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AN EQUAL OPPORTUNITY EMPLOYER  
COUNTY OF KAUAI  
DEPARTMENT OF PUBLIC WORKS  
4444 RICE STREET  
MO'IKEHA BUILDING, SUITE 275  
LIHU'E, KAUAI, HAWAII 96766-1340

May 25, 2007

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

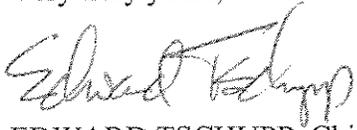
SUBJECT: FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE LIHUE  
WASTEWATER TREATMENT PLANT (WWTP) FACILITIES PLAN, TMK 4-  
3-5-001-030 AND VARIOUS TMK'S (SERVICE AREA), LIHUE, KAUAI,  
HAWAII.

Dear Ms. Salmonson:

County of Kauai, Department of Public Works, Division of Wastewater Management has reviewed the comments received during the 30-day public comment period, which began on April 8, 2007. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the next available OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form, four copies of the final EA, and the project summary on disk. Please call Bert Saito at 808-933-2864 if you have any questions.

Very truly yours,

  
EDWARD TSCHUPP, Chief  
Wastewater Management Division

CONCUR:

  
DONALD M. FUJIMOTO  
County Engineer

Attachments

cc: Bert Saito, M&E Pacific

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**ENVIRONMENTAL ASSESSMENT**

**JUN 8 2007**

**LIHUE WASTEWATER TREATMENT PLANT  
FACILITIES PLAN**

**Lihue, Hawaii**

**TMK:**

**Wastewater Treatment Plant: (4)-3-5-001-030**

**Wastewater Treatment Plant Service Area: various**

**Prepared for:**

**County of Kauai  
Department of Public Works  
Division of Wastewater Management  
4444 Rice Street, Suite 500  
Lihue, Kauai, Hawaii 96766**

**Prepared by:**

**M&E Pacific, Inc.  
METCALF&EDDY | AECOM  
100 Pauahi Street, Suite 207  
Hilo, Hawaii 96720**

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Acronyms and Abbreviations

ADWF	Average Dry Weather Flow
BMP	Best Management Practice
BOD	5-day biochemical oxygen demand
CDP	Census Designated Place
cf	Cubic Foot
CFR	Code of Federal Regulations
CIP	Cast Iron Pipe
CWA	Federal Clean Water Act
CWB	State Department of Health, Clean Water Branch
CWRM	State Commission on Water Resource Management
CZM	State Coastal Zone Management
CZMA	Federal Coastal Zone Management Act
DAFT	Dissolved Air Floatation Thickener
DAGS	State Department of Accounting and General Services
DBEDT	State Department of Business, Economic Development and Tourism
DIP	Ductile Iron Pipe
DLNR	State Department of Land and Natural Resources
DOH	State Department of Health
DOT	State Department of Transportation
EA	Environmental Assessment
EQ	Equalization
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
gad	Gallons per acre per day
gpcd	Gallons per capita per day
gpd	Gallons per day
gpm	Gallons per minute
HAR	Hawaii Administrative Rules
HDPE	High Density Polyethylene
HEPA	Hawaii Environmental Policy Act
HRS	Hawaii Revised Statutes
I/I	Infiltration and Inflow
M&E	M&E Pacific, Inc.
mg/L	Milligrams per liter
mgd	Million gallons per day

NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
OEQC	State Office of Environmental Quality Control
OHA	State Office of Hawaiian Affairs
OSHA	Occupational Safety and Health Act
PVC	Polyvinyl Chloride
PWWF	Peak Wet Weather Flow
SAAQS	State Ambient Air Quality Standards
SMA	Special Management Area
SRF	State Revolving Fund
SS	Stainless Steel
TMK	Tax Map Key
UIC	Underground Injection Control
USEPA	United States Environmental Protection Agency
UV	Ultraviolet
VCP	Vitrified Clay Pipe
WWPS	Wastewater pump station
WWTP	Wastewater treatment plant

**1.0 PROJECT SUMMARY**

**1.1 BACKGROUND**

**Project Name:** Lihue WWTP Facilities Plan

**Approving Agency:** Department of Public Works, Division of Wastewater Management  
County of Kauai  
4444 Rice Street, Suite 500  
Lihue, Kauai, Hawaii 96766

**Contact Person:** Mr. Edward Tschupp, P.E. Division of Wastewater Management  
Chief

Phone: (808) 241-6610 Fax: (808)241-6589

**Location:** Lihue, HI

**Lihue WWTP Service Area:**

**TMK Designation:** Fourth District, Third Zone, Second Section  
Fourth District, Third Zone, Fifth Section  
Fourth District, Third Zone, Sixth Section  
Fourth District, Third Zone, Seventh Section  
Fourth District, Third Zone, Eighth Section

**Property Owner:** various

**State Land Use  
Classification:** various

**County Zoning:** various

**Lihue WWTP:**

**TMK Designation:** Fourth District, Third Zone, Fifth Section, First Plat, Thirtieth  
Parcel

**Property Owner:** County of Kauai

**State Land Use  
Classification:** Urban

**County Zoning:** Agriculture

**Applicant Agent:** M&E Pacific, Inc

100 Pauahi Street, Suite 207  
Hilo, Hawaii 96720  
Contact: Bert Saito, P.E.  
Phone: (808)961-2776 Fax: (808)935-5934

Proposed Action: The proposed action involves expanding the collection system, upgrading the existing Lihue Wastewater Treatment Plant, and upgrading and expanding the effluent disposal system.

Determination: Finding of No Significant Impact (FONSI)

## 1.2 OVERVIEW OF PROPOSED PROJECT

The County of Kauai, Department of Public Works (DPW), Division of Wastewater Management has contracted M&E Pacific, Inc. (M&E), to prepare a wastewater facilities plan for Lihue WWTP in accordance with the Hawaii Administrative Rules (HAR), Title 11, Chapter 62, *Wastewater Systems*<sup>1</sup>.

According to *Wastewater Systems*<sup>2</sup>, "for public wastewater treatment works a facility plan shall be initiated when the actual wastewater flow reaches 75 percent of the design capacity of the treatment works." *Wastewater Systems*<sup>3</sup> also states, "Implementation of the recommendation of the facility plan shall be initiated when the actual wastewater flow reaches 90 percent of the design capacity of the wastewater treatment works."

The current average dry weather flow is 1.25 mgd, which is greater than 75 percent of the existing Lihue WWTP disposal capacity of 1.5 mgd. The wastewater system capacity will increase to 2.2 mgd when the State of Hawaii, Department of Health (DOH) Underground Injection Control (UIC) Program permits the use of the six (6) newly modified injection wells.

Although 1.25 mgd is only 60 percent of the 2.2 mgd, the County is proceeding with the facilities plan because future residential and commercial developments within Lihue are expected to generate wastewater flows that will exceed the 2.2 mgd capacity of the Lihue wastewater system. The facilities plan consists of a projected wastewater flow up to the year 2025 in five-year increments, and evaluation and improvements to the Lihue wastewater collection and transmission system, the Lihue Wastewater Treatment Plant, and the effluent reuse and disposal facilities. The County will complete the various improvements identified in the facilities plan in several projects during the next twenty years.

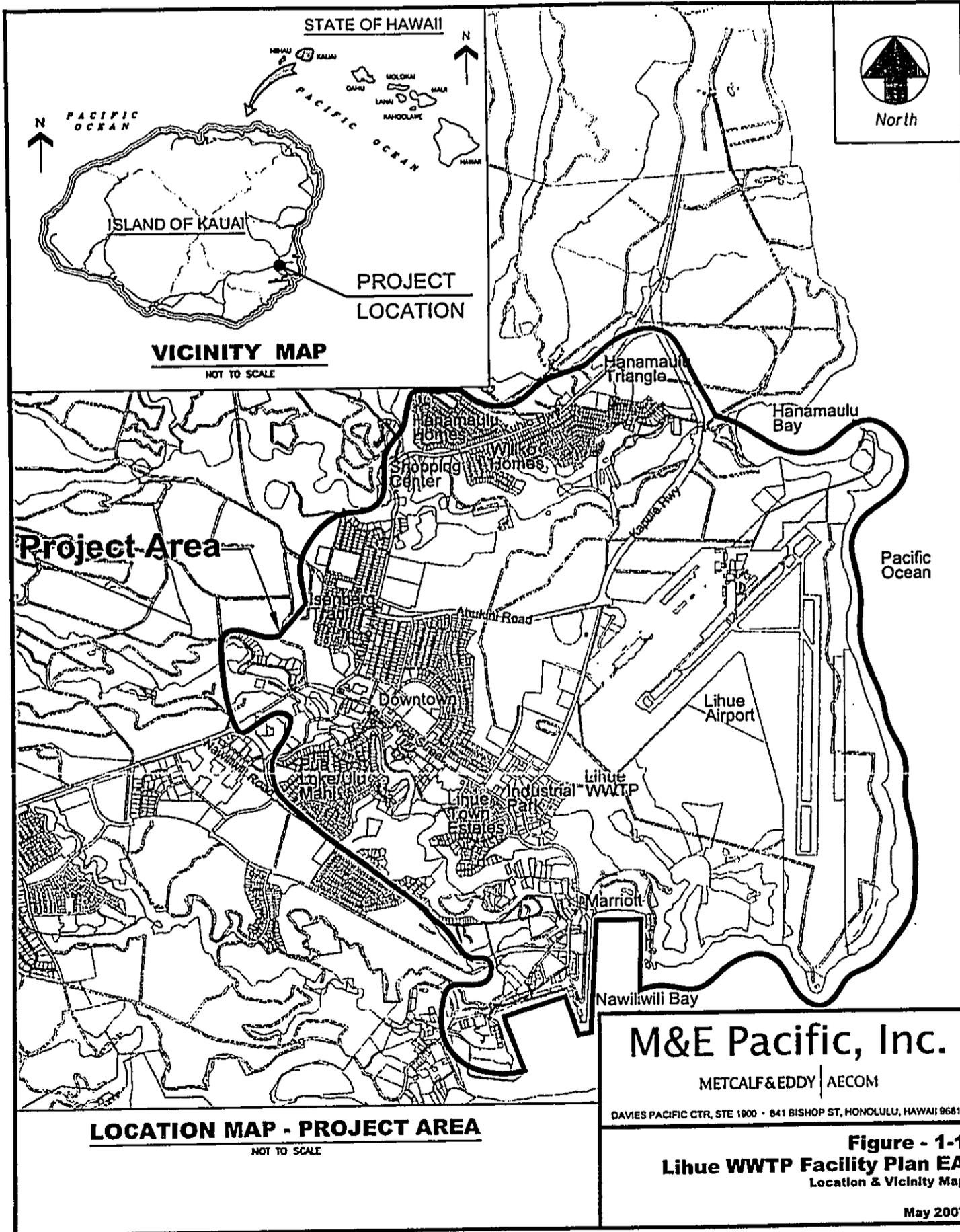
<sup>1</sup> State of Hawaii, Department of Health, Title 11, Chapter 62, *Wastewater Systems in Hawaii Administrative Rules (2004)*.

<sup>2</sup> *ibid*

<sup>3</sup> *ibid*

The Lihue WWTP service area include the area bordered by Nawiliwili Road to the South, the Pacific Ocean to the East, Hanamaulu Triangle to the North, and Isenberg Tract residential subdivision to the West. See Figure 1-1.

The improvement projects may be funded by Federal Funds through the State of Hawaii's Clean Water State Revolving Fund (SRF) Program, which constitute Federal action and will require the project to meet all National Environmental Policy Act (NEPA) and Hawaii SRF program requirements.



### 1.3 REQUIRED PERMITS AND CLEARANCES

Various County of Kauai and State of Hawaii permits, approvals and clearances are required for the recommended improvements. These items include the following types:

- Plan Approval
- NPDES Stormwater, Construction Dewatering, Hydrotesting Permits
- Underground Injection Control (UIC) Permit
- Building Permits
- Grading Permits
- Excavation Permit
- Pressure Vessel and Boiler Permit
- Fuel Storage Tank Permit
- Wastewater Management Permit

Design approval from DOH is required prior to any improvements to the existing wastewater facility. The permit application must be completed and approved prior to the startup of any wastewater improvements.

### 1.4 PURPOSE OF THE ENVIRONMENTAL ASSESSMENT

This Environmental Assessment (EA) is prepared pursuant to Chapter 343 of the Hawaii Revised Statutes (HRS), *Environment Impact Statements*<sup>4</sup> and HAR Title 11, Chapter 200, *Environmental Impact Statement Rules*<sup>5</sup>. This document will serve as a written evaluation of the potential physical and social effects on the environment by the proposed project, as well as, mitigated measures wherever necessary.

<sup>4</sup> State of Hawaii, Chapter 343, *Environmental Impact Statements in Hawaii Revised Statutes* (2001).

<sup>5</sup> State of Hawaii, Department of Health, Title 1, Chapter 200, *Environmental Impact Statement Rules in Hawaii Administrative Rules* (2006).

## **2.0 PROJECT DESCRIPTION & ALTERNATIVES CONSIDERED**

### **2.1 DESCRIPTION & BACKGROUND**

In accordance with the State Department of Health (DOH), Chapter 11-62, *Wastewater Systems*<sup>6</sup>, a wastewater facility plan is required when the actual wastewater flow reaches 75 percent of the overall system capacity.

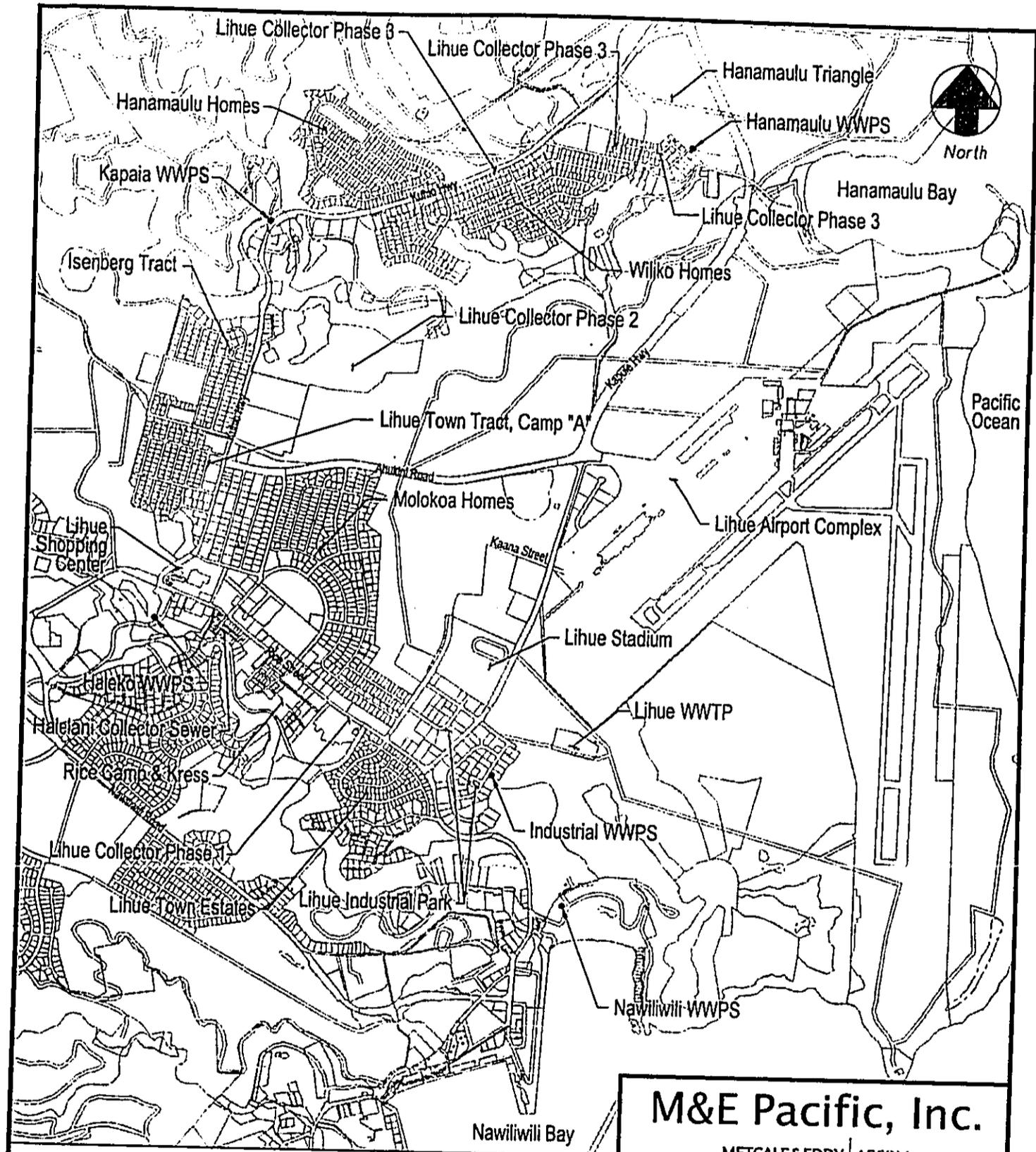
The current daily average flow of 1.25 mgd is 87 percent of the current capacity of the Lihue Municipal Wastewater System, which is 1.5 mgd. Currently, the limiting factor for the existing WWTP is the effluent disposal system, which includes 1.5 mgd for reuse at the Kauai Lagoons Golf Course and two backup injection wells. Six newly modified injection wells are awaiting approval for use from DOH. The estimated wastewater system capacity after the injection wells are approved is 2.2 mgd. Although 1.25 mgd is only 60% of the 2.2 mgd, the County is proceeding with this project because future residential and commercial developments within Lihue are expected to generate wastewater flows that will exceed the estimated 2.2 mgd capacity of the Lihue wastewater system.

The Lihue WWTP Facilities Plan includes the area bordered by Nawiliwili Road to the South, the Pacific Ocean to the East, Hanamaulu Triangle to the North, and Isenberg Tract residential subdivision to the West (see Figure 2-1). The areas southwest of Nawiliwili Road, which include Pua Ko and Ulu Ko Subdivisions, Kukui Grove Shopping Center, and surrounding areas are unsewered or sewerred by the privately owned Grove Farm WWTP.

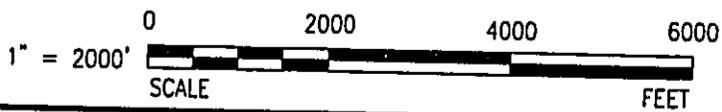
Key existing developments within the Lihue Project Area include the Lihue Airport, County of Kauai and State Offices, downtown Lihue, Wilcox Memorial Hospital, Wilcox Elementary School, King Kaumualii Elementary School and the multiple residential areas.

The general layout of the Lihue Wastewater System is shown in Figure 2-1. The existing system consists of gravity sewer line that goes from Hanamaulu to Nawiliwili, five County operated wastewater pump stations (WWPS), and one wastewater treatment plant. Effluent is currently disposed at the Kauai Lagoon Resorts golf courses. The digested and dewatered waste sludge is disposed at a municipal landfill.

<sup>6</sup> State of Hawaii, Department of Health, Title 11, Chapter 62, *Wastewater Systems in Hawaii Administrative Rules (2004)*.



**General Plan of the Existing Wastewater System**



**M&E Pacific, Inc.**

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**Figure - 2-1**  
**Lihue WWTP Facility Plan EA**  
General Plan Of The Existing Wastewater System

May 2007

## **2.2 PROJECT TECHNICAL DESCRIPTION**

The Lihue Wastewater Facilities Plan considered the following proposed future developments: Hanamaulu Triangle, Kauai Lagoons Resort, Molokoa Homes 2, Lihue Mill Complex, Ahukini Mauka, Ahukini Makai, and land north of Ahukini Makai. Since the County of Kauai, Department of Planning has not approved the majority of these developments; the timeline for their implementation is only an estimate. Due to the uncertainty of the future long-term developments within Lihue, the recommendations for the Lihue Wastewater Facilities Plan will be organized as follows: short-term, 2005 to 2010 (includes developments that have received tentative approval from the County of Kauai), mid-term, 2010 to 2015, and long-term, 2015 to 2025. This project will expand and upgrade the existing wastewater system.

To expand the existing WWTP capacity, the existing effluent disposal must be expanded because pending the permitting of the recently completed six additional effluent disposal wells, the effluent disposal is the limiting factor for the Lihue Wastewater System. The Airport has expressed interest in using R-1 recycled water for irrigation of the airport runway. More grass around the airport will reduce bird attraction.

