site. The noise measurements indicated that background ambient noise ranged from 55 to 62 dBA. DOH allowable noise levels for apartment and business land uses are 60 dBA and 50 dBA for daytime and nighttime periods, respectively.

Potential Impacts and Proposed Mitigation

Short-term noise impacts are related primarily to construction activities. To mitigate short-term construction related impacts, compliance with the provisions of Hawai'i Administrative Rules (HAR), Chapter 11-46, "Community Noise Control," will be required. Should construction activities be required during evenings, night and weekend hours, a variance will be sought from the Department of Health. As part of this variance process, the businesses and residents adjacent to the project sites will be consulted.

Long-term noise impacts would generally be attributed to operation of the wastewater

pumps, the odor control systems, and the emergency generators. Potential adverse noise impacts will be minimized by housing noise generating machinery in acoustically treated enclosures. Acoustical treatments will include the following: silenced inlet and discharge air openings, interior wall and ceiling finish insulation, sound rated door assemblies, and two exhaust mufflers installed in series.

Extensive noise suppression measures will be incorporated into the design of the Generator/Storage Building. The acoustical design goal for the two sites in the Ala Wai Golf Course will be to reduce generator noise to 55 dBA or less at the nearest boundary line of the Ala Wai Golf Course, and to 50 dBA at the closest residence beyond the golf course boundaries, if possible. Currently, the DOH daytime and nighttime limits for Preservation and Apartment zones are 55 dBA and 50 dBA, respectively. The acoustical design goal for the Beachwalk site will be to reduce generator noise to 60 dBA or less at the closest station boundary line, and to approximately 50 dBA at the closest residence at or beyond the station's boundaries, if possible. Currently, the DOH daytime and nighttime limits for Commercial and Apartment zones are 60dBA and 50 dBA, respectively. Initial acoustical recommendations for the Generator Room include:

- A remote radiator for the generator
- Duct silencers on the inlet and discharge air openings
- Critical and residential grade mufflers connected in series
- 4-inch thick insulation on the interior walls and ceiling of the Generator Room. Perforated aluminum panels will protect the insulation panels from damage.
- 4-inch thick insulation on the interior walls and ceiling of the remote radiator discharge air passageway and the intake air passageway
- Sound rated doors with a minimum STC 50 rating

Construction activities in the vicinity of Ala Wai Elementary School will require special attention to minimize construction noise impacts on the school. Specific mitigation will include no construction in the vicinity of the school during school hours.

3.2 SOCIO-ECONOMIC ENVIRONMENT

3.2.1 LAND USE

The present general mix of land uses in the area consists of: apartments, park, school, golf course, roadway, public facilities, offices, and open space.

Potential Impacts and Proposed Mitigation

Construction activities will have short-term impacts on surrounding land uses. To mitigate short-term construction related impacts, the Contractor will be required to follow applicable State and City erosion, dust, and noise control regulations and implement appropriate BMPs.

The proposed project is not expected to have significant long-term adverse impacts on current or future land uses in the area. Mitigative measures will be taken to minimize potential odor, noise, and visual impacts. New odor control systems will significantly reduce the risk of odor nuisance. Extensive acoustical treatments will minimize noise levels at the property lines. Landscaping and the refurbishment of the exterior of WWPS will minimize adverse visual impacts on surrounding areas.

3.2.2 HISTORIC AND ARCHAEOLOGICAL RESOURCES

There are no known archaeological sites on or adjacent to the project site. The project site has been previously disturbed for construction of the existing Beachwalk WWPS and parking lot, existing Force Main and Trunk Sewer. The path (location) of the new force main and trunk sewer are also along previously disturbed land.

Additionally, the elevation of the proposed trunk sewer line and the force main when installed will be 20-25 feet and 40-50 feet, respectively below existing grade.

The only area of potential concern will be the excavation sites for the access pits to allow for the micro-tunneling work.

Potential Impacts and Proposed Mitigation

The installation depth of both sewer lines makes it unlikely that historic or archaeological resources will be encountered. During excavation of the pits, the contractor will be required to closely monitor for historic or archaeological resources that may be encountered. Although the proposed project is expected to have no significant adverse impacts on archaeological resources, should evidence of cultural remains be uncovered during the course of the project, work in the immediate area will cease and the Historic Preservation Division of the Department of Land and Natural Resources contacted for further evaluation.

3.2.3 SCENIC AND VISUAL RESOURCES

The surrounding structures and flat topography limit views from the Beachwalk WWPS. There are limited mountain views and no ocean view. The new structures for this site will include the Pumping Station Building and the Generator/Storage Building. Each of the buildings has a functional size requirement that dictates its massing. The existing facility has a very low profile and is well screened by the existing landscaping. The new replacement facility will also maintain a low profile and utilize landscaping for screening. The design selected for the new buildings utilizes low sloping roofs in order to keep the building heights to a minimum. Elevations for the new WWPS is shown in **Figures 2-8, 2-9, and 2-10**. Adjacent properties include multi-story apartment buildings on the east side, a 2 story commercial building on the west side and a 2-story apartment/hotel on the south side. The architectural character of the site and immediate surroundings are not significant. Because the force main and trunk sewer will be placed underground, there will not be any visual impacts.

Potential Impacts and Proposed Mitigation

There will be no significant visual impacts associated with the proposed WWPS improvements. The project will take place within the existing WWPS property. The architectural and landscaping features of the proposed facilities will be chosen to minimize visual impacts on the area by effective architectural and landscaping schemes.

3.2.4 RECREATIONAL FACILITIES

The Ala Wai Field and the Ala Wai Canal are the primary recreational facilities in the vicinity of the proposed projects. The Ala Wai Canal serves a multitude of recreational functions that include: canoeing, kayaking, fishing, viewing, and open space. On the banks of the Ala Wai Canal are multifunction paths that can accommodate walkers, joggers, skaters, skateboards, and bicycles.

The Ala Wai Field is a multi-function field that provides for baseball, softball and soccer. In addition, a portion of the field has been set aside for the storage and launching of canoes.

Potential Impacts and Proposed Mitigation

During installation of the force main and trunk sewer, portions of the walkway along Ala Wai Boulevard may be closed to pedestrian access for safety. When closure is required, pedestrian traffic will be re-directed to the opposite side of Ala Wai Boulevard.

During the force main installation portions of the force main alignment may be closed to pedestrian access. A temporary access path will be developed around the work areas. Construction activities within and adjacent to Ala Wai Field, Clubhouse, and Elementary School will need to be coordinated with the appropriate agencies to minimize disruptions.

3.2.5 ACCESS FOR PERSONS WITH DISABILITIES

The Americans with Disabilities Act (ADA) is a wide-ranging civil rights statute that prohibits discrimination against people with disabilities. In Hawai'i, HRS § 103-50 requires all State of Hawai'i or County government buildings, facilities, and sites to be designed and constructed to conform to ADA accessibility guidelines, the Federal Fair Housing Amendments Act, and other applicable design standards as adopted and amended by the Disability and Communication Access Board (DCAB). The law further requires all plans and specifications prepared for the construction of State of Hawai'i and County government buildings, facilities, and sites to be reviewed by the DCAB for conformance to those guidelines and standards.

Potential Impacts and Proposed Mitigation

General areas will be designed for accessibility in accordance with Americans with Disabilities Act Accessibility Guidelines (ADAAG), HRS § 103-50, and other applicable accessibility guidelines and design standards. However, mechanical areas will not be made accessible for the handicapped as the project will be staffed by only able bodied personnel. The construction documents will be submitted to the DCAB for review and

comments.

3.2.6 POPULATION

The study area is located within the Primary Urban Center on the Island of O'ahu. According to the State of Hawai'i, Department of Business, Economic Development and Tourism, the 1990 residential and de facto populations of the City and County of Honolulu were 838,200 and 912,100, respectively, and are projected to increase to 1,050,600 and 1,130,600, respectively, by the year 2010 (The State of Hawai'i 1996 Data Book, Statistical Abstract).

Potential Impacts and Proposed Mitigation

The proposed project is not expected to have significant adverse impacts on population. The proposed infrastructure improvements provide one of the basic services needed to support development efforts in the area.

3.3 INFRASTRUCTURE SYSTEMS AND SERVICES

3.3.1 TRAFFIC AND TRANSPORTATION SYSTEMS

The Beachwalk WWPS is accessed via Lewers Street and is approximately two blocks south (makai) of Ala Wai Boulevard. Lewers Street is one of several streets which convey north-south traffic in the Waikiki area from Ala Wai Boulevard and Kuhio Avenue. Ala Wai Boulevard provides the primary west bound access to Waikiki from Kapahulu Avenue. Kalakaua Avenue and Kuhio Avenue provide access for east-bound traffic.