### **2.2.1 EXISTING**

The existing wastewater system is limited by the effluent disposal capacity, which is 1.5 mgd. When the six new injection wells go online, the wastewater system capacity will increase to 2.2 mgd for the average dry weather flow (ADWF) and 5.5 mgd for the peak wet weather flow (PWWF). The WWTP design capacity is 2.5 mgd with a PWWF of 6.25 mgd. The Lihue service area includes residential subdivisions and commercial properties along Kapule Highway, Kuhio Highway, Ahukini Road, and Rice Street (see Figure 2-1).

### **2.2.2 SHORT-TERM (2005-2010)**

The short-term ADWF and PWWF are estimated to be 1.6 mgd and 5.9 mgd, respectively using population projections. New developments entering the Lihue Wastewater System include Hanamaulu Triangle and Kauai Lagoons.

Hanamaulu Triangle (TMK: 3-7-03: 20) will be developed into single and multi-family residential units. This area already has appropriate zoning. Kauai Lagoons Resort (TMK: 3-5-01: 119) will be developed into a resort community. This property will include condo/time share units, hotel units, and single-family residences. This development also incorporates affordable housing to be developed on TMK: 3-5-01: 27.

The estimated construction cost of the short-term WWTP is \$38 million, which includes rerouting the Hanamaulu WWPS force main on Kapule Highway, fine screens, aeration system modifications, membranes, UV disinfection, blower room modifications, mixed liquor pump station, sludge handling building, sludge dewatering units, and an equalization (EQ) basin.

### 2.2.2.1 Pretreatment

A grease reduction program is recommended for the Lihue wastewater system. A successful grease reduction program can experience the following payback:

1. Reduce grease buildup in the wastewater pump stations and collection system.
  - a. Reduce odors and corrosion potential at the WWPS and in the gravity sewers.
  - b. Reduce time spent cleaning and removing blockages. More time can be spent on inspections and enforcement.
2. Reduce the influent organic loading to the WWTP and gain extra reserve capacity in the WWTP due to the reduction of organic pollutants when grease is removed at the source.

A corrosion study is recommended to determine which sewer manholes need replacement or a new lining or coating. The corrosion study includes measurement of concrete erosion inside of the sewer manholes, measurement of sulfide gas in sewer manholes, measurement of dissolved sulfide in the wastewater, and measurement of flow rate in the sewers.

### 2.2.2.2 Collection System

According to calculations based on the County of Kauai *Sewer Design Standards*<sup>7</sup>, the collection system does not have reserve capacity for the Hanamaulu Triangle Development wastewater flow.

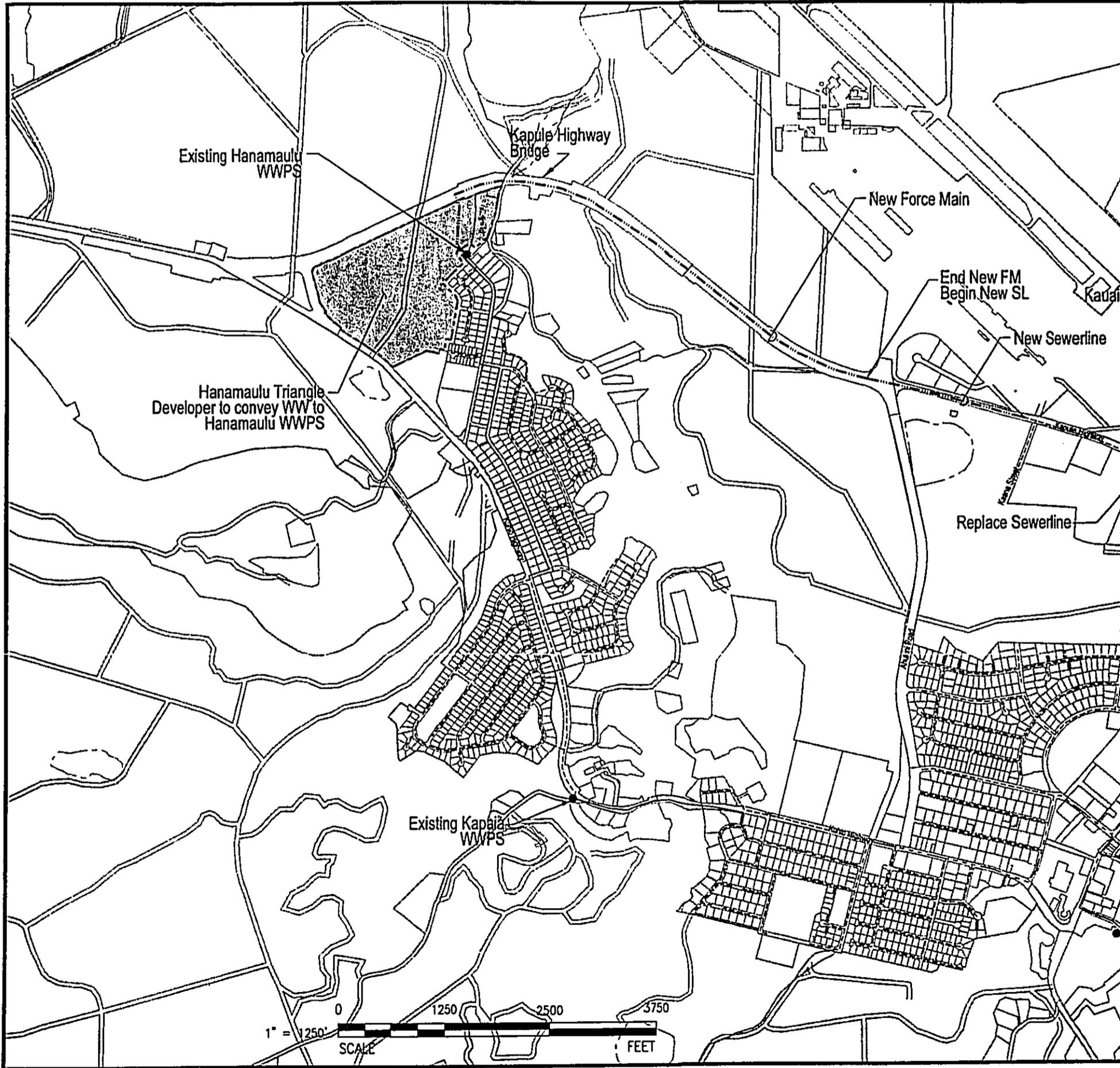
An Infiltration and Inflow (I/I) Study is currently being conducted to determine if the actual PWWF is lower than the calculated PWWF using the County of Kauai *Sewer Design Standards*. The County of Kauai *Sewer Design Standards* calculates wet weather I/I using 2750 gallons per acre per day (gad) for sewers laid below the normal ground water table and 1250 gad for sewers laid above the normal ground water table. The County of Kauai *Sewer Design Standards* can result in an over designed (costly) or an under designed (wastewater spills, also costly) facility.

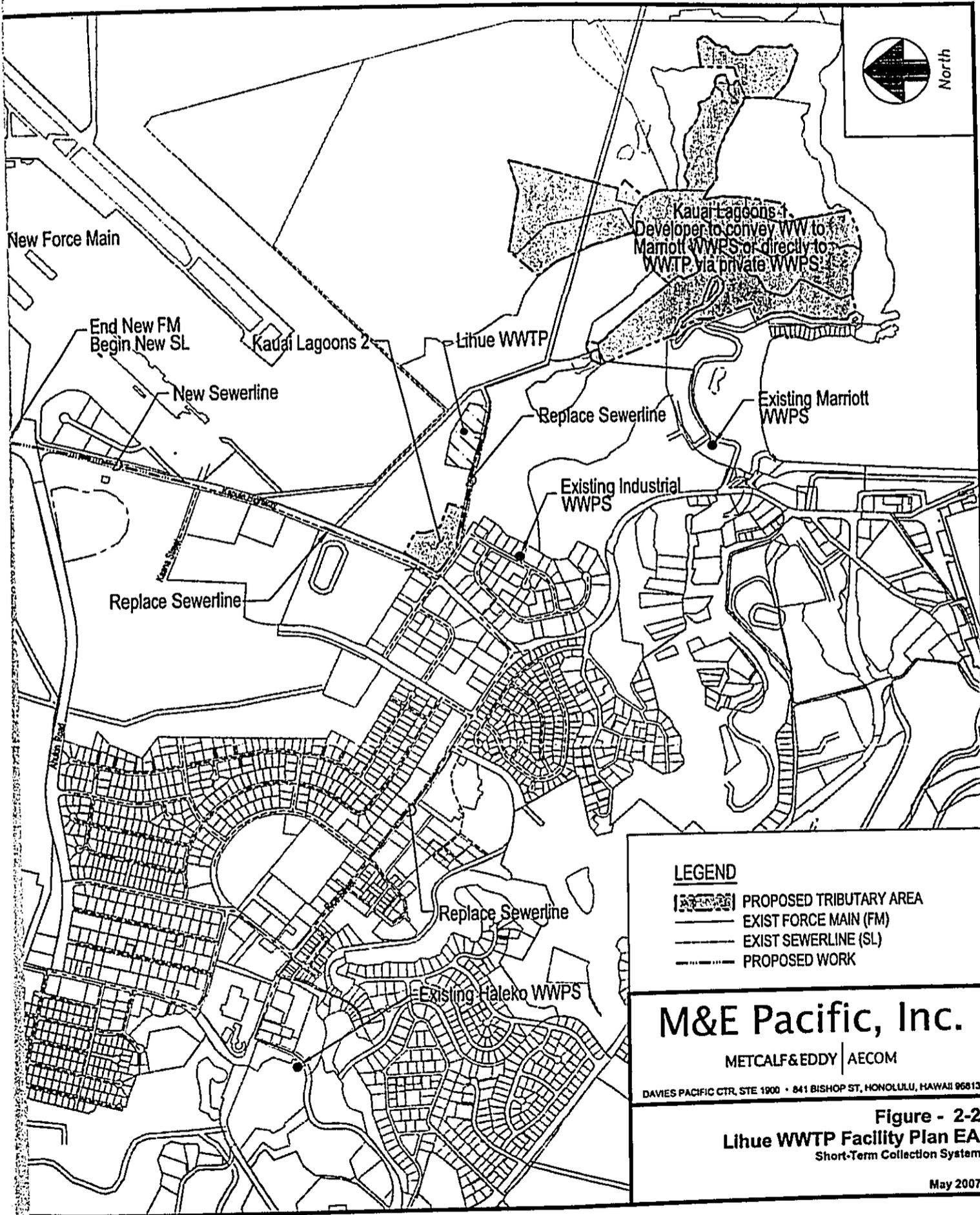
If the I/I study verifies that the existing collection system does not have reserve capacity, the Hanamaulu WWPS flow is rerouted to the Lihue WWTP via Kapule Highway to minimize construction through town.

#### Recommended work:

1. Reroute Hanamaulu WWPS flow to the Lihue WWTP via Kapule Highway.
  - a. New Hanamaulu WWPS force main to be laid in the shoulder of Kapule Highway. Size and length will be determined during the final design.
  - b. New sewer line on Kapule Highway. Size and length will be determined during the final design.
  - c. New pumps at Hanamaulu WWPS as determined necessary during final design.
2. Replace sewer lines as determined necessary during the final design. Pipeline sizing and alignment will ultimately be determined during the final design stage.

<sup>7</sup> County of Kauai, Department of Public Works, *Sewer Design Standards* (1973).





**LEGEND**

-  PROPOSED TRIBUTARY AREA
-  EXIST FORCE MAIN (FM)
-  EXIST SEWERLINE (SL)
-  PROPOSED WORK

---

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**Figure - 2-2**  
**Lihue WWTP Facility Plan EA**  
 Short-Term Collection System

May 2007

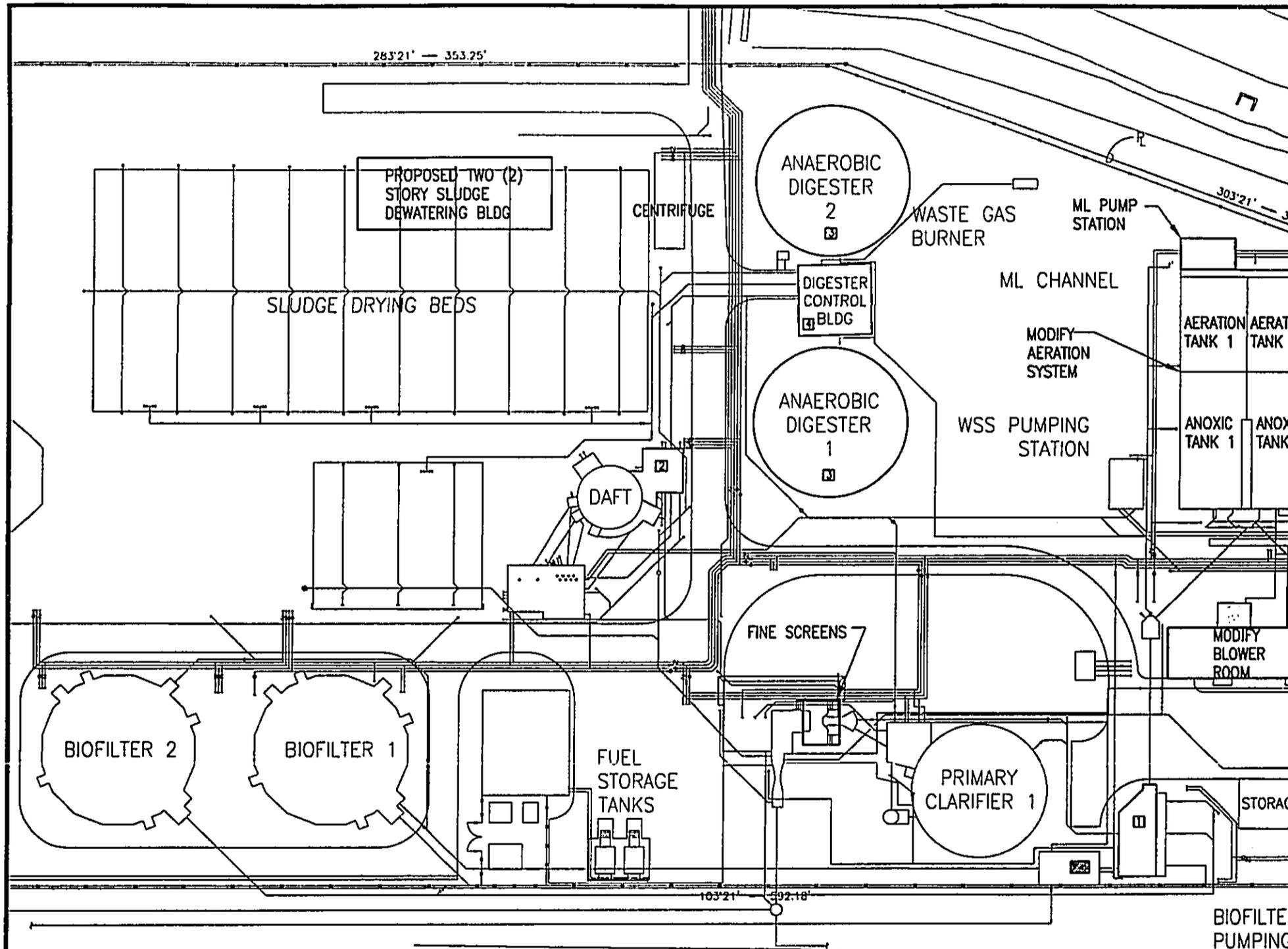
### 2.2.2.3 Wastewater Treatment Plant

The WWTP is designed to handle an ADWF of 2.5 mgd and a PWWF 6.25 mgd. The WWTP has reserve capacity of 0.9 mgd and 0.35 mgd for the ADWF and PWWF, respectively. The short-term improvements are dominated by repair and replacement projects and to upgrade the WWTP to produce R-1 quality recycled water. R-1 recycled water can be used for landscaping, irrigation, flushing toilets and urinals, fire fighting, industrial boiler feed, and other non-potable water uses.

The following items are recommended:

1. Investigate and mitigate differential settlement problems at the WWTP.
  - a. Some plant processes have been rendered inoperable or have experienced major repair due to differential settlement.
  - b. Settlement of the ground is causing leaks in the aeration piping, which reduces aeration efficiency and increases electrical consumption.
  - c. Drainage inside the WWTP and from the surrounding golf course area must be reevaluated. Runoff and poor soils are the suspected cause of the settlement.
2. Repair or replace biofilter recirculation pump that is out of service.
3. Replace thickened sludge pumps at the dissolved air floatation thickener (DAFT).
4. Replace or realign anaerobic digester gas piping away from motor control center, this will reduce the explosion hazard. This project is currently under construction.
5. Clean anaerobic digesters and inspect the inside of the floating steel covers for corrosion. Digester cleaning is recommended by DOH every 10 years. This project is currently under construction.
6. Replace aeration system due to leaking underground piping and replace the coarse bubble diffusers to more efficient fine bubble diffusers.
7. Replace or repair all flow meters.
8. Install a Membrane Bioreactor (MBR) to replace the secondary clarifier and sand filters. The membranes may be installed in the existing secondary clarifier structures or be installed in a new but separate structure. The MBR is designed to satisfy DOH most stringent effluent requirements, which are designated as R-1 water. The MBR is a proven technology that produces reliable recycled water.
  - a. Although not a DOH requirement, a biological nutrient removal system is recommended since algal blooms have been observed in the Kauai Lagoons effluent ponds.
  - b. Replace existing headwork screens with fine screens to remove solid particles greater than 2 mm to 3 mm in diameter.
  - c. MBR type, size, requirements, and configuration will be determined during the final design stage.
9. Install Ultraviolet light (UV) disinfection.
  - a. The UV system may be placed into the existing chlorine contact tank or be installed in a new but separate structure.
  - b. A small amount of liquid bleach, sodium hypochlorite, will be required to prevent the re-growth of algae and bacteria within Kauai Lagoon Resort's golf course irrigation system and aid in scum control within the plant. The chlorination system will consist of a 500-gallon, or less, storage tank and necessary feed pumps and controls.

- c. The UV system type, size, requirements, and configuration will be determined during the final design stage
- 10. New sludge dewatering facilities.
- 11. Install an equalization (EQ) basin upstream of the existing headworks to dampen the PWWF throughout the WWTP.
  - a. The EQ basin will be sized to handle the long-term PWWF.
  - b. The flow entering the headworks will be limited to the pump out rate of the EQ basin.
  - c. The pump rate will be determined during the final design.