Potential Impacts and Proposed Mitigation

The proposed projects will have significant adverse impacts on traffic during construction. During installation of the force main and trunk sewer, travel lanes will be temporarily closed to allow construction in the streets. The construction of the WWPS will have limited traffic impacts consisting of periodic temporary increase in traffic flow from vehicles and trucks delivering supplies and equipment. During construction, on-street parking will be temporarily prohibited along sections of Lewers Street, Ala Wai Boulevard, and Ala Moana Boulevard that are adjacent to the active work areas. This is to allow for temporary staging and/or construction access.

To mitigate traffic impacts the following measures will be taken:

- No construction during peak morning and afternoon travel periods.
- No construction on Friday and Saturday evenings.
- One lane of travel will always be open on Lewers Street.
- Two lanes of travel will be always open on Ala Wai and Ala Moana Boulevards.
- On-street parking will be allowed as soon as construction is completed along the

alignment.

- Travel lanes will be opened as soon as construction is completed along the alignment.

3.3.2 POTABLE WATER SYSTEM

The proposed project will not have an impact on the potable water system. Daily water demands are not expected to increase beyond current usage. Continued availability of potable water is anticipated.

3.3.3 DRAINAGE SYSTEM

Runoff from the Beachwalk WWPS flows toward a drain inlet on Lewers Street. Stormwater from this drain flows to the Ala Wai Canal.

Potential Impacts and Proposed Mitigation

The Beachwalk WWPS is not expected to have an impact on the drainage system because the amount of impervious surface will not be significantly increased. Drainage patterns will not change as the majority of the proposed improvements will be modifications to existing facilities.

Implementation of appropriate Best Management Practices (BMPs) will minimize the impacts of construction stormwater and dewatering activities. The contractor shall include the following control measures in the BMPs:

- *A silt screen shall be installed across the Ala Wai Canal approximately ten feet downstream of the project site. The silt screen shall consist of a filter fabric combined with a layer of polyester netting for support. The screen shall remain in place for the duration of project activities.*
- *Sediment retention berms lined with silt screen shall be placed along the down-slope edge of active construction areas, and staging and stockpile areas. In particular, sediment retention berms shall be in place during trenching or micro-tunneling activities associated with the force main and trunk sewer. These berms shall function to prevent sediment captured in storm runoff from entering the Ala Wai Canal. They shall be shaped to retain runoff and trap sediment before it leaves the construction site, and shall be sized to accommodate the volume of runoff generated by a one-inch storm. When construction is complete, the berms and all of their components shall be removed.*
- *All discharge pollution controls shall be regularly monitored and maintained by the project contractor. In the event of rainfall of 1-inch or greater within a 24-hour period, discharge pollution control measures should be checked within 24 hours of the event. During prolonged rainfall, control measures should be checked daily. If a severe storm event such as a 100-year storm occurs, then construction activities shall stop, equipment and materials will be stored, relocated, or otherwise secured against storm impacts, and any discharge control features*

installed within the stream channel removed. The contractor shall be responsible for recovering any materials or equipment washed away by stream flow.

3.3.4 WASTEWATER SYSTEM

Wastewater from the service area is conveyed from the Beachwalk WWPS to the Ala Moana WWPS and pumped through two force mains to the Sand Island WWTP for treatment and disposal. Should incoming wastewater flows exceed the pumping capacity of the WWPS, the excess flow would be diverted into the Ala Wai Canal. Any unintentional or intentional discharge of wastewater from the wastewater system at any point other than the predetermined discharge point is considered a wastewater spill and must be reported to the Department of Health, Clean Water Branch.

Potential Impacts and Proposed Mitigation

The proposed project will reduce the risk of wastewater spills by increasing pumping capacity and improving station reliability. Facility upgrades include: installation of higher capacity pumping units, replacement of an emergency generator, and improvements to the electrical system.

3.3.5 ELECTRICAL AND COMMUNICATIONS SYSTEMS

The electrical power and communications utilities which serve Waikiki are privately owned by Hawaiian Electric Company and Hawaiian Telcom. Electrical power is supplied to the project site by overhead service lines along Lewers Street. Pad-mounted transformers step down HECO's 11.5 KV power to 480/277V power. In the event of a commercial power outage, emergency generators will start and essential loads automatically transferred to emergency power.

Potential Impacts and Proposed Mitigation

The HECO system has adequate service capacity to meet the projected power requirements of the proposed project. Input line reactors and filters will be installed if required to limit harmonic distortion imposed on the HECO system and the pump station's electrical system. The proposed electrical system and generator upgrades will improve station reliability and reduce the risk of wastewater spills.

3.3.6 SOLID WASTE DISPOSAL SYSTEM

Solid waste generated at the project site is collected by the Department of Environmental Services, City and County of Honolulu and transported to the City's H-Power facility for disposal.

Potential Impacts and Proposed Mitigation

The proposed project is not expected to have a significant impact on the solid waste disposal system. The proposed improvements should not have a significant effect on the amount of solid waste generated at the facility. The Contractor will be responsible for disposal of construction debris which will be the primary item for disposal.

3.3.7 FIRE, POLICE AND MEDICAL SERVICES

Police protection services are provided by the Honolulu Police Department. Fire protection service is provided through the Honolulu Fire Department's McCully and Waikiki Stations. Major medical services in the Primary Urban Center include the Queen's Medical Center on Punchbowl Street, Straub Clinic and Hospital at the intersection of King Street and Ward Avenue, and the Kaiser Permanente Medical.

Potential Impacts and Proposed Mitigation

The proposed project is not expected to have a significant impact on fire, police and medical services.

SECTION 4 RELATIONSHIP TO STATE AND COUNTY LAND USE PLANS AND POLICIES

4.1 *THE HAWAII STATE PLAN*

The Hawai'i State Plan, Chapter 226, Hawai'i Revised Statutes, serves as a written guide for the future long range development of the State. The Plan identifies statewide goals, objectives, policies, and priorities.

The proposed project would be in conformance with the State Plan's objectives and policies for facility systems. According to Section 226-14, Objectives and policies for facility systems-in general, and Section 226-15, Objectives and policies for facility systems-solid and liquid wastes, the following policies would apply to the proposed project:

Section 226-14 Objectives and policies for facility systems-in general:

- (a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.

Section 226-15 Objectives and policies for facility systems-solid and liquid wastes:

- (a)(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.

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 or Conservation. The project site is located in the Urban (land use) District. Land uses in the State Urban District are regulated by the City and County of Honolulu through its zoning regulations as contained in the Land Use Ordinance.

4.3 *GENERAL PLAN & DEVELOPMENT PLAN*

4.3.1 GENERAL PLAN

The General Plan identifies the long-range planning goals and objectives which the City and County of Honolulu attempts to accomplish in the interest of O'ahu residents. The proposed project is in conformance with the General Plan's objectives and policies for 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 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 timely and orderly expansions 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 patter of land use on O‘ahu.

4.3.2 PRIMARY URBAN CENTER DEVELOPMENT PLAN

The project site is located in the Primary Urban Center (PUC) of the City and County of Honolulu. The Development Land Use Map shows a conceptual designation of Resort for the entire block on which the WWPS is located.

The proposed project is consistent with the policies of the Development Plan to: (1) “implement wastewater collection system improvements to provide adequate service and sound facilities to existing neighborhoods and timely increases in system capacity to areas planned to undergo improvement or change in use” and (2) “implement adequate and timely upgrades/expansion of wastewater treatment facilities to meet the growth demands of the PUC.”

Public Infrastructure Map

A Public Infrastructure Map revision is required for City-funded projects for land acquisition or construction and certain listed public and private utility facilities that meet any one of the following criteria:

- (a) Has a significant impact on surrounding land uses or the natural environment;
- (b) Establishes a new facility;
- (d) Involves modification (replacement or renovation) of existing facilities which would permit significant new development or redevelopment; or

-
- (e) Costs over \$3,000,000.00 for capital improvements.

The proposed project meets applicability criteria (d) and (e).

4.4 WAIKIKI SPECIAL DISTRICT

The Beachwalk Pump Station and portion of the trunk sewer and force main are located in the Waikiki Special District (WSD) as defined by the Land Use Ordinance (LUO), Chapter 21, ROH. The LUO outlines requirement for development within the Waikiki Special District. Land use precincts in the WSD are shown in **Figure 4-1**. Zoning for the areas outside of the WSD are also shown in **Figure 4-1**. A Special District Permit (Minor) will be required for the proposed pump station. The zoning designation for the WWPS site is Public Precinct.