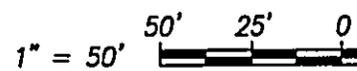


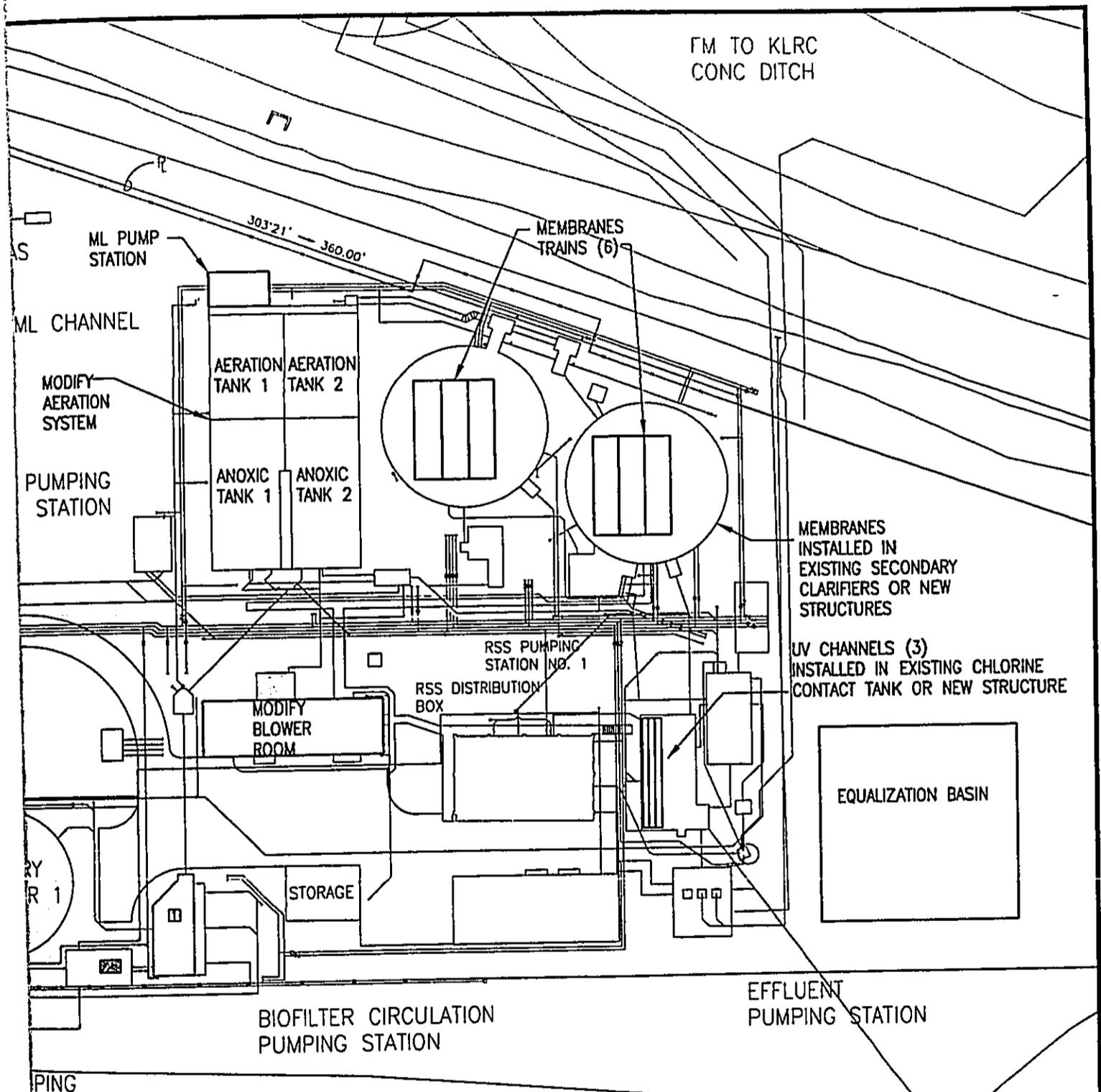
# Short-Term WWTP

SCALE: 1:50

LEGEND:

1. BIOFILTER RECIRC PUMP REPLACEMENT
2. TMS SLUDGE PUMP CAVITATION REPAIR
3. FLOATING COVER INSPECTION
4. RE-ROUTE DIGESTER GAS





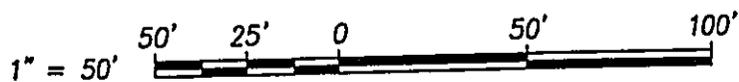
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**Figure - 2-3**  
**Lihue WWTP Facility Plan EA**  
 Short-Term Lihue WWTP

May 2007



#### 2.2.2.4 Effluent Disposal System

The existing effluent disposal system has a capacity of 1.5 mgd, with a PWWF of 3.75 mgd. After the six (6) new injection wells are placed into service, the effluent disposal capacity will increase to 2.2 mgd with a PWWF of 5.5 mgd. Since the short-term estimated PWWF is 5.9 mgd, the effluent disposal system would require expansion of an additional 0.4 mgd, but the EQ basin will dampen the PWWF. Therefore, no work is needed for the short-term.

#### 2.2.3 MID-TERM (2010-2015)

The mid-term flow is projected to include additional flow from projects such as Molokoa Homes 2 (TMK: 3-6-02:01, 17, & 23) and Lihue Mill developments (3-6-8: 07 & 3-8-5: 09). The Molokoa Homes 2 property has been developed partly with the recent addition of the County's Police Station, Bus Facilities, and Judiciary Complex. Plans for this area include some commercial development, single and multi-family homes, and a 9.5-acre park. There are no official plans for the Lihue Mills Complex. Preliminary discussions have indicated various plans for affordable housing, recreational facilities, office space, a business hotel, and commercial uses.

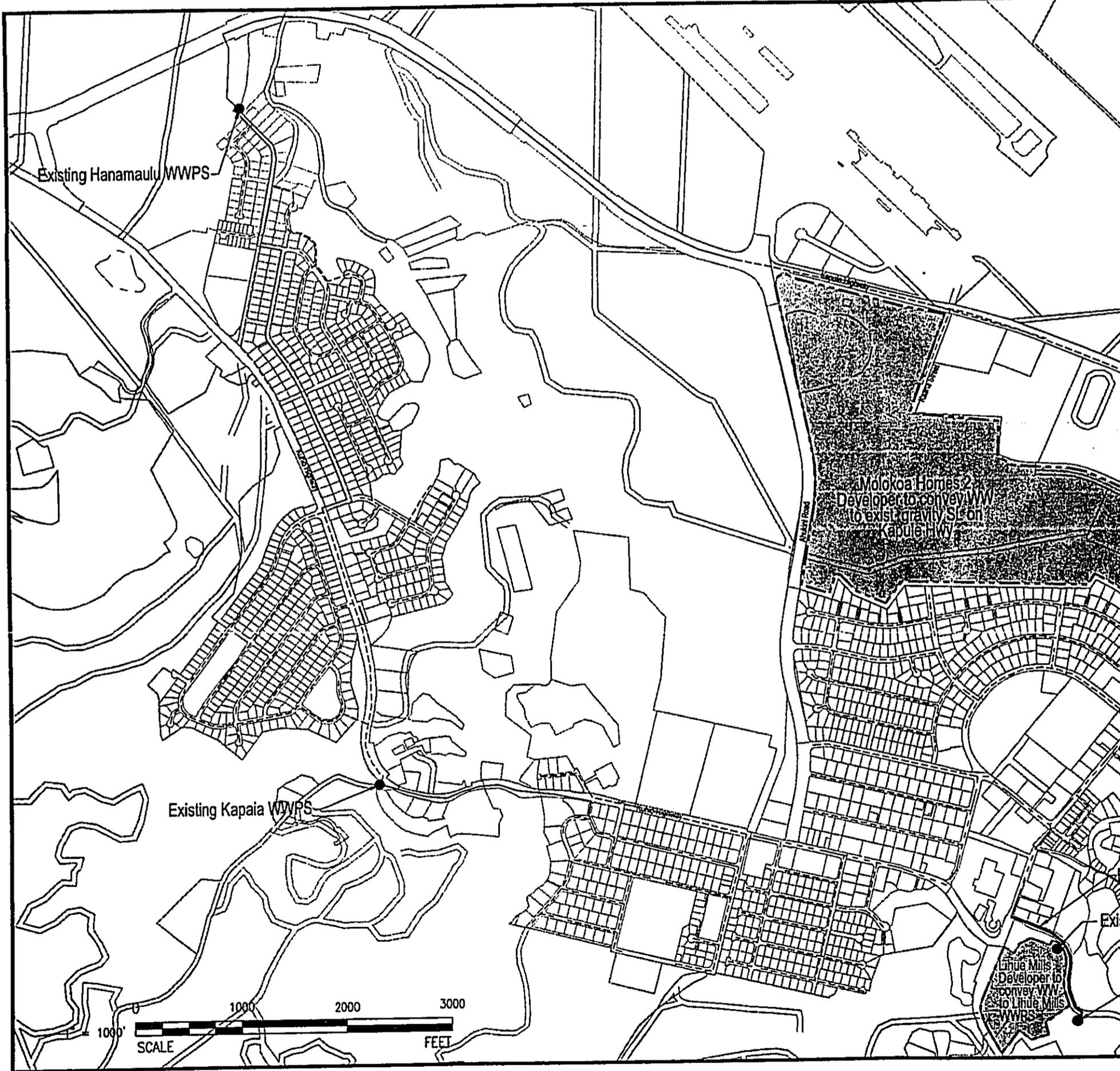
During this period, the estimated ADWF will increase to 2.0 mgd and the estimated PWWF will be 7.3 mgd. The estimated mid-term construction cost is expected to be \$1.5 million. The mid-term construction includes replacing the Haleko WWPS and force main.

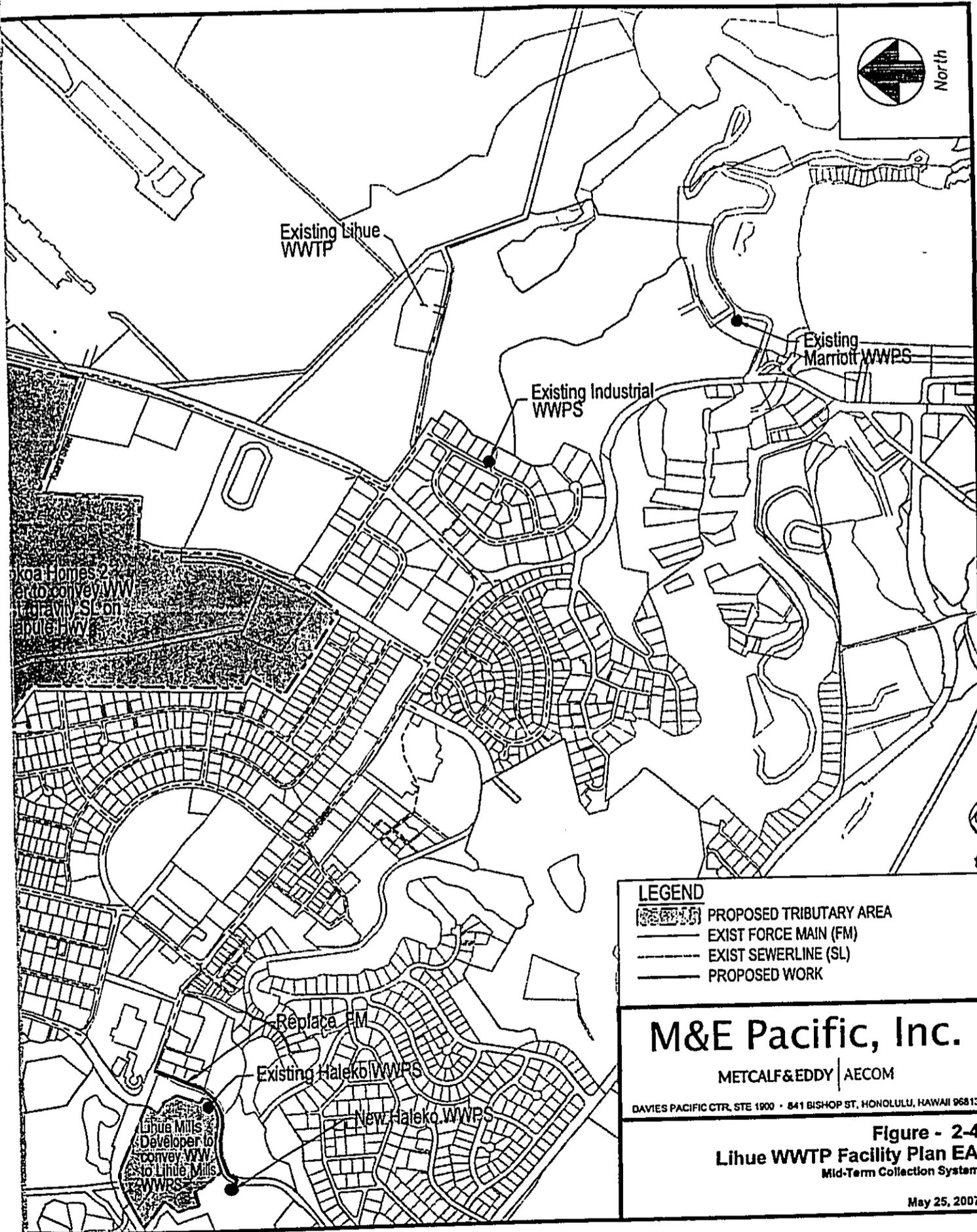
##### 2.2.3.1 Collection System

The existing Haleko WWPS does not satisfy the *Sewer Design Standards*<sup>8</sup> and does not have pumping capacity to satisfy mid-term projected wastewater flows. With the Lihue Mill development, the existing Haleko WWPS should be replaced with a new Haleko WWPS that satisfies the *Sewer Design Standards*<sup>9</sup>. The existing force main will be replaced as determined necessary during the design. The WWPS and pipeline type, size and configuration will be determined during the final design.

<sup>8</sup> County of Kauai, Department of Public Works, *Sewer Design Standards (1973)*.

<sup>9</sup> *ibid*





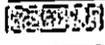
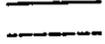
Existing Lihue WWTP

Existing Marriott WWPS

Existing Industrial WWPS

Koa Homes 2  
er to convey WW  
gravity SL on  
Hwy

**LEGEND**

-  PROPOSED TRIBUTARY AREA
-  EXIST FORCE MAIN (FM)
-  EXIST SEWERLINE (SL)
-  PROPOSED WORK

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**Figure - 2-4**  
**Lihue WWTP Facility Plan EA**  
Mid-Term Collection System

May 25, 2007

Replace FM

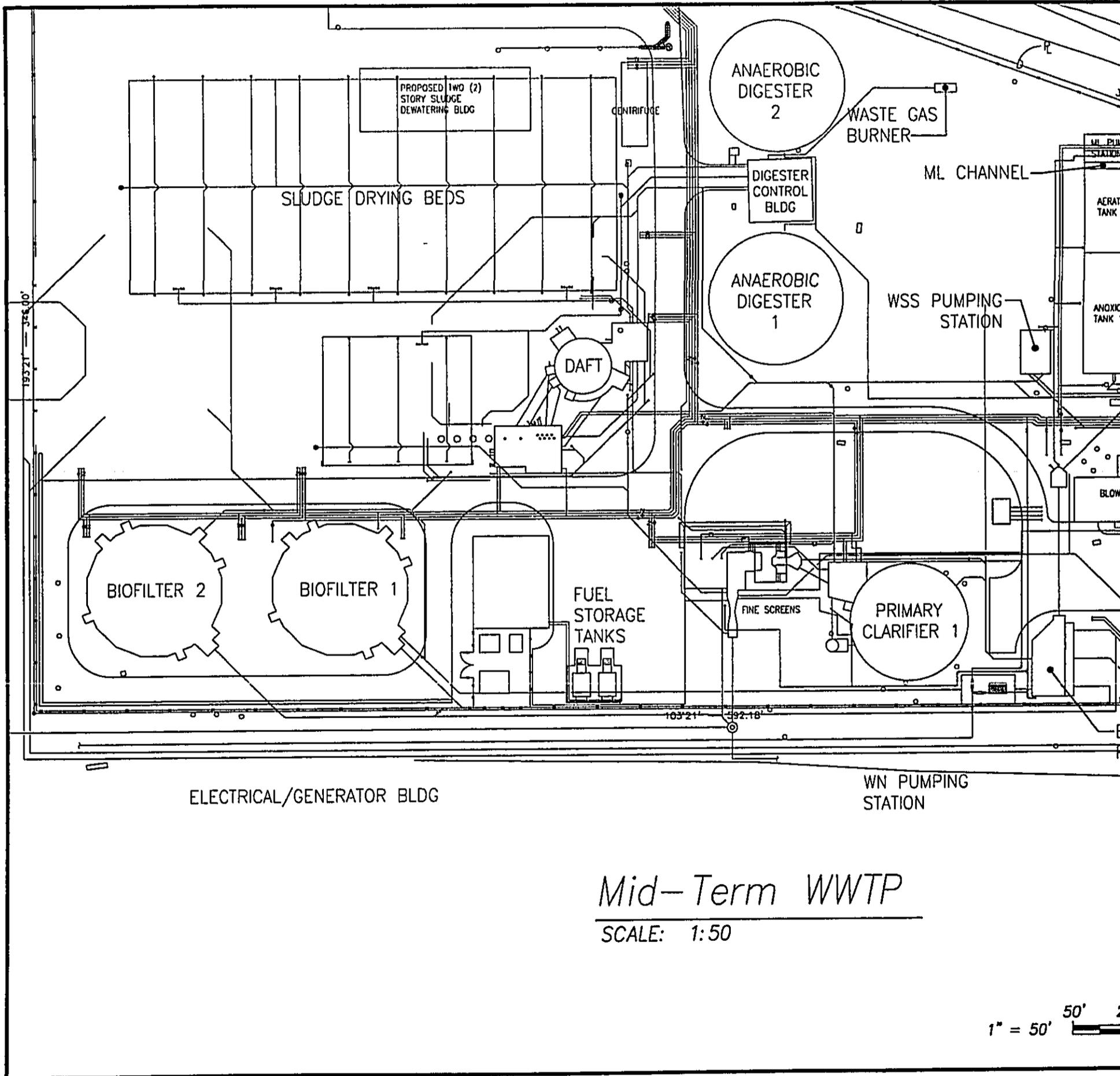
Existing Haleko WWPS

New Haleko WWPS

Lihue Mills  
Developer to  
convey WW  
to Lihue Mills  
WWPS

**2.2.3.2 Wastewater Treatment Plant**

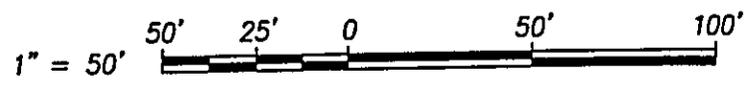
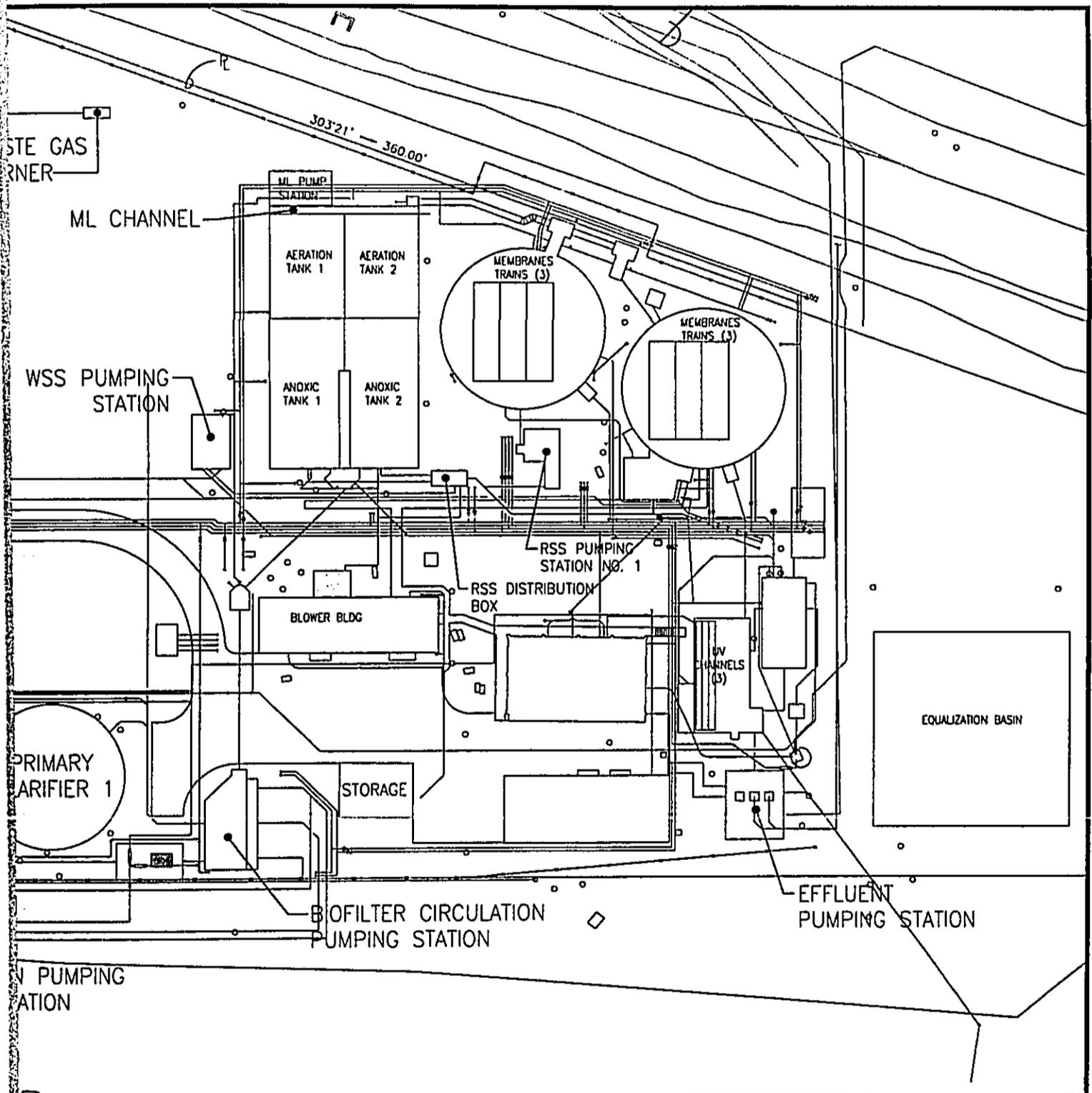
No construction is required during the mid-term. The EQ basin in the short-term will be designed to handle mid-term flows.