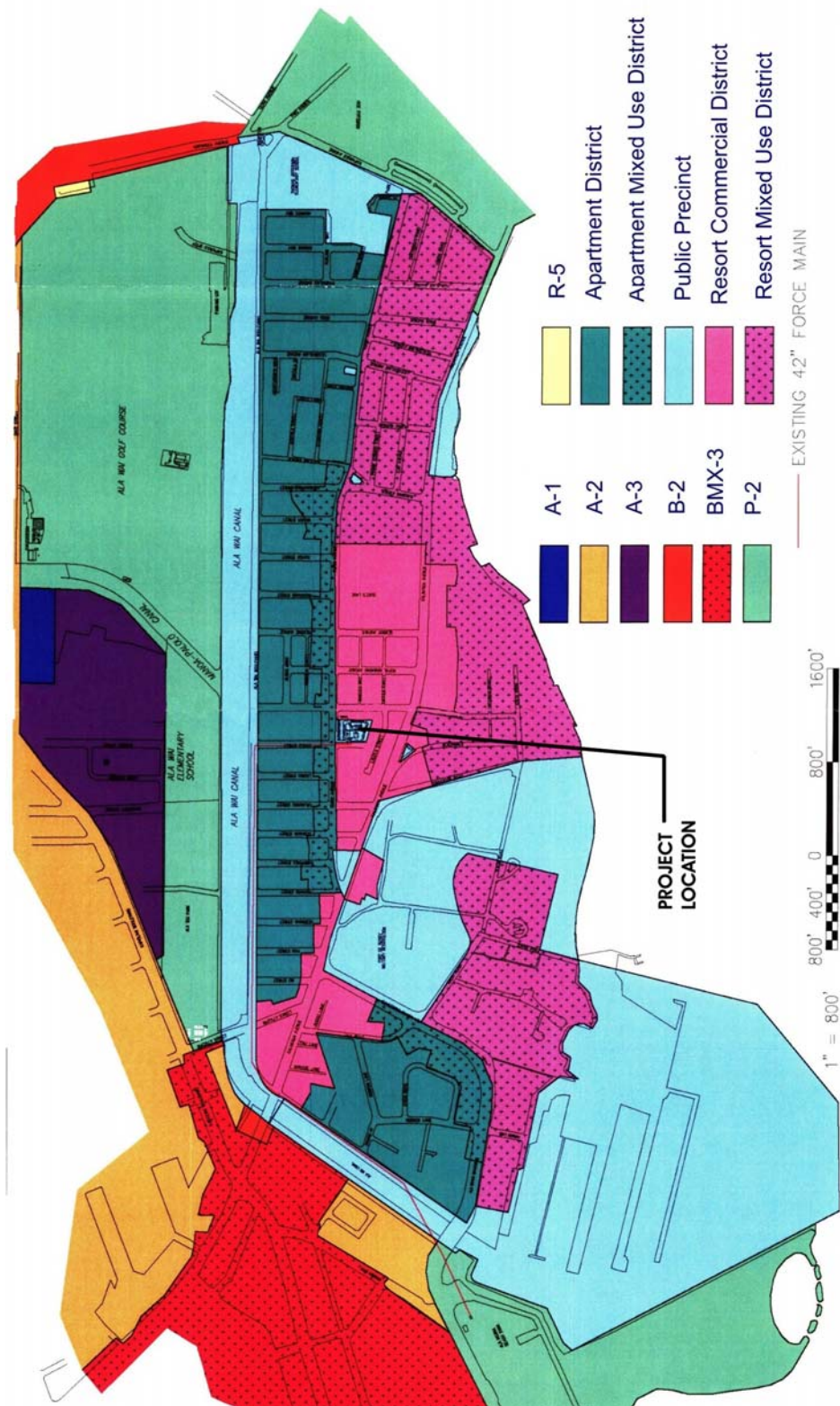


Figure 4-1. Waikiki Special District Land Use Precincts and Zoning

Source SSFM and Land Use Ordinance

4.5 SPECIAL MANAGEMENT AREA (SMA) RULES & REGULATIONS

A portion of the Beachwalk Force Main is within the Special Management Area (SMA) (see **Figure 4-2**). SMA areas are defined as sensitive environments that should be protected in accordance with the State's coastal zone management policies. Since the project lies in the SMA and has a total construction cost in excess of \$125,000.00, approval of a SMA Use Permit (SMP) is required from the City Council.

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, and federal regulations 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;

(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;

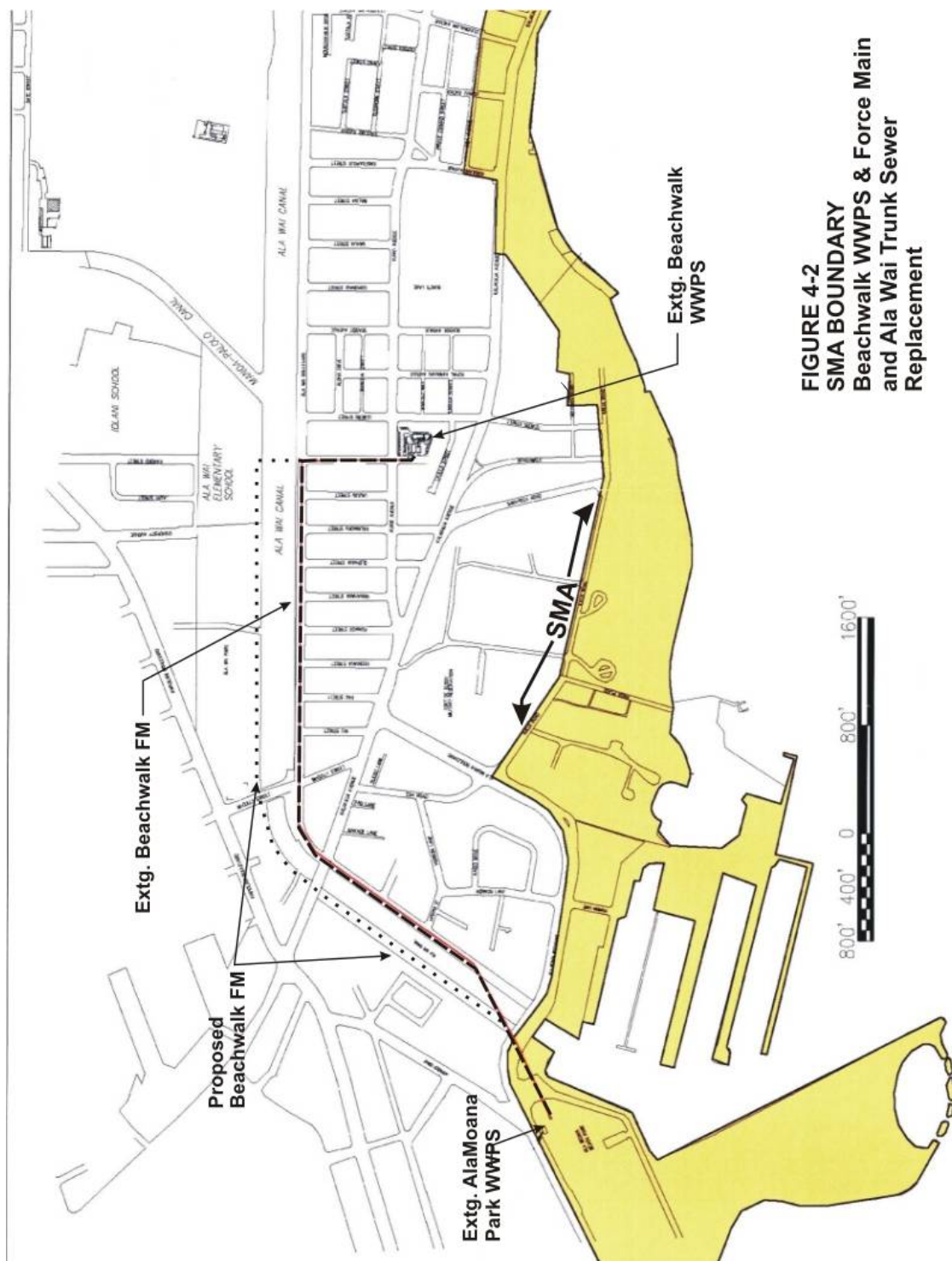


FIGURE 4-2
SMA BOUNDARY
Beachwalk WWPS & Force Main
and Ala Wai Trunk Sewer
Replacement

(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 project is being developed with government funds. Recreational facilities will be temporarily affected during construction. Water quality will be protected during construction through the application of BMPs in accordance with NPDES permit regulations. The proposed improvements will take place within an existing containment berm. The project will not alter existing shoreline areas.

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:

No adverse impacts associated with construction of the proposed Beachwalk WWPS improvements are expected. The only area of potential concern will be the excavation sites for the access pits to allow for the micro-tunneling work. The depth at which the proposed trunk sewer line and the force main will be installed is 20-25 feet and 40-50 feet, respectively below existing grades.

The proposed construction is within a developed area and on land that is composed mainly of fill material. It is highly unlikely that significant historic or archaeological resources are present at the project site. During excavation of the pits, the contractor will be required to closely monitor for historic or archaeological resources. Should any unidentified deposits be uncovered during construction, work will cease in the immediate area and the State Historic Preservation Office will be contacted. As appropriate, mitigative measures will be proposed and coordinated with SHPD.

No impacts to cultural practices will result from the proposed improvements. The project site is dominated by common, introduced plant species not identified with traditional gathering practices. Project activities will not diminish the availability of any plant type for use in cultural practices. The proposed project will not interrupt access to coastal areas.

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 land forms 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 proposed improvements conform to the Coastal Zone Management Program Objective 3, Scenic and Open Space, which encourages the protection, preservation and, where desirable, restoration or improvement of the quality of coastal scenic and open space resources.

The project area is located in an urbanized area and is adjacent to recreational-open space facilities. The Beachwalk WWPS site improvements are consistent with the surrounding apartment, commercial and resort land uses. Construction of the WWPS will not obstruct present views. The WWPS has been designed to be built below the established 60-foot maximum building height limit of the area. See also **Section 3.1.5 Scenic and Visual Resources**.

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 to have any adverse affects on marine resources. Project activities do not involve alterations to stream channels or other water bodies or water sources. Improvements will not affect the marine and coastal resources of the Ala Wai Canal.

During construction, Best Management Practices (BMPs) will be employed in compliance with NPDES permit requirements to prevent pollutant discharge in storm water runoff. Discharge pollution prevention measures will be installed for each project action as required by project activities. Measures to prevent sediment discharge in storm water runoff during construction will be in place and functional before project activities begin and will be maintained throughout the construction period. Runoff and discharge pollution prevention measures will be incorporated into a site-specific construction BMPs plan by the project contractor.

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

(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 project is being developed on County lands with County funds. The project has been assessed for social, visual, and environmental impacts in accordance with Chapter 25 of the Revised Ordinances of Honolulu. 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 subject projects are outside of areas subject to coastal flooding.

The development of the project will be in compliance with the requirements of the Federal Flood Insurance Program, the City and County of Honolulu Drainage, Grading and Development

standards for Flood Hazard Districts, and Land Use Ordinance, Section 21-9.10, Flood Hazard Districts.

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:

The project site lies within the State's Urban land use district. Land uses within this designation are subject to regulation by the City and County of Honolulu. The project sites are within the Waikiki Special District as defined by the LUO.

All improvement activities will be conducted in compliance with state and county environmental rules and regulations. This EA document is prepared to identify and, where necessary, propose mitigation measures to address impacts anticipated from the construction and operation of the project. This document will be published for public review in compliance with procedures set forth in ROH Chapter 25.

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

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

Discussion:

Public involvement in the project will consist of public hearings before the Department of Planning and Permitting and the City Council that will be conducted as part of the SMA permit approval process. Additionally, public notice of the proposed action will be provided in the OEQC Bulletin. Please refer to Section 6, Agencies, Organizations, and Individuals Consulted for a list of agencies, organizations and individuals consulted.

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 Beachwalk Force Main will be constructed away from shoreline setback areas and therefore impacts to recreation resources will be limited to the construction period. Following construction, the area will be restored to pre-construction conditions.

All construction will be on fast land (not in the Ala Wai Canal) and therefore no structures will be placed in the ocean or Ala Wai Canal.

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 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 project will not impact marine resources and does not involve research, education, or technological development related to the coastal and marine environments.

SECTION 5 NECESSARY PERMITS AND APPROVALS

5.1 CITY AND COUNTY OF HONOLULU

The following permits are required by the City and County of Honolulu:

- *Building Permit* - Department of Planning and Permitting
- *Construction Dewatering Permit* - Department of Planning and Permitting
- *Combustible and Flammable Liquids Tank Installation Permit* - Honolulu Fire Department
- *Grading, Grubbing, Excavation and Stockpiling Permits* - Department of Planning and Permitting
- *Street Usage Permit* - Department of Transportation Services
- *Flood Determination in General Flood Plain District* - Department of Planning and Permitting
- Plan Review - Board of Water Supply
- Plan Review - Department of Planning and Permitting
- Public Infrastructure Map Amendment – Department of Planning and Permitting
- Special District Permit - Department of Planning and Permitting
- Special Management Area Use Permit - Department of Planning and Permitting

5.2 STATE OF HAWAII

The following permits are required by the State of Hawai'i:

- *NPDES Permit for Construction Related Discharges* - Department of Health

The following approvals and review are required by the State of Hawai'i:

- *Air Pollution Control* - Department of Health
- *Community Noise Control* - Department of Health
- *Wastewater Systems* - Department of Health
- Commission on Persons with Disabilities
- Land Use – Department of Land and Natural Resources

5.3 FEDERAL AGENCIES

The proposed action does not require Federal permits or approvals.

5.4 UTILITY COMPANIES

Construction documents will be reviewed by the following utility companies:

- Hawaiian Electric Company
- Hawaiian Telcom Incorporated
- Oceanic Cable
- The Gas Company

SECTION 6 ORGANIZATIONS AND AGENCIES CONSULTED DURING THE EA PREPARATION PERIOD

6.1 CITY AND COUNTY OF HONOLULU

Board of Water Supply
Department of Planning and Permitting
Department of Transportation Services
Fire Department
Police Department

6.2 STATE OF HAWAII

Disability and Communication Access Board
Department of Business, Economic Development and Tourism
Department of Health
Department of Land and Natural Resources
Department of Transportation
Office of Environmental Quality Control

6.3 FEDERAL AGENCIES

Department of the Army, Corps of Engineers

6.4 GOVERNMENT OFFICIALS

Representative Scott Saiki
Senator Brian Taniguchi
Councilwoman Ann Kobayashi
Councilman Charles Djou

6.5 UTILITY COMPANIES

Hawaiian Telcom Incorporated
Hawaiian Electric Company, Inc.

6.6 PRIVATE ORGANIZATIONS / INDIVIDUALS

Waikiki Neighborhood Board
McCully-Mo'ili'ili Neighborhood Board
Waikiki Improvement Association
Diamond Head, Kapahulu, St. Louis Neighborhood Board

SECTION 7 FINDINGS AND DETERMINATION

7.1 ANALYSIS

Chapter 200 (Environmental Impact Statement Rules) of Title 11, Administrative Rules of the State Department of Health establishes criteria for determining whether an action may have a significant impact on the environment. The Rules establish “significance criteria” for making the determination. The relationship of the proposed project to the thirteen criteria is provided below.

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

The existing project sites were modified when the existing WWPS building and parking areas were developed. The subject property does not contain any known natural or cultural resources. The existing facilities will be demolished as part of the development process. Further, the site will accommodate the new facilities. Should archaeological or cultural features be discovered during the demolition or grading phase of work, the Historic Preservation Division of the Department of Land and Natural Resources will be notified and work in the vicinity of the discovered features will be halted until the site has been evaluated for significance.

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

The proposed development of the new WWPS will curtail other uses of the site.

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 Beachwalk WWPS is consistent with the City and County of Honolulu's General Plan relating to transportation and utilities. Further, the WWPS, force main and trunk sewer conforms to the PUC Development Plan and Facilities Plan.

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

The proposed Beachwalk WWPS, Force Main and Trunk Sewer projects will generally benefit the community and the area the system serves. The planned upgrades will ensure that the wastewater system will continue to provide reliable services without unplanned shutdowns or failure in the system.

5. Substantially affects public health.

There is no public health concerns related to the proposed construction of the Beachwalk WWPS, Force Main and Trunk Sewer. No impacts to soil or water quality are anticipated. Short-term impacts to noise and air quality as a result of construction are not anticipated to be significant and will be limited to the construction phase.

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

The development of the projects will not have secondary impacts on the neighboring communities as well as other parts of O‘ahu.

7. Involves a substantial degradation of environmental quality.

The proposed projects do not involve a substantial impact to environmental quality. It is anticipated that fuel, material, and human resources will be expended during the construction phases of the project. Mitigation measures will be employed as practicable to minimize potential effects from construction activities, such as dust control and noise during construction. The proposed project does not constitute substantial degradation of environmental quality.

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

The proposed project does not involve a commitment for a larger action at this time. The proposed project does not create significant adverse effects upon the environment.

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

The project site has been previously disturbed and developed. There are no known rare, threatened or endangered species or habitat for such rare, endangered or threatened species at the project site. As part of the landscaping plan, native plants will be planted at the Beachwalk WWPS.

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

The proposed project will not detrimentally affect air or water quality or ambient noise levels beyond the construction period. Mitigation measures and Best Management Practices proposed during the construction period will mitigate temporary air, water and noise pollution.

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

The project site is not located near or adjacent to an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous lands, etc. As noted earlier, the Federal Emergency Management Agency’s FIRM Insurance designation for the project site is Zone A, A02, and Ae7 – areas determined to be within the 100-year floodplain. The Beachwalk WWPS’s finish floor elevation will be located above the flood elevation.

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

The Beachwalk WWPS being within the Waikiki area will not impact existing view and vistas. The Force Main and Trunk Sewer will be placed underground and therefore will not impact view or vistas.

13. Requires substantial energy consumption.

Construction of the project will require the consumption of energy in the form of petroleum products to operate construction machinery. Operation of the completed Beachwalk WWPS will also require the consumption of energy (electricity) for its daily operations.