*Mid-Term WWTP*

SCALE: 1:50

1" = 50' 50'



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**Figure - 2-5**  
**Lihue WWTP Facility Plan EA**  
 Mid-Term Lihue WWTP

May 2007

### 2.2.3.3 Effluent Disposal System

No additional disposal is necessary since the EQ basin will be designed for the mid-term peak flow.

### 2.2.4 LONG-TERM (2015-2025)

The developments and subdivisions included in the long-term flow projections are Ahukini Mauka, Ahukini Makai and existing unsewered areas. Ahukini Mauka and Ahukini Makai are expected to be constructed between 2015 to 2020 and 2020 to 2025, respectively. The Ahukini Mauka development (TMK: 3-7-01: 01 & 3-7-02: 12) includes single and multi-family housing, commercial, industrial, an elementary school, and a 13.7-acre park. The Ahukini Makai development (TMK: 3-7-02: 01) is for industrial use, including activities compatible with aviation.

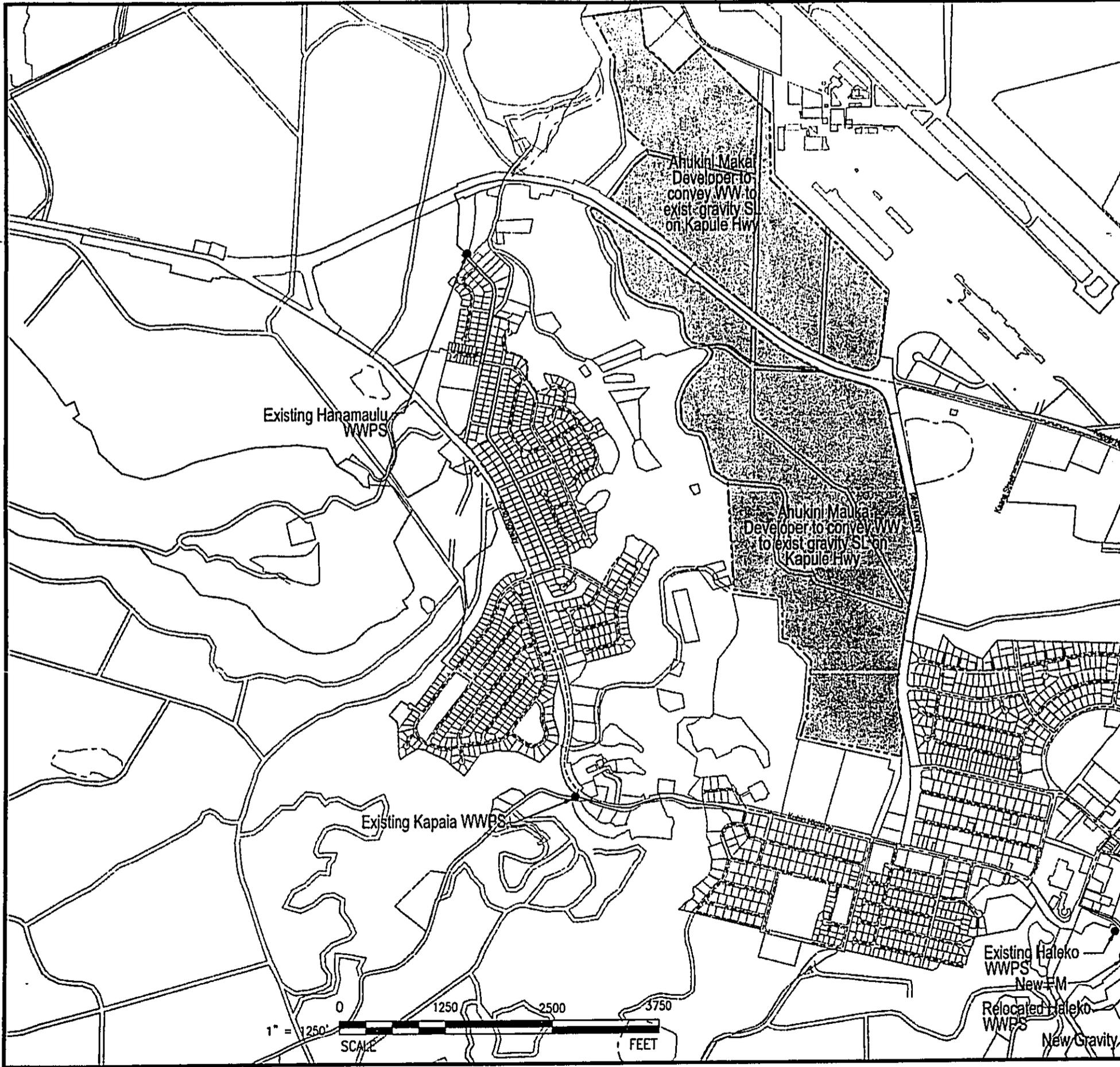
During this period, the ADWF and PWWF will be approaching 3 mgd and 11 mgd, respectively. The long-term construction cost is estimated to be \$32 million. The construction cost includes expansion of the existing collection system, expansion of the existing WWTP (control, maintenance, and locker room building, DAFT, and primary clarifier), and expansion of the effluent disposal system.

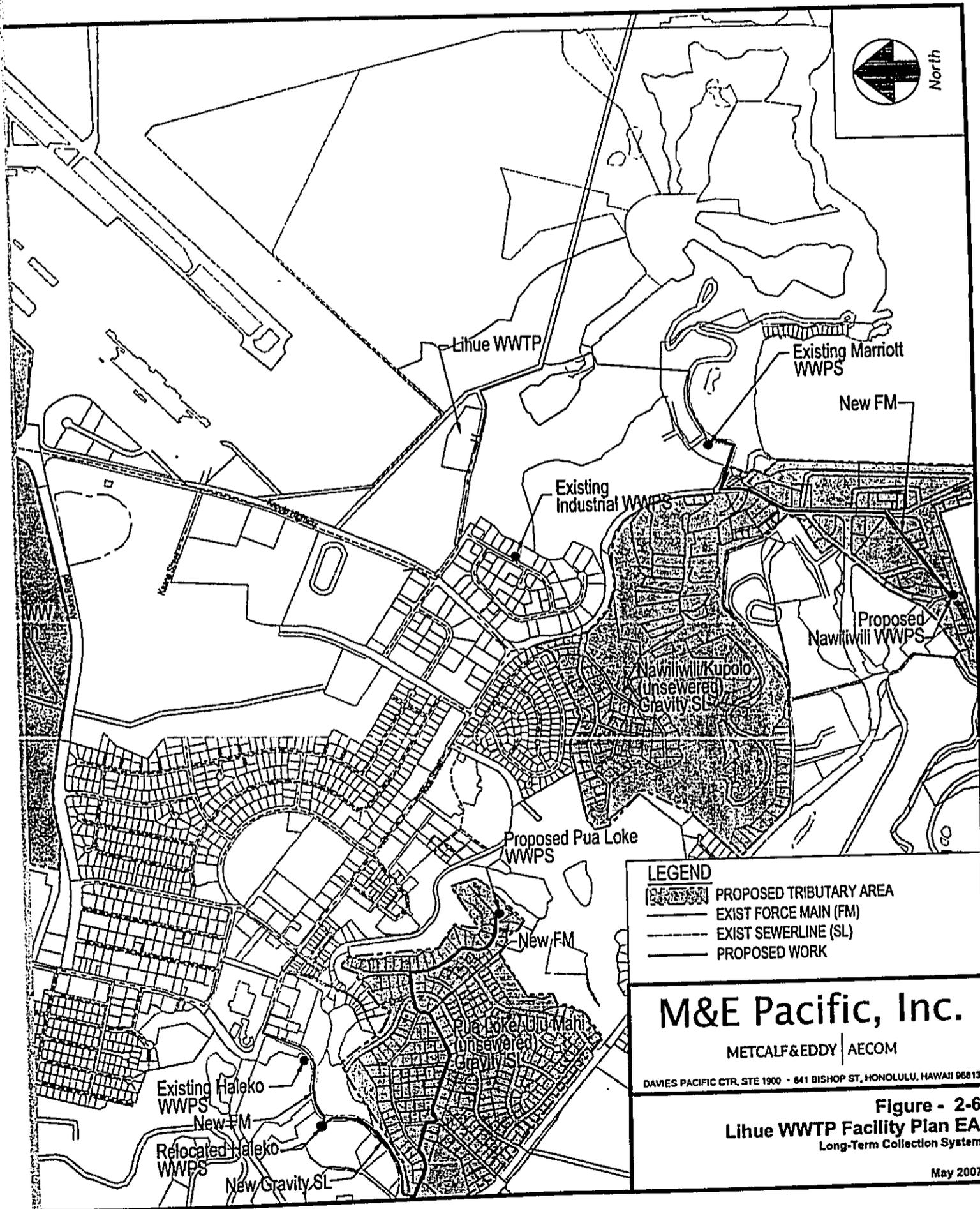
#### 2.2.4.1 Collection System

The following improvements are needed for the long-term collection system:

1. Sewer unsewered areas.
  - a. Kapaia (several parcels near the Kapaia WWPS).
  - b. Pua Loke and Ulu Mahi.
  - c. Nawiliwili and Kupolo.
2. Nawiliwili WWPS.
  - a. New wet and dry wells.
  - b. New pumps.
  - c. New force main.
3. Pua Loke WWPS.
  - a. New wet and dry wells.
  - b. New pumps.
  - c. New force main.

The size and length of gravity lines and force mains will be determined during the final design. In addition, the wet and dry wells and pumps will be determined during final design.





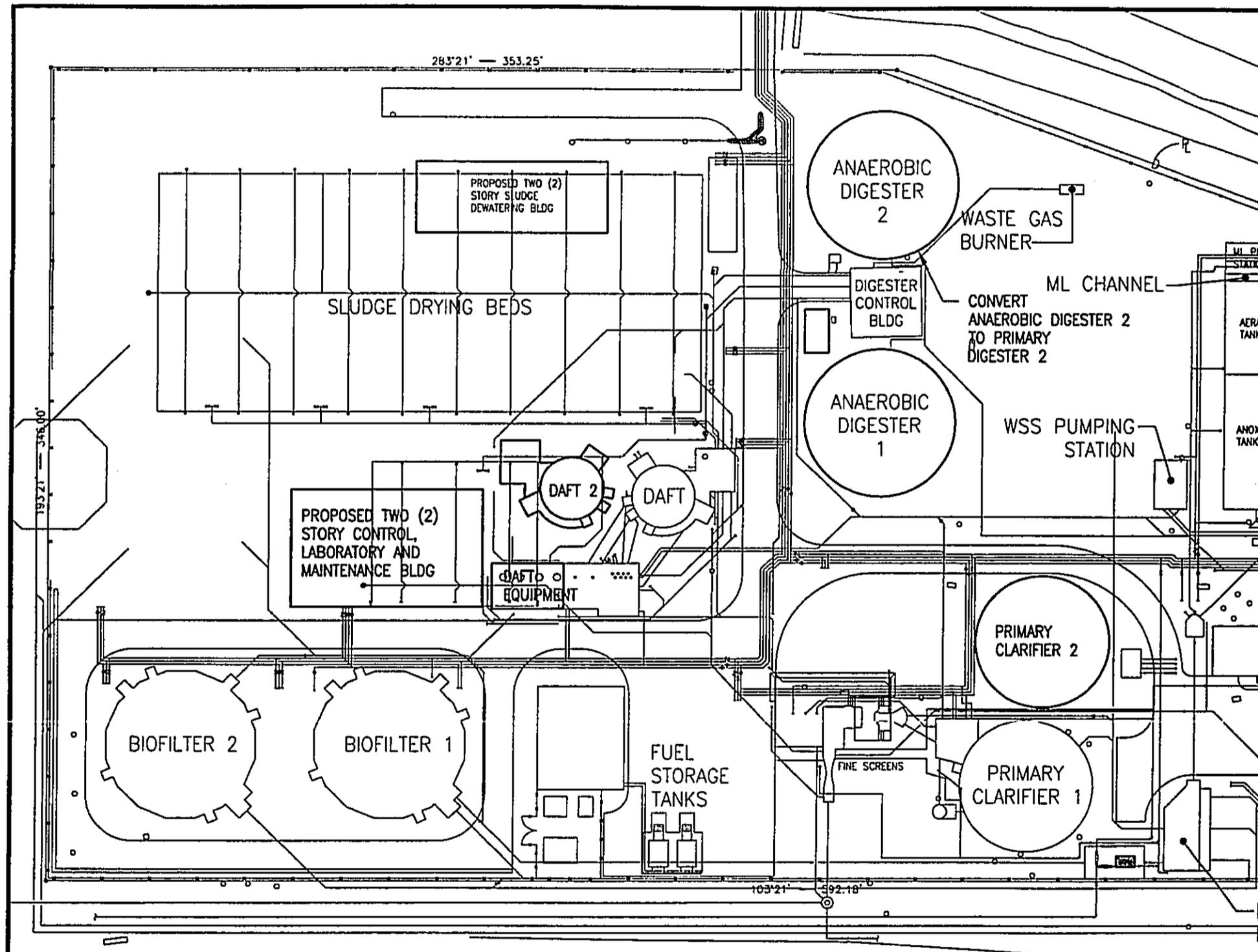
#### **2.2.4.2 Wastewater Treatment Plant**

The WWTP will have a long-term design capacity of 3.0 mgd. Since the treatment capacity is currently 2.5 mgd, an additional 0.5 mgd will be required for the long-term proposed work.

The following are recommended for the long-term WWTP:

1. An additional primary clarifier.
2. An additional DAFT.
3. An additional primary digester or convert current secondary digester to a primary digester.
4. New support facilities.

The size of the equipment and facilities will be determined during final design.

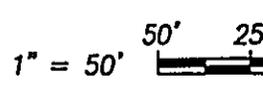


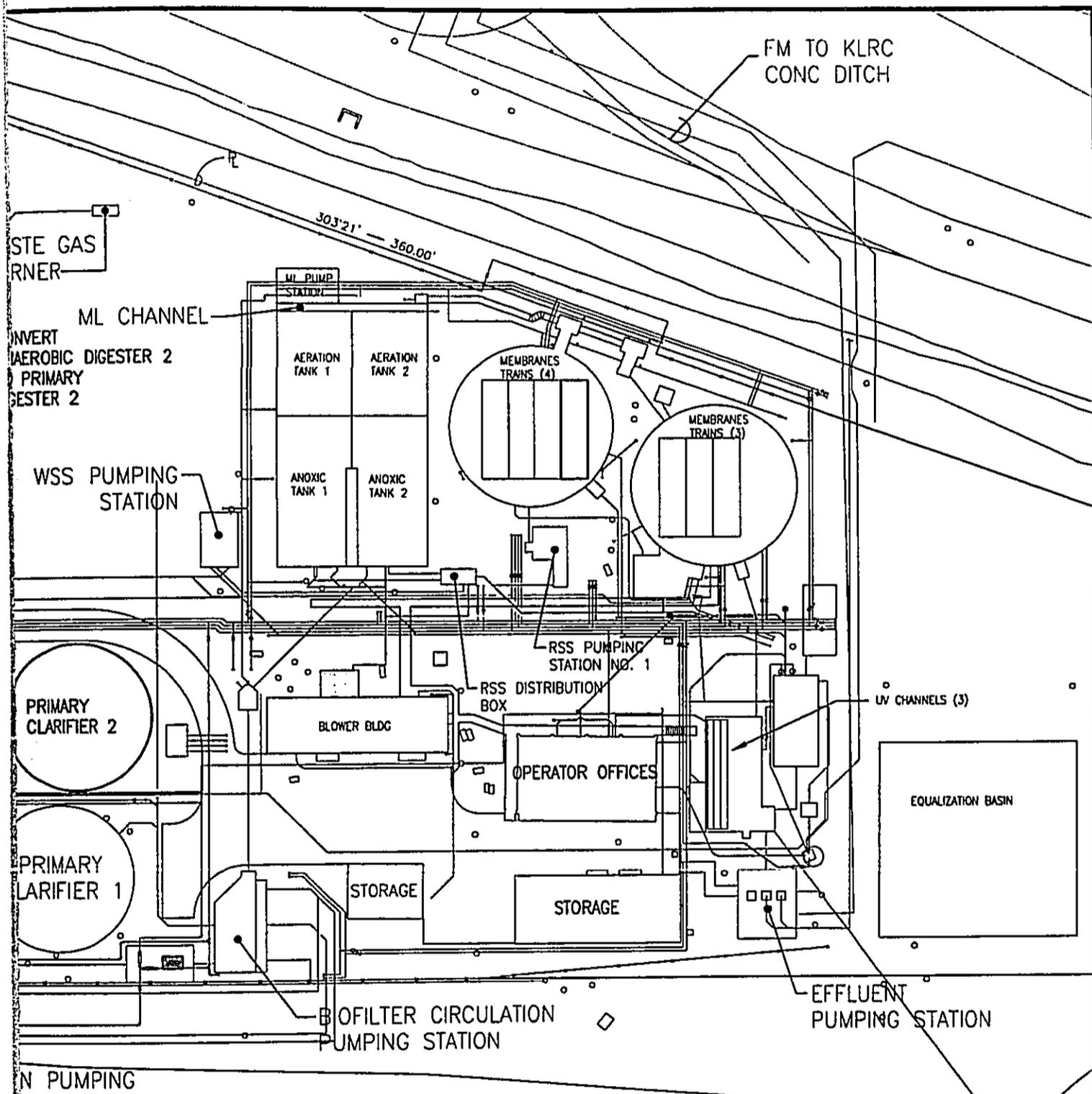
ELECTRICAL/GENERATOR BLDG

WN PUMPING STATION

# Long-Term WWTP

SCALE: 1:50





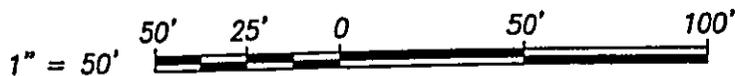
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**Figure - 2-7**  
**Lihue WWTP Facility Plan EA**  
 Long-Term Lihue WWTP

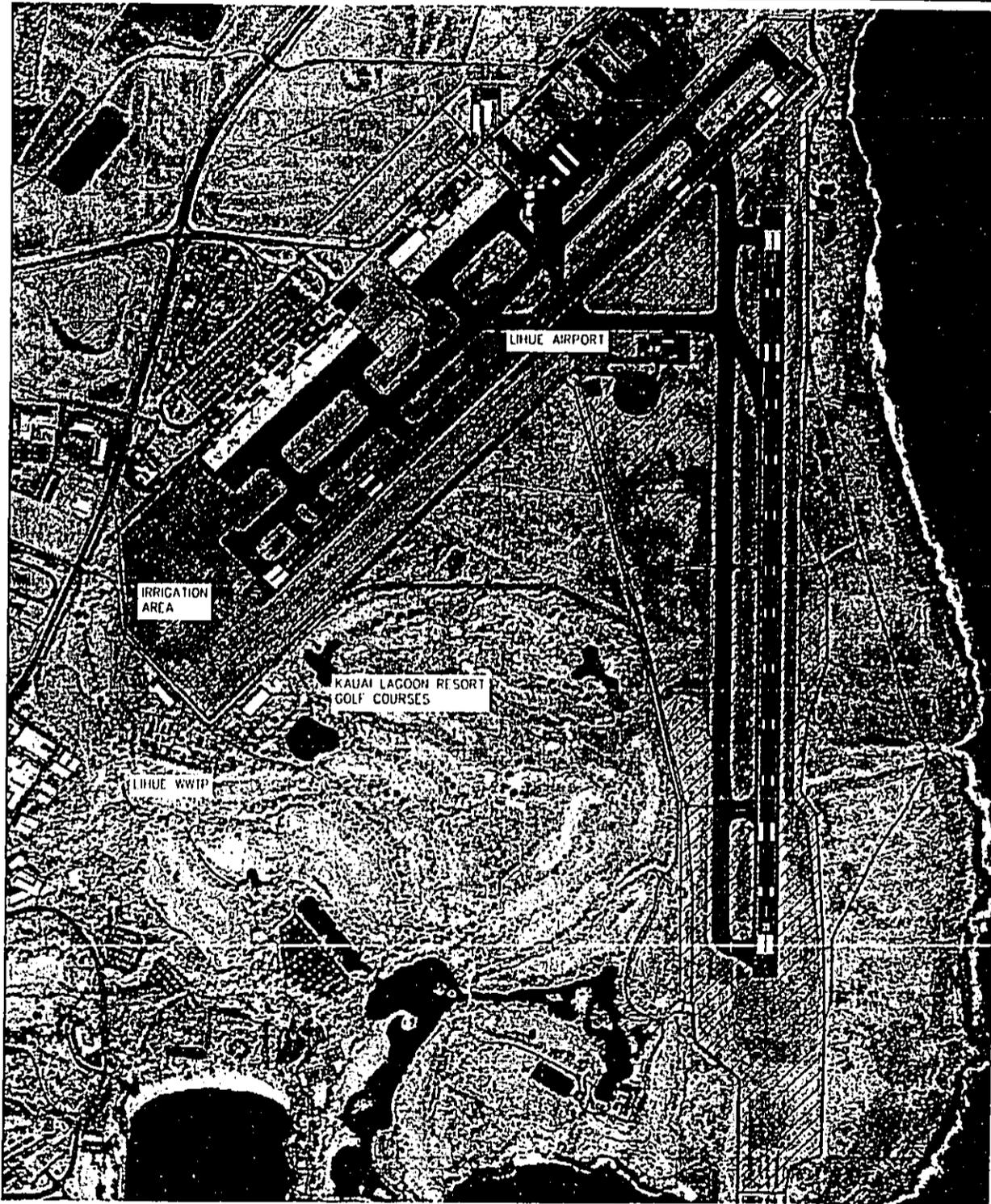
May 2007



#### **2.2.4.3 Effluent Disposal System**

The effluent disposal system will have to be expanded to handle long-term flows. Reuse will be the primary means of effluent disposal. The Lihue Airport has expressed interest in using up to 3.5 mgd of R-1 water for irrigation for approximately 400 acres of land. The Lihue Airport irrigation area is shown Figure 2-8.