7.2 FINDINGS AND REASONS SUPPORTING DETERMINATION

In accordance with the provisions set forth in Chapter 343, HRS, and the significance criteria in Section 11-200-12 of HAR, Title 11, Chapter 200, it has been determined that the project will have no significant adverse impacts to air quality, water quality, noise levels, social welfare, historic sites, or wildlife habitat. Anticipated short-term impacts will be temporary and will not adversely impact the environmental quality of the area. Further, mitigation measures described in this document will further minimize short-term impacts.

Long-term and secondary impacts anticipated are beneficial. Beneficial impacts are related to increased reliability of the wastewater system that services the communities in the tributary area. Long-term impacts are related to the additional demand placed on resources required to support the WWPS, such as additional demand on energy. Overall, the benefits of the project are believed to outweigh the adverse impacts. Therefore, it has been determined that an Environmental Impact Statement (EIS) will not be required, and that a Finding of No Significant Impact (FONSI) will be issued for this project.

REFERENCES

Belt Collins and Associates, East Mamala Bay Facilities Plan, Department of Public Works, December 1993.

City and County of Honolulu, Honolulu Land Information System (HOLIS), Department of Planning and Permitting, <http://gis.hicentral.com/>, 2007.

City and County of Honolulu, Department of Planning and Permitting, <http://www.honoluluodpp.org/planning/>, 2007.

Edward K. Noda and Associates, Inc., Environmental Assessment and Negative Declaration, Ala Wai Canal Improvements, Honolulu, O'ahu, Hawai'i, 1993.

Federal Emergency Management Agency, Flood Insurance Rate Maps, 2000.

Fukunaga and Associates, "Final Sewer Rehabilitation and Infiltration and Inflow Minimization Study (Final Sewer I/I Plan)," December, 1999.

Hida, Okamoto and Associates, "Preliminary Engineering Report, Ala Wai Trunk Sewer Relief," Waikiki, O'ahu, Hawai'i, May 2004.

SSFM International, Inc., "Preliminary Engineering Report, Beachwalk Wastewater Pump Station Force Main Replacement," April 2005.

R.M. Towill Corporation, "Preliminary Engineering Report for the Beachwalk Wastewater Pump Station," Honolulu, Hawai'i, April 2004.

U.S. Department of Agriculture, Soil Conservation Services, "Soil Survey of Island of Kaua'i, O'ahu, Maui, Moloka'i, and Lana'i, State of Hawai'i, 1972.

APPENDIX A – PUBLIC CONSULTATION

BOARD OF WATER SUPPLY

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



June 7, 2006

MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman
HERBERT S. K. KAOPUA, SR.
SAMUEL T. HATA
ALLY J. PARK

RODNEY K. HARAGA, Ex-Officio
LAVERNE T. HIGA, Ex-Officio

CLIFFORD P. LUM
Manager and Chief Engineer

DONNA FAY K. KIYOSAKI
Deputy Manager and Chief Engineer

TO: EUGENE LEE, DEPUTY DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: for  CLIFFORD P. LUM, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR REPLACEMENT OF THE
EXISTING BEACHWALK WASTEWATER PUMP STATION,
REPLACEMENT OF BEACHWALK 42" FORCE MAIN, AND
REPLACEMENT OF THE ALA WAI TRUNK SEWER

The existing water system is presently adequate to accommodate the proposed pump station and sewer main replacements. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit. The final decision on the availability of water will be confirmed when the building permit is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The construction drawings should be submitted for our approval.

The project is subject to Board of Water Supply Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the building permit.

Please coordinate construction with the Board of Water Supply's Capital Projects Division, Support Section (748-5740) for possible conflicts.

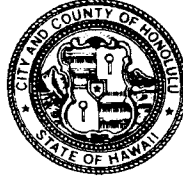
If you have any questions, please contact Robert Chun at 748-5440.

cc: Howard Tanaka
Chester Koga, R.M. Towill Corporation

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 523-4567
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MUFI HANNEMANN
MAYOR




EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 07-0178

July 25, 2007

TO: CLIFFORD P. LUM, P.E., MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM:  EUGENE C. LEE, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: ENVIRONMENTAL ASSESSMENT FOR BEACHWALK WASTEWATER
PUMP STATION, FORCE MAIN, AND ALA WAI TRUNK SEWER
REPLACEMENT

We acknowledge your letter of June 7, 2006, and offer the following in response to comments.

1. *The existing water system is presently adequate to accommodate the proposed pump station and sewer main replacements. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of your building permit. The final decision on the availability of water will be confirmed when the building permit is submitted for approval.*

We understand that the existing water system is presently adequate to accommodate the proposed pump station. We are advised that the system capacity information determination is based on current data and that BWS is reserving the right to change its position or information stated up until final approval of the project's building permit.

2. *When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.*

We acknowledge that we will be required to pay the Water System Facilities Charges.

3. *The Construction drawings should be submitted for our approval.*

Clifford Lum
July 25, 2007
Page 2

Final construction drawings will be submitted to BWS for review and approval.

4. *The project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to issuance of the building permit.*

We agree that the proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to issuance of the building permit.

5. *Please coordinate construction with the BWS Capital Projects Division, Support Section (748-5740) for possible conflicts.*

We will coordinate with BWS' Capital Projects Division to avoid possible conflicts.

Should you have any questions, please contact Jay Hamai, Wastewater Division, at 768-8750.

c: R.M. Towill Corporation

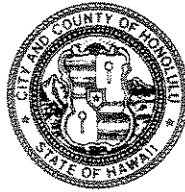
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DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4432 • FAX: (808) 527-6743
DEPT. WEB SITE: www.honolulu.gov • CITY WEB SITE: www.honolulu.gov

06 JUN 22 PM 2:45

MUFI HANNEMANN
MAYOR



HENRY ENG, FAICP
DIRECTOR

DAVID K. TANOUE
DEPUTY DIRECTOR

06WWB056(SG)
2006/ELOG-1277

June 22, 2006

MEMORANDUM

TO: EUGENE C. LEE, P.E., DEPUTY DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: KRISTIE CHING
WASTEWATER DIVISION

FROM: *Dennis M. Nishimura*
For HENRY ENG, FAICP, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR BEACHWALK
WASTEWATER PUMP STATION AND FORCE MAIN AND ALA WAI TRUNK
SEWER REPLACEMENT
TMK: 2-6-018: 011

This is in response to your letter dated May 30, 2006 requesting comments for the proposed projects. We have reviewed the DEA and have the following comments:

1. Reference should be made to the Primary Urban Center Development Plan, dated June 2004.
2. SECTION 1 PROJECT SUMMARY:
 - a. Replace "Development Plan Land Use: Public and Quasi-Public" with "Primary Urban Center Development Plan: Resort on the DP Land Use Map (illustrative of the policy statements in the DP text)."
 - b. Delete the reference to "Public Facilities Map."
 - c. Break into two separate topics "Existing Uses" and "Surrounding Uses."
3. SECTION 2.4.3 DESIGN FLOWS: We suggest updating the calculations of future projected flows to reflect the latest 2030 population projections rather than using the old 2020 projections. ENV may contact Steve Young of DPP's Planning Division at 527-6080 for the latest projections.

EUGENE C. LEE, P.E.

June 22, 2006

Page 2

4. SECTION 3.2.2 HISTORIC AND ARCHAEOLOGICAL RESOURCES: There should be more discussion about the project being located within the Jacus sand layer of Waikiki. This area is known to have the greatest number of remains and artifacts. DLNR should be consulted to a greater extent for information in this area.
5. SECTION 4 RELATIONSHIP TO STATE AND COUNTY LAND USE PLANS AND POLICIES: The EA should briefly discuss the requirements for a Public Infrastructure Map revision.
6. SECTION 4.3.2 PRIMARY URBAN CENTER: Revise the second sentence to say: "The Development Plan Land Use Map shows a conceptual designation of Resort for the entire block on which the Beachwalk WWPS site is located."
7. SECTION 4.4 WAIKIKI SPECIAL DISTRICT: Add the following sentence at the end: "The zoning designation for the WWPS site is Public Precinct."
8. SECTION 5 NECESSARY PERMITS AND APPROVALS: Please add Special Management Area Use Permit as a required City permit.
9. In order to determine compliance with the Land Use Ordinance, the site plan should show required yards and setbacks, and the building elevations should show building heights.

If you have any questions, please contact Mr. Scott Gushi of the Wastewater Branch at 523-4886.

HE:dl
[460157]

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

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MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR


CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 07-0176

July 25, 2007

TO: HENRY ENG, FAICP, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

ATTN: SCOTT GUSHI, WASTEWATER BRANCH

FROM:  EUGENE C. LEE, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: ENVIRONMENTAL ASSESSMENT (EA) FOR BEACHWALK
WASTEWATER PUMP STATION (WWPS), FORCE MAIN (FM), AND
ALA WAI TRUNK SEWER REPLACEMENT

We acknowledge your letter of June 22, 2006, and offer the following in response to comments.