Lihue WWTP long-term flow is 3.0 mgd; however, 1.5 mgd is committed to Kauai Lagoons Resort until 2031. Therefore, only 1.5 mgd can be used to irrigate approximately 200 acres of Lihue Airport's open grassland. The recycled water distribution system is shown in Figure 2-9. Effluent that is not reused will be disposed in the injection wells.



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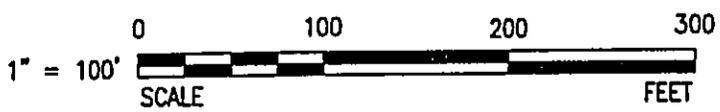
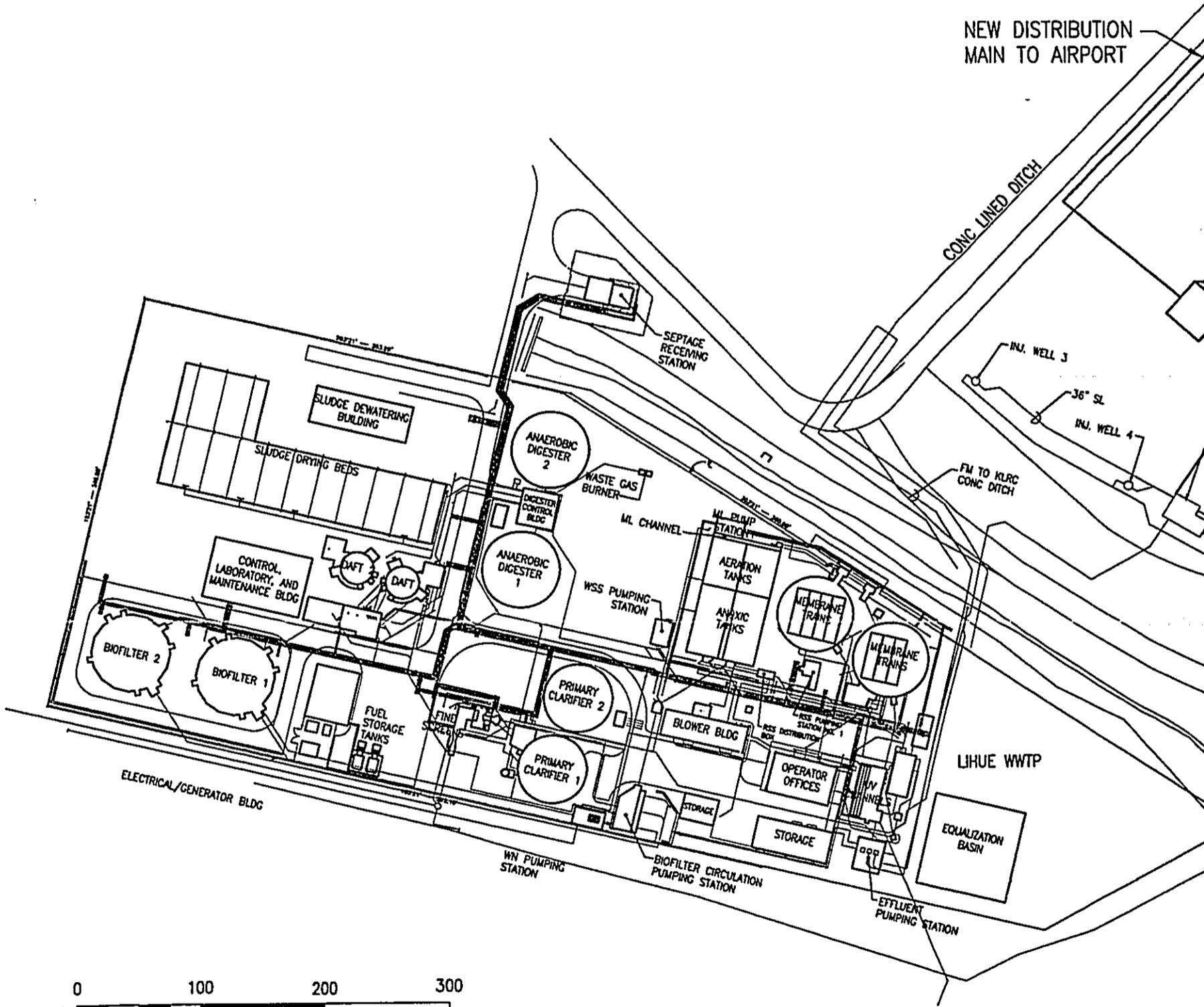
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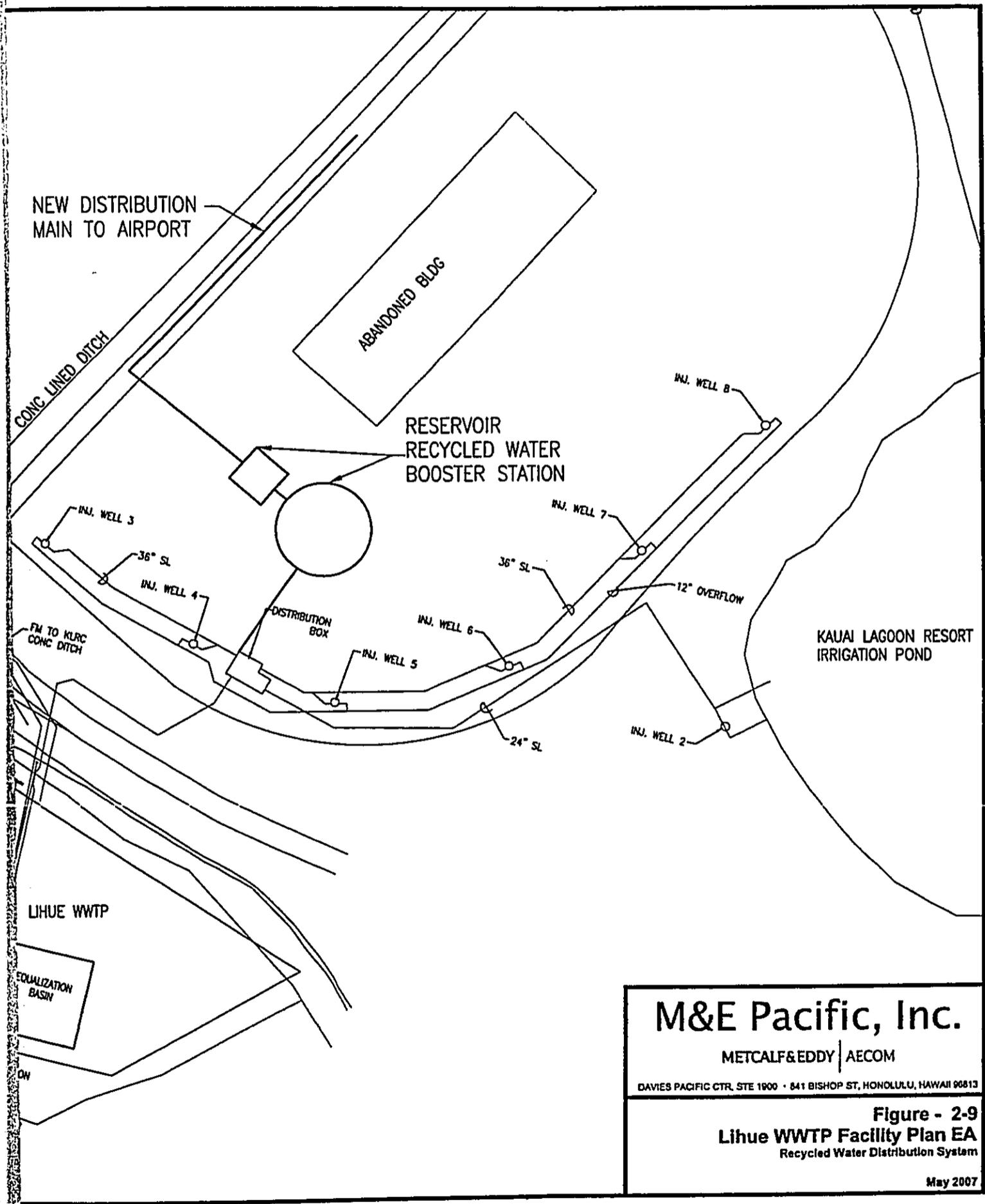
Figure - 2-8  
Lihue WWTP Facility Plan EA  
Lihue Airport Irrigation

May 2007



NEW DISTRIBUTION  
MAIN TO AIRPORT





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**Figure - 2-9**  
**Lihue WWTP Facility Plan EA**  
 Recycled Water Distribution System

May 2007

## **2.3 ALTERNATIVES CONSIDERED**

### **2.3.1 FLOW ALTERNATIVES**

The Lihue WWTP Facilities Plan considered four flow alternatives. The alternative chosen was Alternative 2 accounts for all flow in the project area, which includes existing flow and future flows including Hanamaulu Triangle, Kauai Lagoons, Molokoa Homes 2, Lihue Mills, Ahukini Mauka, Ahukini Makai, and all existing unsewered areas. This alternative takes into account all flow in the project area.

Alternative 1 was the "Do Nothing" Alternative. This alternative will force Lihue to place a moratorium on all future developments, force developers to build their own WWTP, or face fines from the US EPA. Alternative 3 includes Alternative 2 projected flows, and the flows from land north of Ahukini Makai, formerly called the Moody property. There are no plans for the property north of Ahukini Makai. Alternative 4 includes additional flow from Hanamaulu Triangle, Kauai Lagoons, Molokoa Homes 2, Lihue Mills, and all existing unsewered areas to the Lihue WWTP and a new private WWTP for Ahukini Mauka and Ahukini Makai.

All flow alternatives will require the same collection system expansion since the existing collection system does not have excess capacity. The selected alternative will produce additional revenue from the Ahukini developers. Since the Ahukini developments border the proposed collection system expansion, the additional revenue can be realized without becoming a significant cost burden to the County. All developers will be responsible for wastewater collection within their development property.

### **2.3.2 COLLECTION SYSTEM ALTERNATIVE**

The selected alternative is to re-route Hanamaulu Triangle development flows to Lihue WWTP through Kapule Highway and over Hanamaulu Gulch. This will require the proposed force main to be strapped to the existing Kapule Highway Bridge or to bridge the Hanamaulu Gulch on a separate, dedicated structure. The way the force main will traverse the Hanamaulu Gulch will be determined during the final design. The other alternative considered for the collection system is to expand and replace the existing sewer lines laid in Kuhio Highway, Hardy Street and Rice Street. This alternative will cause traffic congestion and affect businesses through downtown Lihue. Additionally, the State Department of Transportation (DOT) is planning to widen Kapule Highway to a four-lane divided highway and the recommended collection system construction could be done prior to or simultaneously with the highway bridge widening project<sup>10</sup>. The timing of the widening is uncertain; therefore further discussion with the DOT Highways Division Planning Branch is required during design.

<sup>10</sup> State of Hawaii, Department of Transportation (DOT). Response to pre-consultation letter. Subject: Lihue Wastewater Facilities Plan and Environmental Assessment, TMK: Division 4, Zone 3, Sections 2 to 8.

### **2.3.3 WASTEWATER TREATMENT PLANT**

The alternative to producing R-1 water using the selected MBR process is to use a combination of the existing secondary clarifiers plus new effluent sand filters. Secondary clarifiers and sand filters can produce R-1 effluent, but it is not as reliable and consistent as MBRs. Poor settleability will adversely affect the combined clarifier and sand filter operation but will not affect the MBR process. If settleability is poor, the existing secondary clarifiers will experience solids carry-over and this will eventually plug the sand filter and produce an effluent not satisfying the R-1 effluent requirements. Membranes in the MBR process will still produce excellent effluent if settleability is poor. MBR also requires a smaller footprint (area). Membranes will filter significantly more bacteria and viruses and provide a much higher effluent quality than the combination of the secondary clarifier and the sand filtration system.

Ultraviolet disinfection system and a small chlorination system were recommended over a full-scale chlorination system. Based on a 20-year life cycle cost analysis, the chlorination system is more expensive than the UV system. In addition, chlorine is highly corrosive; therefore, spills and leaks from a full-scale system can damage the existing facility, and can cause numerous health hazards.

### **2.3.4 EFFLUENT DISPOSAL**

An alternative to the additional 200 acres of land for irrigation are additional injection wells. From an operational standpoint, effluent irrigation is preferred over additional injection wells. Injection well capacity is expected to be reduced over time due to plugging of the injection wells. This plugging will become an operation and maintenance issue that will worsen with time. There are minimal requirements for the use of R-1 recycled water. Reusing recycled water is important because there is a limited amount of potable water on the island. Another alternative considered is ocean outfall. Ocean outfall is approximately ten times more costly than the injection wells and reuse.

### **3.0 AFFECTED ENVIRONMENT, ANTICIPATED EFFECTS AND PROPOSED MITIGATIVE MEASURES**

#### **3.1 INTRODUCTION**

The environmental review process is regulated under the Hawaii Revised Statutes, Chapter 343, *Environmental Impact Statement*<sup>11</sup>, which ensures that appropriate consideration is given to all environmental concerns regarding the proposed project. Part of the process requires identification and a summary of potential environmental effects from the proposed action and all considered mitigative measures to avoid or minimize the effects, which include both "primary" and "secondary" effects, as well as, "cumulative," "short-term," and "long-term" effects.

A "primary" or "direct" effect refers to an effect caused by an action, in this case a construction activity, and occurs, immediately, at the same time and place as the instigating action.

A "secondary" or "indirect" effect refers to an effect caused by an action that occurs, later in time or farther removed in distance from the instigating action, but is still reasonably foreseeable.

A "cumulative" effect refers to a comprehensive, built-up effect comprised of the incremental effects of an immediate, instigating action adding to effects of other past, present and reasonably foreseeable future actions, regardless of the agency or person who undertakes such other actions.

A "short-term" effect is an effect of relatively short duration and generally refers to a project construction work-related effect.

A "long-term" effect is an effect of relatively long and lasting duration and generally refers to an effect that remains after completion of the project construction work.

"Mitigation" refers to procedures followed and activities undertaken during the project to alleviate and minimize any negative effects and impacts of the project work.

The following sections describe the existing physical and social environments within the project site and surrounding areas, and explore the potential effects anticipated from the proposed action and the practical mitigative measures for any adverse impacts. All project-related work shall be assessed in compliance with State and County policies.

---

<sup>11</sup> State of Hawaii, Chapter 343, *Environmental Impact Statements in Hawaii Revised Statutes* (2001).

### **3.2 PHYSICAL ENVIRONMENT**

#### **3.2.1 LOCATION**

The project area is located in Lihue on the southeastern coastline of the Island of Kauai in Lihue. The Lihue project area is bounded by Nawiliwili Road to the South, the Pacific Ocean to the East, Hanamaulu Triangle to the North, and Isenberg Tract residential subdivision.

#### **3.2.2 CLIMATE**

##### **Existing Condition**

The climate conditions in the area have mean temperatures ranging from 70.3 degrees Fahrenheit in the winter to 78.4 degrees Fahrenheit in the summertime. The relative humidity levels vary from 63% to 88%. The annual average rainfall is approximately 45 inches.

The climate in the Lihue Basin, like other areas of the State of Hawaii, is tropical, with local variations generally due to elevation and orientation of the trade winds. In general, the climate is characterized by two seasons a year: a wet winter and dry summer with mild and fairly uniform temperatures.

##### **Anticipated Effects and Mitigative Measures**

No short-term, long-term or cumulative adverse effects are anticipated to the climatic conditions in the project area; therefore, no mitigative measures are proposed.

#### **3.2.3 GEOLOGY AND TOPOGRAPHY**

##### **Existing Conditions**

Kauai is northernmost and second oldest of the main eight Hawaiian Islands. It is approximately 5 million years old. The Island of Kauai is composed of a single basalt shield volcano built by the extrusion of lava of the Waimea Canyon Volcanic Series. Following the cessation of this main shield-building phase, there was renewed volcanic activity with the extrusion of basaltic lava of the post-erosional Koloa Volcanic Series and the concurrent deposition of the alluvial sediments of the Palikea Formation.

The Lihue Basin, located on the eastern side of the island, is a low-lying area occupying approximately 40 square miles and contains the study area for this facility plan. This basin is bounded by steep cliffs on the north, south and west sides. The basin floor is comprised of mainly post-erosional lavas from the Koloa volcanics underlain by large (thick) breccia layers.

The topography of Lihue generally has a shallow slope of approximately 2 percent. However, there are localized areas that are much steeper. The northern side of Lihue is bounded by the Hanamaulu Gulch.

##### **Anticipated Effects and Mitigative Measures**

Although construction work will involve earthwork, the finish grades within the construction limits will match the existing condition upon completion of the project. Therefore, no long-term effects are anticipated to the geology and topography within the

project area. When these activities are reviewed against past, present and reasonably foreseeable future actions, no cumulative effects on geology and topography are expected. Therefore, no mitigation measures are required.

### 3.2.4 SOILS

#### Existing Conditions

According to *General Soil Map of Kauai and Soil Associations*<sup>12</sup>, "the Lihue soils were formed from materials weathered from basic igneous rock. They can be gently sloping or steep. Elevations range from sea level to approximately 800 feet. These soils are geographically associated with Ioleau and Puhi soils<sup>13</sup>."

"Lihue soils have a surface layer of dusky-red to dark reddish-brown, firm to friable silty clay. The subsoil is dark-red to dark reddish-brown, firm silty clay. The substratum is soft, weathered basic igneous rock. Puhi soils have a surface layer of brown to very dark-brown, friable silty clay loam. The subsoil is reddish-brown to dark brown, friable silty clay loam and silty clay. The substratum is soft, weathered basic igneous rock<sup>13</sup>."

#### Anticipated Effects and Mitigative Measures

Short-term adverse impact to the soil occurs during the utility trench excavation to install the new sewer, laying the new sewer, backfilling, and restoration of pavement. During construction, the soil in the open trench section is exposed to erosion forces.

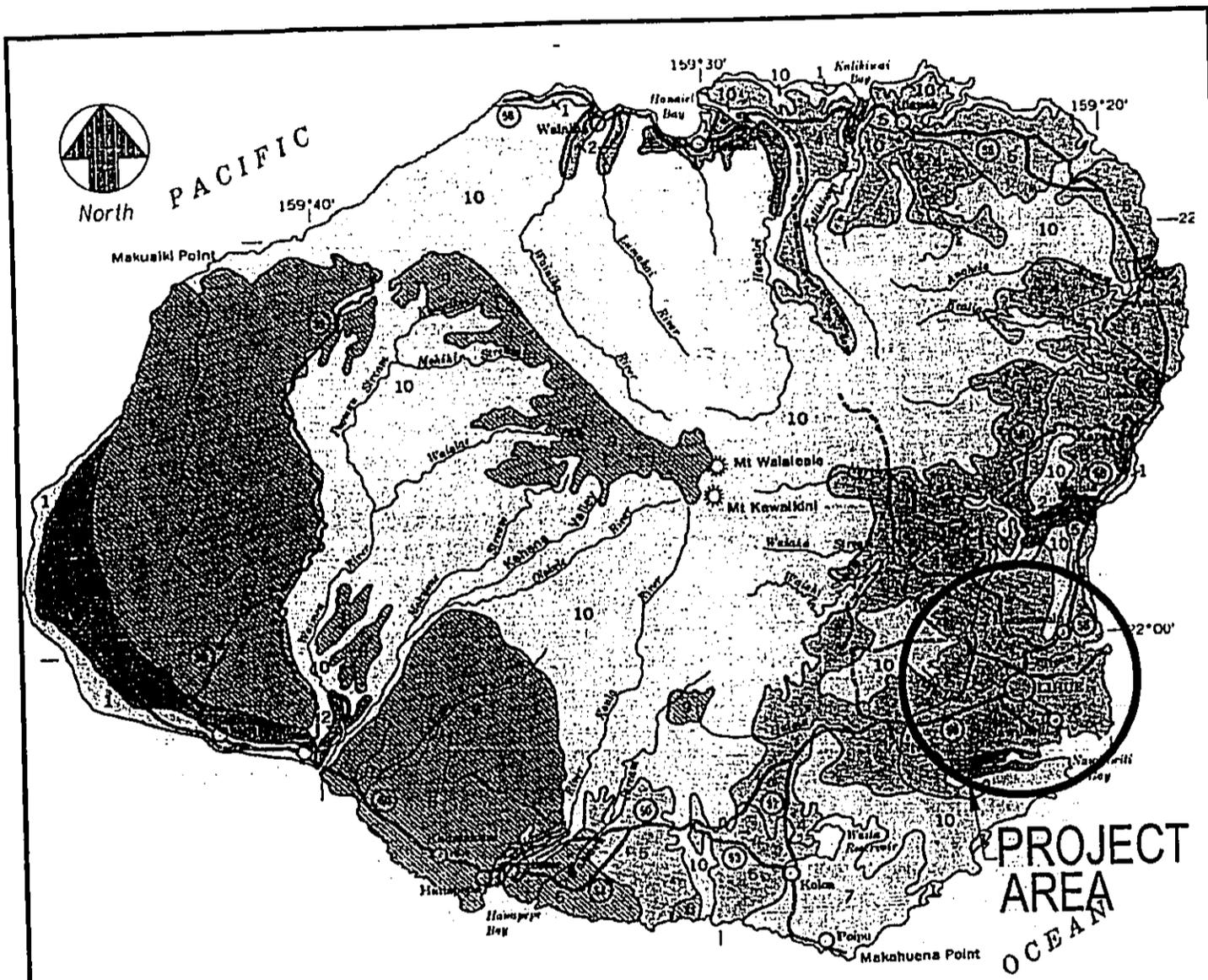
For the protection of nearby residences, temporary best management practices (BMPs) will be used for the project. Any accumulated dirt and debris from construction activities are to be cleaned daily, as required, from public roadways and neighboring driveways to keep the surroundings clean and safe. Soil loss due to storm events will be controlled with the use of temporary BMPs including silt fences, dust control using water spray on stockpiles along the perimeter of the project site, mulch, fast-growing groundcover, and periodic watering on exposed areas for erosion control. The temporary BMPs will be removed upon completion of the project construction work.

Dismantling and removal of the temporary BMPs all have the potential to temporarily generate debris and cause temporary increases in stream turbidity due to soil disturbance; however, the disturbance is anticipated to be relatively small and of short, insignificant duration.

After the trench is backfilled and the pavement is restored or the easement area is stabilized, no long-term adverse impacts to the soils are anticipated.

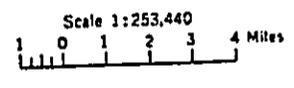
<sup>12</sup> *General Soil Map of Kauai and Soil Associations*. Website.  
<http://www.ctahr.hawaii.edu/soilsurvey/Sis/gensoilmapkauai.htm>. Accessed September 2006.

<sup>13</sup> *ibid.*



- SOIL ASSOCIATIONS**
- 1 Jauca-Makuleia association: Deep, nearly level to moderately sloping, excessively drained and well-drained soils that have coarse textured underlying material; on coastal plains
  - 2 Hanalei-Kalokola-Pakala association: Deep, nearly level, poorly drained to well-drained soils that have dominantly moderately fine textured or medium-textured subsoil or underlying material; on bottom land
  - 3 Kekaha-Nohi association: Deep, nearly level, well-drained and poorly drained soils that have a fine-textured subsoil; on coastal plains
  - 4 Kapaa-Pooku-Halii-Wakapili association: Deep, nearly level to steep, well drained and moderately well drained soils that have a fine textured or moderately fine textured subsoil; on uplands
  - 5 Lihue-Puhi association: Deep, nearly level to steep, well-drained soils that have a fine textured or moderately fine textured subsoil; on uplands
  - 6 Makalei-Waiawa-Niu association: Deep, gently sloping to steep, well-drained soils that have a dominantly moderately fine textured or fine textured subsoil and shallow, steep and very steep, well-drained soils over basalt bedrock; on uplands
  - 7 Waikomo-Kali-Koloa association: Moderately deep, gently sloping, well-drained upland soils that have a moderately fine textured or fine textured subsoil; deep, nearly level, poorly drained, bottom-land soils that have a fine-textured subsoil
  - 8 Rough broken land-Ahaha-Kokee association: Shallow to deep, very steep, rough broken land and deep, moderately sloping to very steep, well-drained soils that have a medium-textured to fine-textured subsoil; on uplands
  - 9 Waialeale-Alakai association: Moderately deep, very steep, somewhat poorly drained soils that have a moderately fine textured subsoil and level to moderately steep, very poorly drained organic soils over fine-textured material; on uplands
  - 10 Rough mountainous land-Rough broken land-Rock outcrop association: Well-drained to excessively drained, very steep to precipitous lands of mountains and outcrops

U. S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 UNIVERSITY OF HAWAII AGRICULTURAL EXPERIMENT STATION  
**GENERAL SOIL MAP**  
 KAUAI ISLAND, HAWAII



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**Figure - 3-1**  
**Lihue WWTP Facility Plan EA**  
 Soils Map  
 May 2007

January 1971

### 3.2.5 WATER RESOURCES

#### Existing Conditions

The Lihue Basin is classified by the State Department of Health to have Class 2 inland water and Class A marine waters.

The Hawaii Administrative Rules (HAR), Title 11 Chapter 54, *Water Quality Standards*<sup>14</sup> defines inland Class 2 streams as those whose uses are to be protected for recreational purposes, propagation of fish and aquatic life, promotion of agricultural and industrial water supplies, shipping navigation and propagation of shellfish. These waters are not to receive any discharges that have not received the best degree of treatment of control compatible with criteria established for this class of waters. HAR §11-54 establishes an objective for Class A marine waters (i.e. all oceanic waters) essentially the same as stated above for Class 2 above.

The project site lies within the Hanamaulu hydrologic unit (code 20102). A part of the Lihue aquifer sector (aquifer recharge zone) was created in the late 1980's in response to USEPA directives. The State Commission on Water Resource Management (CWRM) uses this code classification of aquifers: 2 (Kauai Island); 01 (Lihue Aquifer Sector); 02 (Aquifer System). The surface boundaries of the aquifer follow major topographic ridges and encompass the towns of Lihue, Nawiliwili, Hanamaulu, etc. and the drainage basins of a number of streams. The estimated sustainable yield of the Hanamaulu hydrologic unit is 183 mgd<sup>15</sup>.

The major streams in the project area are the Hanamaulu Stream and the Nawiliwili Stream. The Nawiliwili Stream enters Nawiliwili Bay from the north. The Hanamaulu stream enters the Hanamaulu Bay. The Hanamaulu Bay is located at the northeast tip of the Lihue Basin.

#### Anticipated Effects and Mitigative Measures

No short-term, long-term or cumulative adverse effects are anticipated to the water resources conditions in the project area; therefore, no mitigative measures are proposed.

During construction, approved best management practices will be employed to filter any storm runoff flowing over the construction site and procedures will be in place to prevent oil or other contaminants from entering State waters.

No short-term or long-term impacts on these two water resources are anticipated. During construction, the grading permit and the permit to work within the County Right-of-Way will specify the necessary temporary erosion control measures to control runoff during construction.

<sup>14</sup> State of Hawaii, Hawaii Administrative Rules (HAR), Title 11, Chapter 54. *Water Quality Standards* (2004).

<sup>15</sup> Hawaii Water Plan: Water Resources Protection Plan Volumes I&II prepared by George Yuen and Associates, Inc and State Commission on Water Resource Management Department of Land and Natural Resources, (1990) p.2-1 to 2-6

It is anticipated that the size of the construction site will exceed one acre and therefore a National Pollution Discharge Elimination System (NPDES) permit will be required. Appropriate BMPs will be used to control stormwater runoff from the construction site.

This project requires very little potable water; the majority of the water used at the WWTP will be non-potable water. Therefore, no long-term negative impacts are expected.

### **3.2.6 WETLANDS**

#### **Existing Conditions**

There are numerous wetlands in the Lihue Basin. These wetlands consist of freshwater ponds, freshwater forested/shrub wetland, lake, and freshwater emergent wetlands. The freshwater ponds are located on the southeast coast of the Lihue Basin near the airport. A lake is located northwest of the WWTP, just west of Kapule Hwy and south of the Hanamaulu Triangle. Freshwater forested/shrub wetland is found in the Hanamaulu stream south of the Hanamaulu Homes, and in the Huleia valley along the Huleia stream. Freshwater emergent wetlands are also in the Huleia valley along the Huleia stream.

#### **Anticipated Effects and Mitigative Measures**

The proposed WWTP is not expected to have any effect on the existing wetlands because the sewers are laid underground and the majority of the construction will be in existing roads. Therefore, no long-term mitigation measures are required.

### **3.2.7 AIR QUALITY**

In order to protect public health and welfare and to prevent the significant deterioration of air quality, per requirement of the Clean Air Act, last amended in 1990, the US Environmental Protection Agency (USEPA) has established the National Ambient Air Quality Standards (NAAQS) harmful pollutants using two standards. The *Primary* standards set limits to protect public health, including the health of "sensitive" populations, such as, asthmatics, children and the elderly. The *Secondary* standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation and buildings. The DOH has also established ambient air quality standards to regulate the air quality statewide. In addition, the State of Hawaii has established standards for carbon monoxide and nitrogen dioxide that are more stringent than the federal guidelines as well as an additional standard for hydrogen sulfide. The following table summarizes the national and state ambient air quality standards (SAAQS).

Table 3-1: National and State Ambient Air Quality Standards

Pollutant		NAAQS <sup>16</sup>		SAAQS <sup>17</sup>
		Standard Value	Standard Type	
Carbon Monoxide (CO)	8-hour Average	<b>9 ppm (10 mg/m<sup>3</sup>)</b>	Primary	<b>5 mg/m<sup>3</sup> (4.4 ppm)</b>
	1-hour Average	<b>35 ppm (40 mg/m<sup>3</sup>)</b>	Primary	<b>10 mg/m<sup>3</sup> (9 ppm)</b>
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Arithmetic Mean	<b>0.053 ppm (100 µg/m<sup>3</sup>)</b>	Primary & Secondary	<b>70 µg/m<sup>3</sup> (0.04 ppm)</b>
Sulfur Dioxide (SO <sub>2</sub> )	3-hour Average	<b>0.50 ppm (1300 µg/m<sup>3</sup>)</b>	Secondary	<b>1300 µg/m<sup>3</sup> (0.5 ppm)</b>
	24-hour Average	<b>0.14 ppm (365 µg/m<sup>3</sup>)</b>	Primary	<b>365 µg/m<sup>3</sup> (0.14 ppm)</b>
	Annual Arithmetic Mean	<b>0.03 ppm (80 µg/m<sup>3</sup>)</b>	Primary	<b>80 µg/m<sup>3</sup> (0.03 ppm)</b>
Ozone (O <sub>3</sub> )	8-hour Average	<b>0.08 ppm (157 µg/m<sup>3</sup>)</b>	Primary & Secondary	<b>157 µg/m<sup>3</sup> (0.08 ppm)</b>
	1-hour Average	<b>0.12 ppm (235 µg/m<sup>3</sup>)</b>	Primary & Secondary	-
Lead (Pb)	Quarterly Average	<b>1.5 µg/m<sup>3</sup></b>	Primary & Secondary	<b>1.5 µg/m<sup>3</sup></b>
Particulate (PM <sub>10</sub> ) <sup>(1)</sup>	24-hour Average	<b>150 µg/m<sup>3</sup></b>	Primary & Secondary	<b>150 µg/m<sup>3</sup></b>
	Annual Arithmetic Mean	<b>50 µg/m<sup>3</sup></b>	Primary & Secondary	<b>50 µg/m<sup>3</sup></b>
Particulate (PM <sub>2.5</sub> ) <sup>(2)</sup>	24-hour Average	<b>65 µg/m<sup>3</sup></b>	Primary & Secondary	-
	Annual Arithmetic Mean	<b>15 µg/m<sup>3</sup></b>	Primary & Secondary	-
Hydrogen Sulfide (H <sub>2</sub> S)	1-hour Average	-	-	<b>35 µg/m<sup>3</sup> (25 ppb)</b>

(1) Particles with diameters of 10 micrometers or less

(2) Particles with diameters of 2.5 micrometers or less

Note: Standards appear in bold and conversions are in parentheses. Units of measure are parts per million (ppm) by volume, parts per billion (ppb) by volume, milligrams per cubic meter of air (mg/m<sup>3</sup>), and micrograms per cubic meter of air (µg/m<sup>3</sup>).

**Existing Conditions**

Air quality applicable to the Lihue Basin is collected by the Department of Health, State of Hawaii at Lihue. The survey data measured the annual average particulate matter to be

<sup>16</sup> US Environmental Protection Agency (USEPA). *National Ambient Air Quality Standards*. 1990.

<sup>17</sup> State of Hawaii. *Ambient Air Quality Standards* (2001).

37 micrograms per cubic meter, the annual average sulfur dioxide concentration to be 5 micrograms per cubic meter, and nitrogen dioxide concentration to be 8 micrograms per cubic meter<sup>18</sup>. These values are within the allowable concentrations of the State's Ambient Air Quality Standards, which is 55 micrograms per cubic meter for particulates, 20 micrograms per cubic meter for sulfur dioxide, and 150 micrograms per cubic meter for nitrogen dioxide.

#### **Anticipated Effects and Mitigative Measures**

The principal project sources of air pollution will be fugitive dust emissions resulting from excavation and drilling and vehicular emissions resulting from the operation of construction equipment and vehicles. These effects are short-term in nature and will cease upon completion of the proposed projects. No long-term effects on air quality due to the operation of construction equipment or vehicles are anticipated as their presence and use will be temporary. No cumulative effects on air quality are anticipated due to the temporary nature of the construction activity.

Contractors shall control emission per Hawaii Administration Rules. Construction activities will incorporate dust control measures and BMPs such as a regular dust-watering program and covering of trucks during the transport and storage of soils. Areas graded and cleared of vegetation will be revegetated as soon as possible to reduce dust emissions as well. Upon completion of the project, the air quality at the project site will return to its existing condition.

With a significant increase in raw wastewater directed to the WWTP, there is an increased possibility of odor problems. This foul odor could be near the sewer manholes, pump stations, or WWTP. Mitigative measures include grease reduction, new equipment with redundancy if equipment stops working, daily monitoring of the WWTP operation, and enclosing sludge handling equipment. The County is currently evaluating odor control on an island-wide basis, and may adopt odor control measures in the future.

### **3.3 NATURAL HAZARDS**

#### **3.3.1 FLOODS AND TSUNAMIS**

##### **Existing Conditions**

The natural hazards endemic to all of Hawaii, including Kauai, involve tsunamis. The Hawaiian Islands are exposed to tsunamis generated at the fault zones bordering the Pacific Ocean, the "Rim of Fire"<sup>19</sup>.

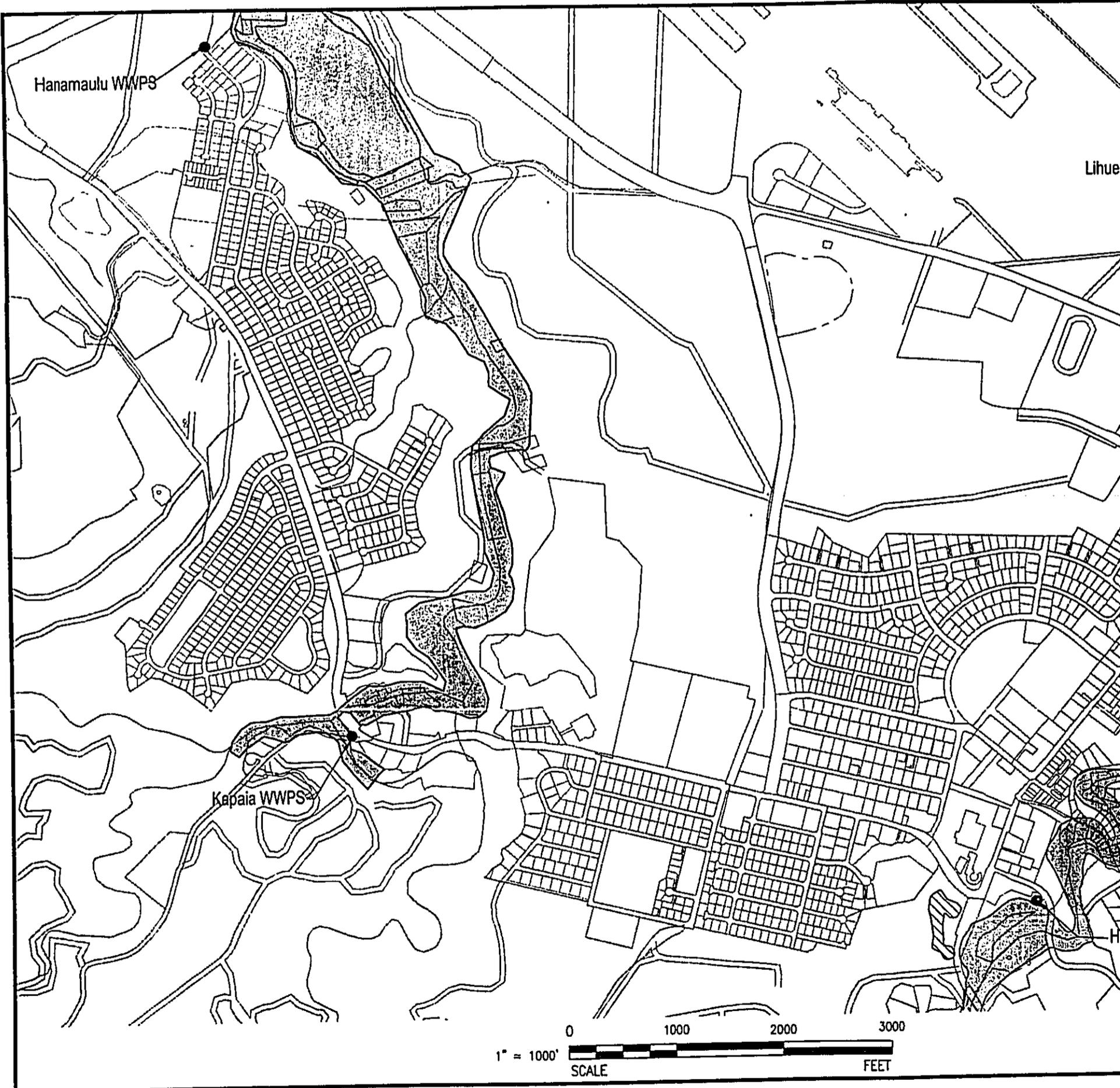
Floods may be caused by rainfall or tsunamis and high storm waves. These events pose hazard to the low-lying coastal areas of the Lihue Basin.