1. *Reference should be made to the Primary Urban Center Development Plan (PUCDP) dated June 2004.*

A discussion on the project's consistency with the PUCDP's policies on the wastewater system has been included in the Final EA.

2. *Section 1 Project Summary:*
 - a. *Replace "Development Plan Land Use: Public and Quasi-Public" with "PUCDP: Resort on the DP Land Use Map (illustrative of the policy statements in the DP text)."*

Per your comment, this section has been revised in the Final EA Project Summary.

- b. *Delete the reference to "Public Facilities Map."*

The reference to Public Facilities Map in this section has been deleted in the Final EA Project Summary.

c. Break into two separate topics "Existing Uses" and "Surrounding Uses."

The two topics have been separated in the Final EA Project Summary.

- 3. Section 2.4.3 Design Flows: We suggest updating the calculations of future projected flows to reflect the latest 2030 population projections rather than using the old 2020 projections. Department of Environmental Services may contact Steve Young of Department of Planning and Permitting (DPP), Planning Division at 527-6080 for the latest projections.*

Due to the extended length of time needed to verify the flow projections for 2030, we are proposing to continue using the Year 2020 information. However, an initial review indicated that there will be no significant changes to the design of the project. Year 2030 flow information will be integrated into the system capacity calculations during the design phase of the project.

- 4. Section 3.2.2 Historic and Archaeological Resources: There should be more discussion about the project being located within the Jacus sand layer of Waikiki. This area is known to have the greatest number of remains and artifacts. Department of Land and Natural Resources (DLNR) should be consulted to a greater extent for information in this area.*

There are no known archaeological sites on or adjacent to the project site. The project site has been previously disturbed for construction of the existing Beachwalk WWPS and parking lot. The alignments of the new FM and trunk sewer line are also along previously disturbed land. Additionally, the elevation of the proposed trunk sewer line and the FM will be 20-25 feet and 40-50 feet below grade, respectively. The installation depth of both sewer lines makes it unlikely that historic or archaeological resources will be encountered.

The only area of potential concern will be the excavation sites for the access pits to allow for the micro-tunneling work.

During excavation of the pits, the contractor will be required to closely monitor for historic or archaeological resources that may be encountered. Should any historic or archaeological resources be uncovered during the course of the project, work in the immediate area will cease and the Historic Preservation Division of the (DLNR) contacted for further evaluation.

5. *Section 4 Relationship to State and County Land Use Plans and Policies: The EA should discuss the requirements for a Public Infrastructure Map Revision.*

According to DPP's Policy Planning Branch, the Beachwalk WWPS is not indicated in the Primary Urban Center's Public Facilities Map. A Public Infrastructure Map revision is required for City-funded projects for land acquisition or construction and certain listed public and private utility facilities that meet any one of the following criteria:

- (a) Has a significant impact on surrounding land uses or the natural environment;
- (b) Establishes a new facility;
- (d) Involves modification (replacement or renovation) of existing facilities which would permit significant new development or redevelopment; or
- (e) Costs over \$3,000,000.00 for capital improvements.

The proposed project meets applicability criteria (d) and (e).

A discussion on the Public Infrastructure Map Revision requirements for this project has been added to the Final EA.

6. *Section 4.3.2 Primary Urban Center: Revise the second sentence to say: "The Development Land Use Map shows a conceptual designation of Resort for the entire block on which the WWPS is located."*

Section 4.3.2 has been revised in the Final EA to include the statement that "the Development Land Use Map shows a conceptual designation of Resort for the entire block on which the WWPS is located."

7. *Section 4.4 Waikiki Special District: Add the following sentence at the end: "The zoning designation for the WWPS site is Public Precinct."*

This section has been revised in the Final EA to include the sentence, "The zoning designation for the WWPS site is Public Precinct."

8. *Section 5 Necessary Permit and Approvals: Please add Special Management Area (SMA) Use Permit as a required City permit.*

Henry Eng
July 25, 2007
Page 4 of 4

A SMA Use Permit has been added in Section 5 as a required permit in the Final EA.

9. *In order to determine compliance with the Land Use Ordinance, the site plan show required yards and setbacks, and the building elevations should show building heights.*

Figure 2-6, Site Plan, Figure 2-9, North Elevation, and Figure 2-10, Storage Building in the Final EA have been revised to include dimensions showing building heights and setbacks.

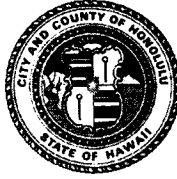
Should you have any questions, please contact Jay Hamai, Wastewater Division, at 768-8750.

c: R.M. Towill Corporation

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4529 • Fax: (808) 523-4730 • Internet: www.honolulu.gov

MUFI HANNEMANN
MAYOR



MELVIN N. KAKU
DIRECTOR

TP5/06-157020R

June 23, 2006

MEMORANDUM

TO: EUGENE LEE, DEPUTY DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

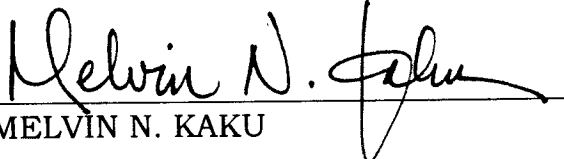
FROM: MELVIN N. KAKU, DIRECTOR

SUBJECT: BEACHWALK WASTEWATER PUMP STATION, BEACHWALK
FORCE MAIN AND ALA WAI TRUNK SEWER REPLACEMENT

Thank you for your May 23 and 25, 2006 letters, requesting our review of and comments on the draft environmental assessment (EA) for the subject project. We have the following comments regarding the document:

1. The discussion in Section 3.3.1 TRAFFIC AND TRANSPORTATION SYSTEMS should disclose traffic impacts on streets and discuss mitigation measures.
2. The EA should address on-street parking impacts.

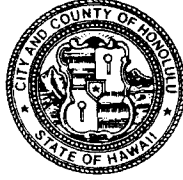
Should you have any questions regarding these comments, please contact Ms. Faith Miyamoto of the Transportation Planning Division at Local 6976.


MELVIN N. KAKU

cc: ✓ Mr. Chester Koga, AICP
R.M. Towill Corporation

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 523-4567
Web site: www.honolulu.gov



MUFI HANNEMANN
MAYOR


EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 07-0180

July 25, 2007

TO: MELVIN N. KAKU, DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

FROM:  EUGENE C. LEE, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: ENVIRONMENTAL ASSESSMENT (EA) FOR BEACHWALK
WASTEWATER PUMP STATION (WWPS), FORCE MAIN, AND
ALA WAI TRUNK SEWER REPLACEMENT

We acknowledge your letter of June 23, 2006, and offer the following in response to comments.

1. *The discussion in Section 3.3.1 – Traffic and Transportation Systems should disclose traffic impacts on streets and discuss mitigation measures.*

Impacts to traffic and mitigation measures have been included in the final EA and include:

Impacts

- During installation of the force main and trunk sewer, travel lanes will be temporarily closed to allow construction in the streets.
- The construction of the WWPS will have limited traffic impacts consisting of periodic temporary increase in traffic flow from vehicles and trucks delivering supplies and equipment.

Mitigation

- No construction during peak morning and afternoon travel periods.
- No construction on Friday and Saturday evenings.
- One lane of travel will always be open on Lewers Street.
- Two lanes of travel will be always open on Ala Wai and Ala Moana Boulevards.
- Travel lanes will be opened as soon as construction is completed along the alignment.

Melvin Kaku
July 25, 2007
Page 2

2. The EA should address on-street parking impacts.

Impacts to on-street parking and mitigation measures have been included in the final EA and include:

Impacts

- During construction, on-street parking will be temporarily prohibited along sections of Lewers Street, Ala Wai Boulevard, and Ala Moana Boulevard that are adjacent to the active work areas. This is to allow for temporary staging and/or construction access.

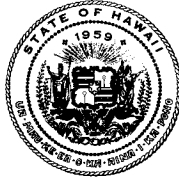
Mitigation

- On-street parking will be allowed as soon as construction is completed along the project segment.

Should you have any questions, please contact Jay Hamai, Wastewater Division, at 768-8799.

c: R.M. Towill Corporation

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EPO-06-082

June 27, 2006

Mr. Chester Koga, AICP
R.M. Towill Corporation
420 Waiakamilo Road #411
Honolulu, Hawaii 96817

Dear Mr. Koga:

SUBJECT: Draft Environmental Assessment for Beachwalk Wastewater Pump Station and
Force Main and Ala Wai Trunk Sewer Replacement
Honolulu, Oahu, Hawaii
TMK: (1) 2-6-18: parcel 11

Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have the following Wastewater Branch comments.

Wastewater Branch

We have reviewed the subject document which proposes the replacement of the existing Beachwalk Wastewater Pump Station (WWPS), replacement of Beachwalk 42" Force Main, and replacement of the Ala Wai Trunk Sewer.