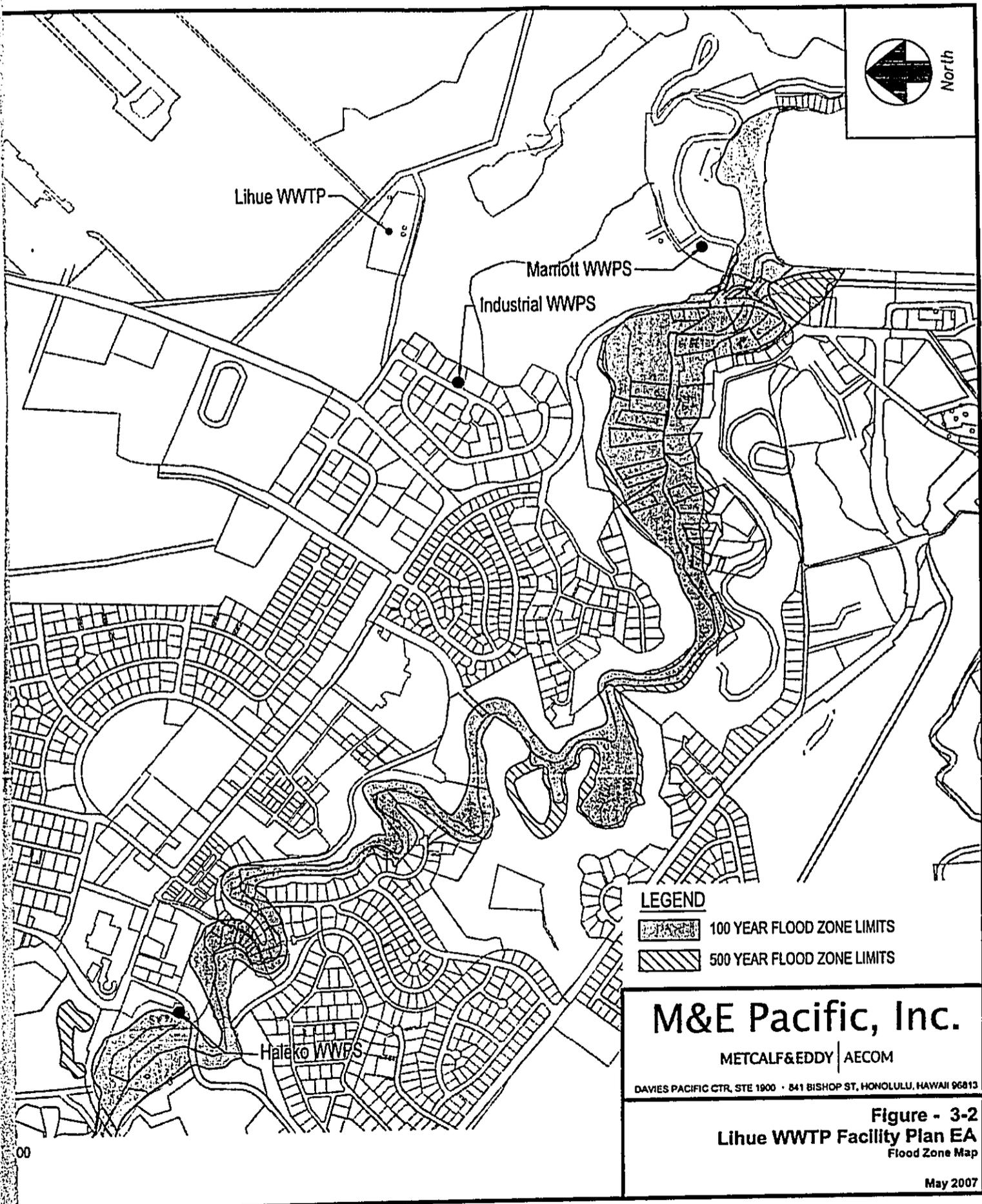
The flood prone areas have delineated on the flood map. The flood plain, or flood prone areas, have been defined as the area necessary to discharge or temporarily store

<sup>18</sup> State of Hawaii, Department of Health, Clean Water Branch. *2004 Annual Summary Hawaii Air Quality Data* (2004)

<sup>19</sup> Juvik, Sonia and James. *Atlas of Hawaii*. University of Hawaii Press, Honolulu. 3<sup>rd</sup> Edition, (1998).

floodwaters from the 100-year flood, which is a flood having a one percent chance of being equaled or exceeded in any given. See Figure 3-2.





Lihue WWTP

Marriott WWPS  
Industrial WWPS

Haleko WWPS



**LEGEND**

-  100 YEAR FLOOD ZONE LIMITS
-  500 YEAR FLOOD ZONE LIMITS

**M&E Pacific, Inc.**

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DAVIES PACIFIC CTR, STE 1900 • 841 BISHOP ST, HONOLULU, HAWAII 96813

**Figure - 3-2**  
**Lihue WWTP Facility Plan EA**  
Flood Zone Map

May 2007

00

### **Anticipated Effects & Mitigation Measures**

The project area improvements will not change the existing finish ground contours and will not have any long-term impacts on existing flood zones. Therefore, no long-term mitigation measures are required.

### **3.3.2 HURRICANES**

#### **Existing Conditions**

Hurricanes are tropical cyclones with winds exceeding 73 mph. Hurricanes are formed in warm waters. According to Juvik, 'most storms enter Hawaiian waters from the eastern Pacific'<sup>20</sup>. These storms also bring heavy rains, stream flooding, and cause storm surges along the first few hundred meters of the coastal zone.

Juvik also states that:

The first officially recorded hurricane, named Hiki occurred in 1950...From 1961 to 1995, 44 depressions (sustained winds measuring up to 38 mph), 68 tropical storms (sustained winds between 39 and 73 mph), and 42 hurricanes have either entered or formed in the central North Pacific<sup>21</sup>.

### **Anticipated Effects and Mitigative Measures**

The proposed improvements to this project are underground and will not affect the local climate in the short-term or the long-term. No mitigative measures are required.

### **3.3.3 VOLCANIC AND EARTHQUAKE HAZARDS**

#### **Existing Conditions**

Earthquakes in Hawaii are typically associated with volcanic eruptions. The volcano on Kauai is extinct. Kauai may experience earthquake hazards caused by the eruptions of volcanoes on other islands. The data suggests that Kauai has had lower intensity of seismic activity than most of the Hawaiian Islands because it is the furthest away from the Island of Hawaii.

### **Anticipated Effects and Mitigative Measures**

The entire Island of Kauai has no significant volcanic or earthquake hazards. Therefore, no mitigative measures are required.

### **3.3.4 COASTAL HAZARDS**

#### **Existing Conditions**

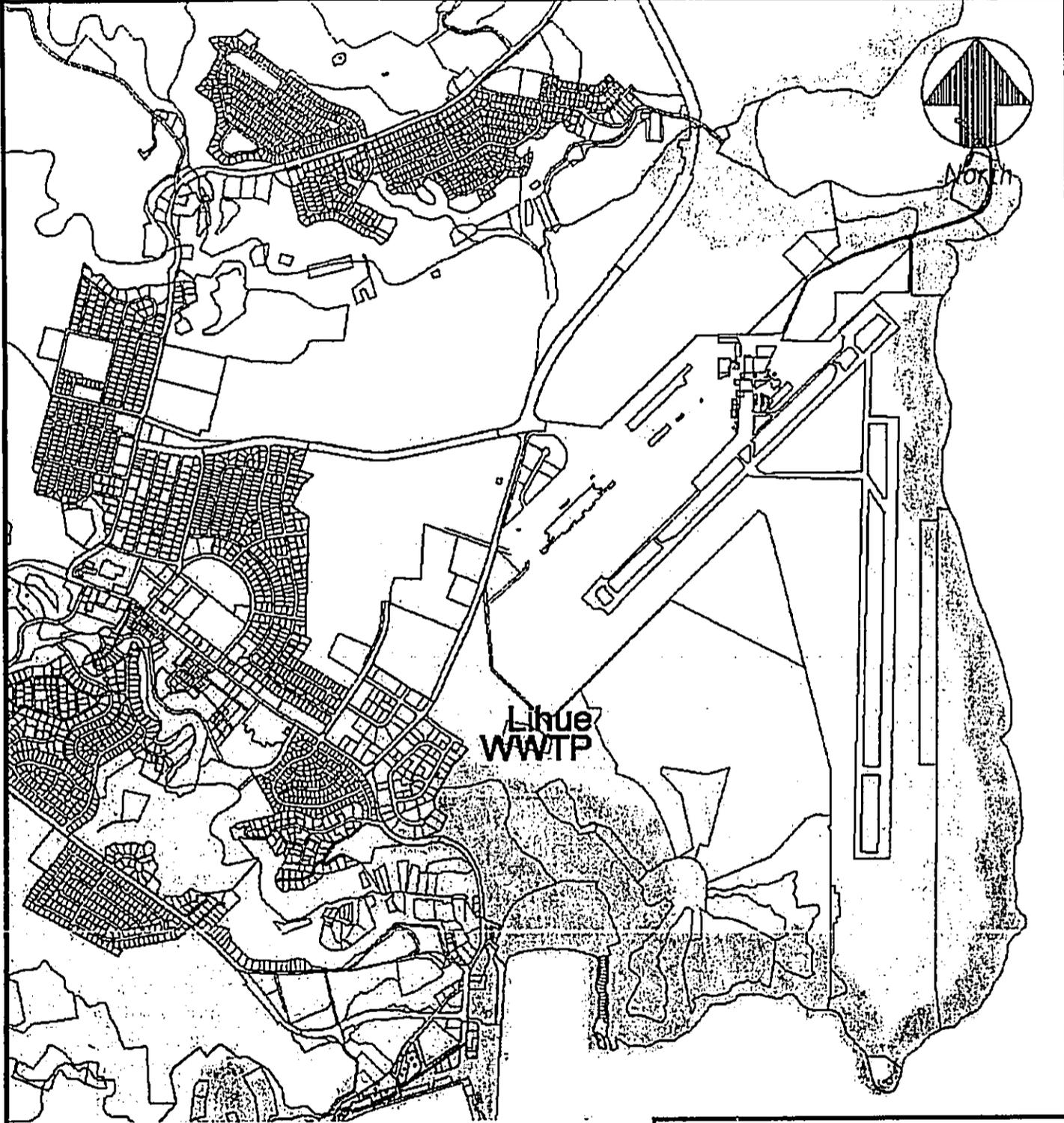
The Lihue coastal area is subject to stream flooding and long-term erosion<sup>22</sup>. Heavy rainfall cause coastal stream floods. Among the many factors, contributing to coastal erosion is rising sea levels, which cause long-term shoreline retreat or the inshore migration of a beach.

<sup>20</sup> Juvik, Sonia and James. *Atlas of Hawaii*. University of Hawaii Press, Honolulu. 3<sup>rd</sup> Edition, (1998).

<sup>21</sup> ibid

<sup>22</sup> ibid





 Special Management Area

NOT TO SCALE

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**Figure - 3-3**  
**Lihue WWTTP Facility Plan EA**  
Special Management Area Map  
May 2007

#### **Anticipated Effects & Mitigation Measures**

The project area will not affect the coastal area; therefore, no mitigative measures are required.

### **3.4 FLORA AND FAUNA**

#### **Existing Conditions**

The natural vegetation found in the area include, but is not limited to guava, java plum, pangola grass, kikuyu grass, elephant opus, joe, yellow foxtail, rhodomyrtus, lantana, koa haole, molasses grass, guinea grass, and Bermuda grass<sup>23</sup>.

“Kauai has the largest number of native bird species in Hawaii. It is the only major island free of mongoose, which preys upon the eggs of ground-nesting birds. Of Hawaii’s two native mammals, the hoary bat lives in Kokee State Park while the Hawaiian monk seal occasionally can be seen on some of the isolated beaches on the island. Wild pigs, goats, and black-tailed deer are non-native mammals that are hunted<sup>24</sup>.”

#### **Anticipated Effects & Mitigation Measures**

The project will occur in urban areas along major highways and roads. Therefore, very little flora or fauna will be affected and no mitigative measures are required for the long-term.

### **3.5 VISUAL RESOURCES**

#### **Existing Conditions**

The project site occurs in a developed business and residential area. The proposed improvements are underground except for the WWTP and pump stations.

#### **Anticipated Effects and Mitigative Measures**

The construction activities will disrupt appearance of the roadways temporarily. Disruptions will be minor and short-term and primarily will result from utility trenching operations, pipe laying, and trench restoration activities. There will be no long-term impacts to existing view planes. No mitigative measures are required.

### **3.6 NOISE CONDITIONS**

According to HAR Title 11 Chapter 46, *Community Noise Control*<sup>25</sup>, “noise” means any sound that may produce adverse physiological effects or interfere with individual or group activities, including, but not limited to, communication, work, rest, recreation or sleep. “Noise pollution” means noise emitted from any excessive noise source in excess of the maximum permissible sound levels<sup>26</sup>. The accepted unit of measure for noise levels is the A-weighted decibel (dBA) because it reflects the way humans perceive changes in sound amplitude. Sound levels are easily measured, but human response and

<sup>23</sup> *General Soil Map of Kauai and Soil Associations*. Website.

<http://www.ctahr.hawaii.edu/soilsurvey/Sis/gensoilmapkauai.htm>. Accessed September 2006.

<sup>24</sup> *Guide to Natural Hawaii: Flora and Fauna*. Website.

<http://www.innerself.com/nyp/naturalhawaii/general/flora.htm>. Accessed September 2006.

<sup>25</sup> State of Hawaii. Hawaii Administrative Rules (HAR), Title 11, Chapter 46. *Community Noise Control*.

<sup>26</sup> *ibid*

perception of the wide variability in sound amplitude is subjective.

#### **Existing Conditions**

The primary work area is throughout Lihue. The work will take place on roads in Lihue, which include, but not limited to Kapule Highway, Kuhio Highway and Ahukini Road.

#### **Anticipated Effects and Mitigative Measures**

Intermittent elevated noise levels from certain types of construction activities are inevitable. However, they are expected to be short-term and minor. The noises generated from the construction equipment that are anticipated to be used for the project are lower than the permissible sound levels; therefore, no significant noise effects are expected from the proposed project. Noise generated by construction activities will comply with noise provisions established by the State Department of Health and no further measures are required to mitigate short-term impacts. All construction work will be scheduled during the daytime in accordance with HRS 342-F-1. Construction work around schools may be scheduled, such that school is not disrupted (i.e. after school, summer break, winter break, spring break, etc) or the schools may be supplied with a microphone and speaker system. No long-term impacts are expected.

### **3.7 SOCIAL**

#### **3.7.1 CULTURAL RESOURCES**

##### **Existing Conditions**

The Lihue area is rich with many of Kauai's historical and archaeological sites. Artifacts have been found as evidence of a highly developed Hawaiian culture. These sites are located in a rapidly developing area of commercial and residential growth. Because Kauai's historical and cultural past is largely not documented in detail, it is important to consider the effect of development plans on these sites and undertake measures to preserve these irreplaceable resources to the benefit of the community and commercial interests.

These sites are rated valuable, high, reserve, or marginal depending on their cultural significance, uniqueness, massiveness, and other criteria.

For the project, data gathering inquiries were made to government agencies, community associations, and native Hawaiian organizations. The following entities were contacted:

1. Kauai Island Burial Council
2. Office of Hawaiian Affairs
3. Bishop Museum
4. Historic Hawaii Foundation
5. Department of Hawaiian Home Lands
6. 1000 Friends of Kauai
7. Sierra Club Hawaii Chapter
8. Nature Conservancy Kauai Program
9. The Outdoor Circle

Copies of our letters regarding possible impacts on historical or culturally significant

resources and all responses received are found in the appendices at the back of this EA document.

According to the State Historic Preservation Division's (SHPD)<sup>27</sup> website there are seven historic places in Lihue.

The historic places are:

1. Menehune Fishpond ('Alekoko Fishpond), site number 30-11-501.
2. Grove Farm and Kaipu Camp, site number 30-11-9301.
3. Kilohana (Gaylord P. Wilcox House), site number 30-11-9339.
4. Lihue Post Office, site number 30-11-9342.
5. Kauai Museum (Albert Spencer Wilcox Building), site number 30-11-9344.
6. Lihue Civic Center, Historic District, site number 30-11-9351.
7. Grove Farm Company Locomotives, site number 30-11-9381.

#### **Anticipated Effects and Mitigative Measures**

Since the project area is on previously disturbed ground, we do not anticipate the existence of any historical or culturally significant resource in the affected area of this project.

In the event that historical or cultural materials are discovered during ground disturbing activities, work in the area will cease immediately and the State Historical Preservation Department will be notified of the discovery and consulted as to the appropriate course of action. Burial finds will be treated in accordance with HAR 12-300 and HRS 6E-43.6. The SHPD will determine the appropriate treatment of the remains and any associated historical or cultural material in consultation with recognized descendants, if any, and the Kauai Island Burial Council.

Construction will not affect any of the historical sites; therefore, no mitigative measures are necessary.

#### **3.7.2 CULTURAL IMPACT**

##### **Existing Conditions**

According to the *Session Laws of Hawaii, Act 50*<sup>28</sup>, an EA should identify and address effects on Hawaii's culture and traditional and customary rights. The only known cultural practices or cultural resources in the project area are those listed in the Cultural Resources section (see section 3.7.1).

#### **Anticipated Effects and Mitigative Measures**

There will be no long-term anticipated effects because the sewer lines will be underground and the new pump station sites will be chosen so there is no cultural impact.

<sup>27</sup> State of Hawaii. Department of Natural Resources, State Historic Preservation Division. Website. <http://www.hawaii.gov/dlnr/hpd/hpgreeting.htm>. Accessed September 2006.

<sup>28</sup> State of Hawaii, Office of Environmental Quality Control. *Session Law of Hawaii, Act 50*. April 26, 2000.

### **3.7.3 PUBLIC SERVICES/INFRASTRUCTURE**

#### **Existing Conditions**

All standard utilities (sewer, water, electricity, gas, communication, cable TV) are available in most places in Lihue. There are several State owned and maintained roads in the project area. These roads are Ahukini Road, Kapule Highway, Kuhio Highway, and Rice Street. All other roads in project area are County of Kauai maintained.

The State owned and operated Lihue Airport is located makai of the Lihue WWTP. Lihue Airport boundaries are shown in Figure 2-8. The State owned and operated Nawiliwili Harbor is located on the southern boundaries of the project area.

#### **Anticipated Effects and Mitigative Measures**

This project expands sewer utilities to unsewered areas and new development in Lihue. Short-term impacts to the utilities are unlikely due to regulatory review of project task planning; however, during construction, unforeseen conditions may result in temporary downtime of a public service.

Short-term construction related effects are anticipated for roadways. No long-term negative impacts are expected.

The anticipated effects of airport runway irrigation using recycled R-1 water include possible increased hazardous wildlife and ponding of plant effluent on airport property. The Federal Aviation Administration (FAA) requires a 10,000-foot buffer zone from hazardous wildlife attractions to the nearest air operations area<sup>29</sup>. The existing WWTP is approximately 2,100 feet from the nearest air operations area. Bermuda grass is proposed to reduce hazardous avian population within the reuse area by limiting nesting grounds and reducing insect population. Therefore, there are no violations to FAA requirements and no long-term effects to hazardous wildlife are expected. It is recommended that bird populations be monitored for any changes after the implementation of the reuse area. It is also recommend that a wildlife damage management biologist be consulted during the design.

The *Guidelines for the Treatment and Use of Recycle Water*<sup>30</sup>, states that for R-1 recycled water, any form of irrigation served by fixed irrigation system supplied by buried piping for turf and landscape irrigation is allowed. No long-term effects are anticipated; therefore, no mitigative measures are necessary.

Another anticipated effect of irrigating the airport runways with recycled water is the possibility of effluent ponding. To prevent ponding, reuse will only be utilized during dry weather. During wet weather periods, injection wells will be utilized to dispose of excess effluent. No negative impacts are expected; therefore, no mitigative measures are required.

<sup>29</sup> Federal Aviation Administration (FAA). Subject: Hazardous Wildlife Attractants On or Near Airports. FAA 150-5200-33A. July 27, 2004.

<sup>30</sup> State of Hawaii, Department of Health, Wastewater Branch. *Guidelines for the Treatment and Use of Recycled Water*. May 15, 2002.

The long-term impact is a beneficial one; recycled water irrigation will reduce the State's dependency on using high quality potable water for irrigation, and the State will be able to maintain a taller growth of grass, which prevents the nesting of birds near the airport. The County will also benefit due to the reduced dependency on injection wells. In addition potable water will be available for public consumption rather than for irrigation purposes. Thus, the long-term impact is beneficial to both the County and the State. In addition, there is no additional potential of discharging wastewater on airport property.