We have no objections to the proposed actions which include replacement of the existing wwps, force mains and trunk sewers. Work to replace/rehabilitate the existing systems should begin as soon as possible and be given priority over other projects. Reliability and redundancy of the new systems are a major concern to our office

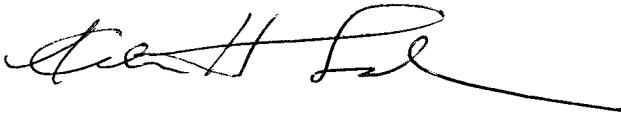
All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater System." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at (808) 586-4294.

Mr. Koga
June 27, 2006
Page 2

We strongly recommend that you review all of the Standard Comments on our website:
www.state.hi.us/health/environmental/env-planning/landuse/landuse.html. Any comments
specifically applicable to this application should be adhered to.

If there are any questions about these comments please contact Jiakai Liu with the Environmental
Planning Office at 586-4346.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kelvin H. Sunada', with a long horizontal line extending from the end of the signature.

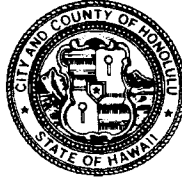
KELVIN H. SUNADA, MANAGER
Environmental Planning Office

c: EPO
WWB

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 07-0174

July 25, 2007

Mr. Kelvin H. Sunada, Manager
Environmental Planning Office
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Dear Mr. Sunada:

Subject: Draft Environmental Assessment Beachwalk Wastewater Pump Station,
Force Main, and Ala Wai Trunk Sewer Replacement

We acknowledge your letter of June 27, 2006, noting that you have no objections to the proposed project and offer the following in response to your comments.

1. *All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater System."*

We agree that all wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater System."

2. *We do reserve the right to review the detailed wastewater plans for conformance to applicable rules.*

We also understand that you are reserving the right to review the detailed wastewater plans for conformance to applicable rules.

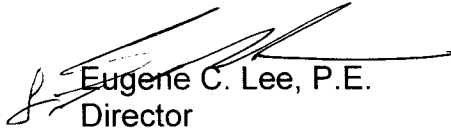
3. *We strongly recommend that you review all of the Standard Comments on our website: <http://www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html> . Any comments applicable to this application should be adhered to.*

Kelvin Sunda
July 25, 2007
Page 2

We have noted your recommendation to review all of the Standard Comments on your website and that any comments applicable to this project should be adhered to.

Should you have any questions, please contact Jay Hamai, Wastewater Division, at 768-8799.

Very truly yours,


Eugene C. Lee, P.E.
Director

c: R.M. Towill Corporation

LINDA LINGLE
GOVERNOR OF HAWAII



235 S BERETANIA ST. SUITE 702
HONOLULU, HAWAII 96813

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

157727
Sep 8
nh

160163

GENEVIEVE SALMONSON
DIRECTOR

Telephone (808) 586-4185
Facsimile (808) 586-4186
Email: oeqc@doh.hawaii.gov

June 15, 2006

Mr. Eugene Lee, Deputy Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

RECEIVED
DEPT OF DESIGN & CONSTR
C & C OF HONOLULU
06 JUN 20 AM 9:43

Dear Mr. Lee:

Subject: Draft Environmental Assessment for the Beachwalk Pump Station and Force Main and
Ala Wai Trunk Sewer Replacement, Oahu

Thank you for the opportunity to review the subject document. We have the following
comments.

1. Page 7 of the DEA states, "Based on records from 1989 to 1998, there were no spills at the Beachwalk WWPS." Are there any spill records from 1999 to present?
2. If trenchless technology is used for installation of the pipes, what precautions will be taken to avoid impacts to burials that may exist along the pipe alignment?
3. Please disclose information about the emergency temporary bypass pipe that the City plans to install.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

Genevieve Salmonson
Genevieve Salmonson
Director

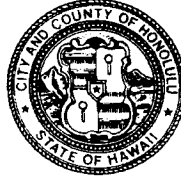
c: RM Towill

RECEIVED
6 JUN 22 AM 3:4
DESIGN & CONSTRUCTION
WASTEWATER DIVISION

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 07-0175

July 25, 2007

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Draft Environmental Assessment Beachwalk Wastewater (WWPS) Pump Station, Force Main (FM), and Ala Wai Trunk Sewer Replacement

We acknowledge your letter of June 15, 2006, and offer the following in response to your comments.

1. *Page 7 of the DEA states, "Based on records from 1989 to 1998, there were no spills at the Beachwalk WWPS." Are there any spill records from 1999 to present?*

This project was initiated to mitigate for potential spills resulting from failure of the system's aging sewer lines. The sewage spill event in March of 2006 was what this project was intended to prevent. This project is being done to upgrade the existing system to prevent future spills.

2. *If trenchless technology is used for installation of the pipes, what precautions will be taken to avoid impacts to burials that may exist along the pipe alignment?*

The elevation of the proposed trunk sewer line and the force main will be 20-25 feet and 40-50 feet, respectively. The installation depth of both sewer lines makes it unlikely that historic or archaeological resources will be encountered. However, during construction the project contractor will be required to closely monitor for historic or archaeological resources that may be encountered. Should any historic or archaeological resources be uncovered during the course of the project, work in the immediate area will cease and the Historic Preservation Division of the Department of Land and Natural Resources contacted for further evaluation.

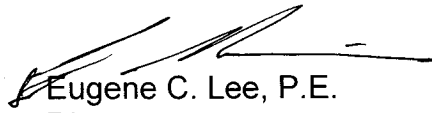
Genevieve Salmonson
July 25, 2007
Page 2

3. *Please disclose information about the emergency temporary bypass pipe that the City plans to install.*

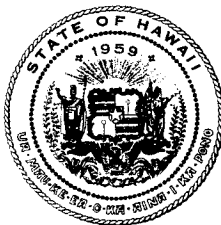
Information on the emergency temporary bypass pipe has been included in the Final EA.

Should you have any questions, please contact Jay Hamai, Wastewater Division, at 768-8750.

Very truly yours,


Eugene C. Lee, P.E.
Director

c: R.M. Towill Corporation



DISABILITY AND COMMUNICATION ACCESS BOARD

919 Ala Moana Boulevard, Room 101 • Honolulu, Hawaii 96814

Ph. (808) 586-8121 (V/TDD) • Fax (808) 586-8129

June 16, 2006

Mr. Eugene Lee
Deputy Director
Department of Design and Construction
650 South King Street
Eleventh Floor
Honolulu, HI 96813

Regarding: Draft Environment Assessment
Beachwalk Wastewater Pump Station and
Force Main and Ala Wai Trunk Sewer Replacement
TMK Map Key: 2-6-18: Parcel 11
Honolulu, Oahu, Hawaii

Dear Mr. Lee,

The Disability and Communication Access Board would like to thank you for the opportunity to review the Draft Environmental Assessment for the Beachwalk Wastewater Pump Station and Force Main and Ala Wai Trunk Sewer Replacement. The purpose of this review is to ensure that this project will take into account accessibility design requirements for persons with disabilities.

The following general statement should be included in the Environmental Assessment:

"All buildings, facilities, and sites shall conform to applicable federal, state, and county accessibility guidelines and standards. Hawaii Revised Statutes §103-50 requires all State of Hawaii or County government buildings, facilities, and sites to be designed and constructed to conform to the Americans with Disabilities Act Accessibility Guidelines, the Federal Fair Housing Amendments Act, and other applicable design standards as adopted and amended by the Disability and Communication Access Board. The law further requires all plans and specifications prepared for the construction of State of Hawaii or County government buildings, facilities, and sites to be reviewed by the Disability and Communication Access Board for conformance to those guidelines and standards."

We strongly encourage the use of the following accessibility guideline, published by the U.S. Access Board. These accessibility guidelines are not yet enforceable by the U.S. Department of Justice under the Americans with Disabilities Act (ADA), nor have they been adopted by state rules under Hawaii Revised Statutes §103-50. However, the accessibility guideline provides

Mr. Eugene Lee
Re: Beachwalk Wastewater Pump Station
Force Main and Trunk Sewer Replacement
June 16, 2006
Page 2

guidance for a minimal level of accessibility for those elements not addressed by the enforceable ADA Accessibility Guideline:

- Draft Public Rights-of-Way Accessibility Guidelines, published November 23, 2005

The "Commission on Persons with Disabilities" in the DEA should be replaced with "Disability and Communication Access Board." See the following Sections:

Section 3.2.5 ACCESS FOR PERSONS WITH DISABILITIES
Section 6.2 STATE OF HAWAII

The above reflects the Disability and Communication Access Board's advice and recommendations for the Beachwalk Wastewater Pump Station and Force Main and Ala Wai Trunk Sewer Replacement.

Should you have any further questions, please feel free to contact Mr. Gary Batcheller, Facility Access Specialist at (808) 586-8121.

Sincerely,



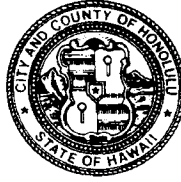
FRANCINE WAI
Executive Director

c: ✓ Mr. Chester Koga, AICP
R. M. Towill Corporation

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 07-0173

July 25, 2007

Ms. Francine Wai
Executive Director
Disability and Communication Access Board
919 Ala Moana Boulevard, Room 101
Honolulu, Hawaii 96814

Dear Ms. Wai:

Subject: Draft Environmental Assessment
Beachwalk Wastewater Pump Station, Force Main,
and Ala Wai Trunk Sewer Replacement

We would like to acknowledge your letter of June 16, 2006, and offer the following in response to comments made in your letter.

1. *The following general statement should be included in the Environmental Assessment:*

"All buildings, facilities, and sites shall conform to applicable federal, State, and county accessibility guidelines and standards. Hawaii Revised Statutes § 103-50 requires all State of Hawaii or County government buildings, facilities, and sites to be designed and constructed to conform to Americans with Disabilities Act (ADA) accessibility guidelines, the Federal Fair Housing Amendments Act, and other applicable design standards as adopted and amended by the Disability and Communication Access Board. The law further requires all plans and specifications prepared for the construction of State of Hawaii and County government buildings, facilities, and sites to be reviewed by the Disability and Communication Access Board for conformance to those guidelines and standards."

The general statement offered in your comment letter has been integrated into the Final Environmental Assessment.

2. *We strongly encourage the use of the following accessibility guideline, published by the U.S. Access Board. These accessibility guidelines are not yet enforceable by the U.S. Department of Justice under the (ADA), nor have they been adopted by state rules under Hawaii Revised Statutes § 103-50. However, the accessibility guideline provides guidance for a minimal level of accessibility for those elements not addressed by the enforceable ADA Accessibility Guideline:*
- *Draft Public Rights-of-Way Accessibility Guidelines, published November 23, 2005*

The Draft Public Rights-of-Way Accessibility Guidelines, published in November of 2005, will be referenced in the design of the proposed pump station.

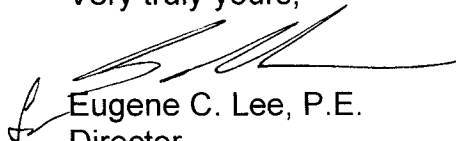
3. *The "Commission on Persons with Disabilities" in the DEA should be replaced with "Disability and Communication Access Board". See the following Sections:*

<i>Section 3.2.5</i>	<i>ACCESS FOR PERSONS WITH DISABILITIES</i>
<i>Section 6.2</i>	<i>STATE OF HAWAII</i>

Occurrences of "Commission on Persons with Disabilities" in the Environmental Assessment have been replaced with "Disability and Communication Access Board".

Should you have any questions, please contact Jay Hamai, Wastewater Division, at 768-8799.

Very truly yours,


Eugene C. Lee, P.E.
Director

c: R.M. Towill Corporation

Hawaiian Telcom ●

June 30, 2006

R.M. Towill Corporation
420 Waiakamilo Road #411
Honolulu, Hawaii 96817

Subject: Replacement of the Existing Beachwalk Wastewater Pump

Dear Mr. Chester Koga:

Thank you for the opportunity to review the above project. We have the following comments to make:

- Until a preliminary drawing can be reviewed, we are unable to say if there will be any conflicts to our existing underground facilities.
- At this time there are no scheduled underground work in the project area during the projected time of the construction of the sewer line.

Should you have any questions, please call Noel Remigio at 840-5847.

Sincerely,

Donna T. Hayashi

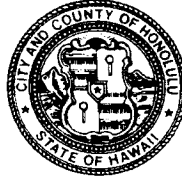
for Jill Lee
Manager – OSP Engineering, East & West Oahu

C: File (Waikiki)
N. Remigio

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 07-0172

July 25, 2007

Ms. Jill Lee, Manager
OSP Engineering, East & West Oahu
Hawaiian Telcom
1177 Bishop Street
Honolulu, Hawaii 96813

Dear Ms. Lee:

Subject: Draft Environmental Assessment Beachwalk Wastewater Pump Station,
Force Main, and Ala Wai Trunk Sewer Replacement

We acknowledge your letter of June 30, 2006, and offer the following in response to your comments.

1. *Until a preliminary drawing can be reviewed, we are unable to say if there will be any conflicts to our existing underground facilities.*

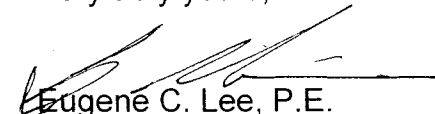
Once we have construction drawings prepared, a copy will be forwarded to you for review and comments.

2. *At this time there are no scheduled underground work in the project area during the projected time of the construction of the sewer line.*

We acknowledge that at this time, you have no scheduled underground work in the project area for the duration of the subject project.

Should you have any questions, please contact Jay Hamai, Wastewater Division, at 768-8750.

Very truly yours,

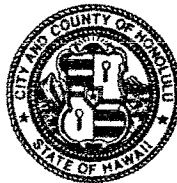

Eugene C. Lee, P.E.
Director

c: R.M. Towill Corporation

157739 #

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111
<http://www.honoluluupd.org>
www.honolulu.gov

MUF1 HANNEMANN
MAYOR



157643
ly
ww

BOISSE P. CORREA
CHIEF

GLEN R. KAJIYAMA
PAUL D. PUTZULU
DEPUTY CHIEFS

OUR REFERENCE BS-DK

June 5, 2006

TO: EUGENE LEE, DEPUTY DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: BOISSE P. CORREA, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, BEACHWALK
WASTEWATER PUMP STATION AND FORCE MAIN AND ALA WAI
TRUNK SEWER REPLACEMENT, TMK: 2-6-18: PARCEL 11

Thank you for the opportunity to review and comment on the subject project.

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

If there are any questions, please call Marie McCauley of District 6 at 529-3361 or Mr. Brandon Stone of the Executive Bureau at 529-3644.

BOISSE P. CORREA
Chief of Police

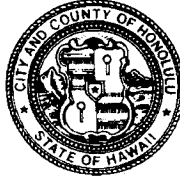
By *William Chun*
KARL GODSEY
Assistant Chief of Police
Support Services Bureau

RECEIVED
DEPT OF DESIGN & CONSTR
C & C OFFICE
06 JUN -5 AM 11:33

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR




EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 07-0179

July 25, 2007

TO: BOISSE P. CORREA, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

FROM:  EUGENE C. LEE, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: ENVIRONMENTAL ASSESSMENT FOR BEACHWALK WASTEWATER
PUMP STATION, FORCE MAIN, AND ALA WAI TRUNK SEWER
REPLACEMENT

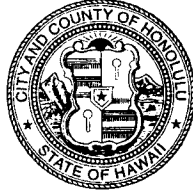
We acknowledge your letter of June 5, 2006, noting that the Police Department anticipates no impacts on the facilities or operations of the Honolulu Police Department from the proposed project.

Should you have any questions, please contact Jay Hamai, Wastewater Division, at 768-8799.

c: R.M. Towill Corporation

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 SOUTH STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 723-7139 • FAX: (808) 723-7111 • INTERNET: www.honolulufire.org



MUFI HANNEMANN
MAYOR

KENNETH G. SILVA
FIRE CHIEF

ALVIN K. TOMITA
DEPUTY FIRE CHIEF

June 16, 2006

Mr. Chester Koga, AICP
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

Dear Mr. Koga:

Subject: Draft Environmental Assessment
Replacement of the Existing Beachwalk Wastewater Pump Station,
Replacement of Beachwalk 42" Force Main, and
Replacement of the Ala Wai Trunk Sewer

In response to your letter of May 25, 2006, regarding the above-mentioned project, the Honolulu Fire Department reviewed the material you provided and has no objections.

In addition, please note that our new address is:

Honolulu Fire Department
636 South Street
Honolulu, Hawaii 96813-5007

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

Sincerely,

A handwritten signature in black ink, appearing to read "K. Silva", is written over a horizontal line.

KENNETH G. SILVA
Fire Chief

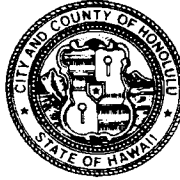
KGS/SY:jl

cc: Eugene C. Lee, Deputy Director
Department of Design and Construction

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFU HANNEMANN
MAYOR




EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 07-0177

July 25, 2007

TO: KENNETH G. SILVA, FIRE CHIEF
HONOLULU FIRE DEPARTMENT

FROM:  EUGENE C. LEE, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: ENVIRONMENTAL ASSESSMENT FOR BEACHWALK WASTEWATER
PUMP STATION, FORCE MAIN, AND ALA WAI TRUNK SEWER
REPLACEMENT

We would like to acknowledge your letter of June 16, 2006, noting that the Fire Department has no objections to the project.

Should you have any questions, please contact Jay Hamai, Wastewater Division, at 768-8750.

c: R.M. Towill Corporation