It is recommended that a force main be laid in the shoulder of Kapule Highway. This will require the proposed force main to be strapped to the existing Kapule Highway Bridge or to bridge the Hanamaulu Gulch on a separate, dedicated structure. The way the force main will traverse the Hanamaulu Gulch will be determined during the final design. According to State of Hawaii Department of Transportation, Kapule Highway may be widened in the future to a four-lane divided highway<sup>31</sup>. The timing of the widening is uncertain; therefore further discussion with the Department of Transportation Highways Division Planning Branch is required during design.

#### **3.7.4 TRAFFIC** **Existing Conditions**

This project will not increase traffic counts relative to that of preconstruction conditions; therefore, no traffic study was conducted.

#### **Anticipated Effects and Mitigative Measures**

Construction will occur on paved roads during work hours, nights, or weekends. There will be short-term impacts to traffic during construction. On two lane roads, one lane will allow constricted travel around the immediate work area or temporary detours and associated signage will be used. On one-lane roads, temporary detours and associated signage will be used. The existing roadways will be restored to standard conditions and no long-term impacts are anticipated that would require mitigative measures. All roads will be restored. Therefore, there will be no long-term anticipated effects.

If construction is planned near any public schools, there will be alternative traffic routes and the school principals will be notified. Therefore, there will be no long-term anticipated effects.

#### **3.7.5 RECREATIONAL FACILITIES**

##### **Existing Conditions**

There are several county parks in the immediate vicinity of the project. The other possible recreational activity is beach activities at a nearby beach park. No known hiking trails are within the project area.

##### **Anticipated Effects and Mitigative Measures**

Construction activity will take place in throughout the area's main roads and highways.

<sup>31</sup> State of Hawaii, Department of Transportation (DOT). Response to pre-consultation letter. Subject: Lihue Wastewater Facilities Plan and Environmental Assessment, TMK: Division 4, Zone 3, Sections 2 to 8.

No long-term or cumulative adverse impacts are anticipated. No long-term mitigative measures are required.

### **3.8 SOCIO-ECONOMIC ENVIRONMENT**

#### **3.8.1 DEMOGRAPHICS AND SOCIO-ECONOMIC ENVIRONMENT**

Socio-economic factors such as the economy, land use, population, housing, recreation, and level of available services influence the appropriateness and capacity of wastewater facilities for the communities in the Lihue Basin.

The coastal area of the Lihue Basin is naturally endowed with a pleasant climate, stretches of beautiful sandy beaches and relatively level land. It is not surprising that tourism is one of the primary industries in this area. The sugar industry also is a major industry in the Lihue Basin. The last major economic factor in the Lihue Basin is the United States military.

#### **Existing Conditions**

As of the census of 2005, Lihue has a population of 9820. This population is comprised of 7,700 residents and 2,120 visitors. According to the Census Designated Place, Lihue has a total area of 7.1 square miles. The population density is 898.3 people per square mile.

#### **Anticipated Effects & Mitigation Measures**

During construction, access to residences, businesses, community facilities, or other activities may be controlled in accordance with approved traffic control plans, but not blocked. No relocation of residences, businesses, etc. will occur.

The proposed project should not induce nor hinder economic or population growth in the Lihue area in the short-term, long-term or cumulative in conjunction with any other projects. Single lane closures will be scheduled to allow for vehicular traffic during the day so that residences may travel to and from work and tourists may visit the area. Lane closures are the only mitigation measures anticipated for the short-term. No mitigation measures are necessary for the long-term.

### **3.9 LAND USES**

#### **3.9.1 HAWAII STATE PLAN**

Chapter 226, HRS, also known as the *Hawaii State Plan*<sup>32</sup>, provides long-range planning for the State. This plan is a policy statement for an array of economic, physical and social development issues. Specific portions of the *Hawaii State Plan*<sup>33</sup> related to proposed gravity sewer project is as follows:

**Section 226-11 Objectives and policies for the physical environment- scenic, natural beauty, and historic resources.**

**(a) (2): "Effective protection of Hawaii's unique and fragile environment resources."**

<sup>32</sup> State of Hawaii, HRS, Chapter 226. *Hawaii State Plan*.

<sup>33</sup> *ibid*

**Section 226-11 Objectives and policies for the physical environment- land, air, and water quality.**

**(b) (6):** "Encourage design and construction practices that enhance the physical qualities of Hawaii's communities."

Two objectives of the *Hawaii State Plan* are to protect unique and fragile environmental resources, and encourage design and construction practices that enhance the physical qualities of communities<sup>34</sup>. The proposed project is consistent with both these objectives.

**3.9.2 STATE LAND USE LAW**

The *State Land Use Law*<sup>35</sup>, Chapter 205 of the HRS, classifies all state lands in one of four categories: urban, rural, agriculture and conservational. The state assumes sole management responsibility in the conservation district; county governments assume sole responsibilities in the urban district, and both share responsibilities in the rural and agriculture districts.

**3.9.3 COUNTY OF KAUAI**

Sec. 7-2.4 Public Facilities Plan of the *Kauai General Plan*<sup>36</sup> states:

(a) Public facility plans shall include but not be limited to the following types:

1. A system plan is a long-range comprehensive plan for a public service system that is island-wide in scope. The purpose of the system plan is to establish policy and set priorities for services, facilities, capital improvements, and funding, considering the needs and capabilities of the various geographic areas.
2. A facility plan is a master plan for the development of a specific facility, which may include a single capital improvement project or a series of capital improvements to be undertaken over a longer period of time.

(b) A Public Facilities Plan shall be submitted to the County Council for adoption by resolution.

<sup>34</sup> State of Hawaii, HRS, Chapter 226. *Hawaii State Plan* (1978).

<sup>35</sup> State of Hawaii, HRS, Chapter 205. *Land Use Law* (1961).

<sup>36</sup> County of Kauai. *Kauai General Plan*. 2000.

#### 4.0 **DETERMINATION WITH SUPPORTING FINDINGS AND REASONS**

In accordance with Chapter 343, Hawaii Revised Statutes<sup>37</sup>, this Environmental Assessment characterizes the technical, social and environmental issues related to the Lihue Wastewater Facilities Plan. It identifies potential project impacts to the environment and their significance. It is anticipated that the proposed projects will not exert any significant impacts to the environment. Therefore, a Finding of No Significant Impact<sup>38</sup> (FONSI) is anticipated and an Environmental Impact Statement is not required.

This determination of an anticipated FONSI is based upon thirteen (13) significance criteria listed in HRS §11-200-12 of the *Environmental Impact Statement Rules*<sup>38</sup>. The specific criteria used in making this determination are addressed below:

1. *The proposed project will not involve an irrevocable commitment to loss or destruction of any natural or cultural resource.* The proposed project does not intend to modify any of the historic sites in Lihue. Only the underground sewer system is proposed.
2. *The proposed project will not curtail the range of beneficial uses of the environment.* Construction activities will temporarily interfere with getting around Lihue. A beneficial impact will be extending a utility (sewer) to new developments and existing unsewered areas.
3. *The proposed project will not conflict 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 Project will not damage sensitive natural resources nor emit excessive noise or contaminants. This project will lessen potential for wastewater spills by expending the wastewater system where necessary.
4. *The proposed project does not substantially affect the economic or social welfare of the community or State.* The economic impact to existing unsewered homeowners is the cost to connect to the County lateral. The cost to connect to the lateral for the majority of individual owners is currently approximately \$4,000. The current monthly sewer fee is \$45 per home and the current charge for cesspool waste disposal is \$30 per 1,000 gallons.

Road and lane closures during construction will result in some inconvenience; however, these inconveniences will be temporary and only last during construction. Strategic scheduling of intermittent road closures and providing detours with adequate signage will permit residents and tourists to continue to get to their desired destination during construction.

<sup>37</sup> State of Hawaii, Chapter 343, *Environmental Impact Statements in Hawaii Revised Statutes* (2001).

<sup>38</sup> State of Hawaii, Department of Health, Title 1, Chapter 200, *Environmental Impact Statement Rules in Hawaii Administrative Rules* (2006).

The estimated construction cost is over \$66 million over the next 20 years.

5. ***The proposed project will not substantially affect public health in a negative way.*** The existing sewer residents will continue to benefit from the same level of sewer service. During construction, environmental pollutants will be mitigated to regulated levels by using the appropriate BMPs.
6. ***The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities.*** The sewer improvements will service existing and future users. The population in Lihue is increasing, so the utilities must keep up with developments. The only public facilities affected are the County roads and the State highway where sewer replacements or new sewers are installed. The roads and highway will be restored to its original condition or better in accordance with trench restoration details.
7. ***The proposed project will not involve a substantial degradation of environmental quality.***  
This project will not change the environmental quality of Lihue. During construction, environmental pollutants will be mitigated to regulated levels by using the appropriate BMPs.
8. ***The proposed project is individually limited and cumulatively does not have considerable effect upon the environment nor does it involve a commitment for larger actions.*** Existing cesspools will be redirected to gravity sewers with no negative impacts to the environment. This project is for the entire town of Lihue, so it does not necessitate the requirement for other related projects in Lihue.
9. ***The proposed project will not substantially affect rare, threatened or endangered species, or its habitat.*** The project area is not a known habitat for threatened or endangered flora or fauna species.
10. ***The proposed project will not detrimentally affect air or water quality or ambient noise levels.*** The project will produce short-term gas and particulate emissions from construction vehicle exhaust and dust producing excavation; however, there are no anticipated long-term gas and particulate emissions from the sewer system. Site work will be in accordance with grading permit conditions to minimize erosion, non-point source erosion and dust. BMPs will be utilized to prevent project site runoff from affecting nearby stream water qualities. Air quality and noise levels will not exceed State DOH standards. The project will not result in long-term adverse effects. Upon completion of construction activities, air and water qualities and ambient noise levels will revert to prior levels.
11. ***The proposed project is not located in an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.*** The Coastal Hazard Intensity in Lihue

(Hanamaulu & Nawiliwili area) is average to high for tsunamis, stream flooding, high waves, strong winds, storms, and erosion; however expansion of the existing wastewater is necessary with the new developments.

12. ***The proposed project will not affect scenic vistas.*** The improvements are underground except for the Nawiliwili WWPS and the Pua Loke WWPS. No protected view planes will be impacted by the project.
13. ***The proposed project does not require substantial energy consumption.*** The gravity sewer system will not require any energy consumption to operate. The energy consumption at the WWTP will increase slightly with the improvements and new equipment. The wastewater pump stations will require conventional power to operate and will create a new energy consumption demand; however, this is a necessary public utility. Construction equipment and vehicles require temporary, but substantial energy consumption.

**5.0 CONSULTED AGENCIES DURING THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT**

The following Federal, State and County agencies, as well as, private and community organizations, were consulted directly or indirectly during the preparation of this document. This environmental assessment will be subject to public review for a 30-day period pursuant to HAR Chapter 11-200

**5.1 FEDERAL AGENCIES**

1. Pacific Islands Area State Office USDA Natural Resources Conservation Service
2. State Conservation Resources Conservation Service U.S. Department of Agriculture
3. Civil and Public Works Branch US Army Corps of Engineers
4. Region IX Administrator US EPA
5. Hawaii Federal-Aid Division Federal Highway Administration
6. U.S. Geological Survey
7. Pacific Islands Administrator Department of Interior Fish and Wildlife Services
8. Refugee Division U. S. Fish and Wildlife Services

**5.2 STATE OF HAWAII**

1. Commission of Water Resources Management
2. Department of Agriculture
3. Department of Business, Economic Development & Tourism
4. Superintendent of Education Department of Education
5. Department of Environmental Services
6. Housing and Community Development Corporation of Hawaii
7. Chairman, Hawaiian Homes Commission Department of Hawaiian Home Lands
8. Office of Hawaiian Affairs
9. Department of Health Environmental Planning Office
10. UHM Environmental Center
11. UHM Water Resource Research Center
12. Sea Grant College Program University of Hawaii
13. Na Ala Hele Trails Program Forestry and Wildlife Division, DLNR
14. Office of Conservation and Coastal Lands
15. Department of Land and Natural Resources
16. State Historic Preservation DLNR
17. Kauai Island Burial Council c/o State Historical Preservation Division
18. Department of Transportation
19. District Manager Island of Kauai Lihue Airport
20. Administrator Airports Division Office
21. Kauai District Commercial Harbors
22. Administration, Directory of the Harbors Division DOT Harbor Division
23. DOT Highways Division
24. Kauai District DOT Highways Division

**5.3 COUNTY OF KAUAI**

1. Kauai Fire Department

2. Kauai Police Department
3. Kauai Office of Economic Development
4. Kauai Coastal Zone Management Program Office of Planning
5. Shoreline Setback Variance Office of Planning
6. Office of Planning
7. Department of Public Works County of Kauai
8. Water Department County of Kauai

#### **5.4 PRIVATE AND COMMUNITY ORGANIZATIONS**

1. D.R. Horton Schuler
2. Grove Farm Company, Inc
3. Kauai Lagoons Resort
4. Pacific Funds LLC c/o Attorney Jonathan J. Chun
5. Wilcox Memorial Hospital
6. 1000 Friends of Kauai
7. Bishop Museum
8. Historic Hawaii Foundation
9. Nature Conservancy Kauai Program
10. Sierra Club Hawaii Chapter
11. The Outdoor Circle

#### **5.5 STATE SENATORS AND REPRESENTATIVES**

1. U.S. Senator Daniel Akaka
2. U.S. Senator Daniel Inouye
3. U.S. House of Representative Ed Case

#### **5.6 COUNTY OF KAUAI SENATORS AND REPRESENTATIVES**

1. State Senator-Kauai Gary L. Hooser
2. State Representative-Kauai Ezra R. Kanofo

#### **5.7 COUNTY OF KAUAI MAYOR AND COUNCIL MEMBERS**

1. Mayor Bryan J. Baptiste
2. County Councilmember Bill "Kaipo" Asing
3. County Councilmember Shaylene Iseri-Carvalho
4. County Councilmember Jay Furfaro
5. County Councilmember Daryl W. Kaneshiro
6. County Councilmember Mel Rapozo
7. County Councilmember James Kunane Tokioka
8. County Councilmember JoAnn A. Yukimura

**APPENDIX**

**Appendix A: Pre-consultation Letters**

LINDA LINGLE  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

RODNEY K. HARAGA  
DIRECTOR

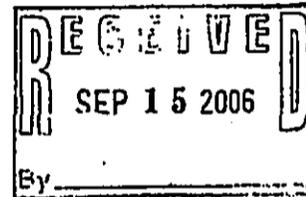
Deputy Directors  
FRANCIS PAUL KEENO  
BARRY FUKUNAGA  
BRENNON T. MORIOKA  
BRIAN H. SEKIUCHI

IN REPLY REFER TO:

STP 8.2269

September 14, 2006

Mr. Bert Saito, P.E.  
Project Manager  
M & E Pacific, Inc.  
100 Pauahi Street, Suite 207  
Hilo, Hawaii 96720



Dear Mr. Saito:

Subject: Lihue Wastewater Facilities Plan and Environmental Assessment  
TMK: Division 4 Zone 3 Section 2 to 8

Thank you for your transmittal requesting our initial review of the subject project. We understand a draft environmental assessment report is being prepared.

Our comments are as follows:

1. Given the close proximity of the Lihue Wastewater Treatment Plant to the Lihue Airport and aircraft operations, the Draft Environmental Assessment (Draft EA) needs to address the potential impacts of wastewater treatment plants attracting wildlife, including birds, that can be hazardous to aircraft operations on or near the airport. See Federal Aviation Administration (FAA) Advisory Circular 150/5200-33A, Hazardous Wildlife Attractants On or Near Airports, for further information and guidance.
2. Another concern is the potential of discharging wastewater on airport property. We are interested in working with the County and the U.S. Department of Agriculture, Wildlife Service, to avoid or minimize any additional hazards to airport and aircraft operations. This is also covered in the FAA Advisory Circular 150/5200-33A.
3. The County wastewater plans should reflect our highways plans to widen Kapule Highway as a four-lane divided highway.
4. Plans to develop infrastructure improvements along and within the highway right-of-way need to be reviewed and approved by our Highways Division Kauai District Office.
5. We would appreciate receiving at least five (5) copies of the Draft EA, when it is completed, for our further review and comment. Also, please keep us informed on the progress on the Wastewater Facilities Plan for the proposed improvements, including review of any report and notifications on any relevant meetings.



METCALF & EDDY | AECOM

M&E Pacific, Inc.  
100 Pauahi Street, Suite 207, Hilo, Hawaii 96720  
T 808.961.2776 F 808.935.5934 www.m-e.com

August 31, 2006

Mr. Steven Kyono, District Engineer  
Kauai District  
DOT Highways Division  
1720 Haleukana Street  
Lihue, HI 96766

Attn: Mr. Fred Reyes

**Subject: Lihue Wastewater Facilities Plan**  
TMK Division 4 Zone 3 Section 2 to 8

On behalf of the County of Kauai, we are preparing a wastewater facilities plan and environmental assessment (EA) for proposed improvements to the Lihue Wastewater System. The current collection system does not have reserve capacity for the proposed developments in Lihue. Two options for the collection system are to replace the existing force main and gravity lines through town with larger force mains and gravity lines or to construct a new force main on Kapule Highway from the Hanamaulu Pump Station. The latter will minimize construction through town; therefore minimizing impact to downtown businesses. We are seeking your input on the feasibility and possible impacts of the proposed new force main.

Your response is greatly appreciated by September 30, 2006. If we do not receive a response by this date, we will assume that you are not aware of any significant impacts in our project area. We intend to publish our Draft EA in the State Office of Environmental Quality Control Bulletin on October 23, 2006. Thank you for your consideration.

Should you have any questions, please do not hesitate to call me at 808-961-2776.

Sincerely,

Bert Saito, P.E.  
Project Manager

Attachments:

cc: Mr. Ed Tschupp, County of Kauai, Department of Public Works.

METCALF & EDDY | AECOM

M&E Pacific, Inc.  
100 Pauahi Street, Suite 207, Hilo, Hawaii 96720  
T 808.961.2776 F 808.935.5934 www.m-e.com

August 11, 2006

SUBJECT: Lihue Wastewater Facilities Plan  
TMK Division 4 Zone 3 Section 2 to 8

On behalf of the County of Kauai, we are preparing a wastewater facilities plan and environmental assessment (EA) for proposed improvements to the wastewater collection and treatment in Lihue town. We are seeking your input on flora, fauna, cultural resources, historical resources, etc., which our project may impact. The project area is shown on the attached figures of the existing Lihue Wastewater System.

Your response is greatly appreciated by September 8, 2006. If we do not receive a response by this date, we will assume that you are not aware of any significant impacts and/or resources in our project area. We intend to publish our Draft EA in the State Office of Environmental Quality Control Bulletin on October 23, 2006. Thank you for your consideration.

Should you have any questions, please do not hesitate to call Ms. Trudy Hamic at 808-529-7246 or me at 808-961-2776.

Sincerely,



Bert Saito, P.E.  
Project Manager

Attachments:

cc: Mr. Ed Tschupp, County of Kauai, Department of Public Works.

LINDA LINGLE  
GOVERNOR OF HAWAII



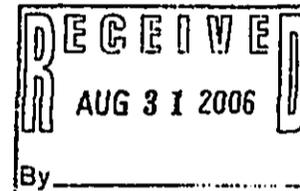
CHYOME L. FUKINO, M.D.  
DIRECTOR OF HEALTH

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

In reply, please refer to:  
EPO-06-141

August 28, 2006

Mr. Bert Saito, P.E.  
M&E Pacific, Inc  
100 Pauahi Street, Suite 207  
Hilo, Hawaii 96720



Dear Mr. Saito:

**SUBJECT: Environmental Assessment (EA) Pre-consultation for Lihue Wastewater Facilities Plan at Lihue, Kauai, Hawaii**  
**TMK: (4) Zone 3 Section 2 to 8**

Thank you for allowing us to review and comment on the subject application. 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 request for pre-consultation regarding improvements to the wastewater collection and treatment system for Lihue town. At this time, we have no major comments to offer. We do recommend that the EA contain a section in the facilities plan that addresses higher degrees of wastewater treatment (R-1 standards) such that the use of treated effluent for irrigation and other non-potable water purposes can be expanded.

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

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](http://www.state.hi.us/health/environmental/env-planning/landuse/landuse.html). Any comments specifically applicable to this application should be adhered to.

Mr. Saito  
August 28, 2006  
Page 2

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

Sincerely,



KELVIN H. SUNADA, MANAGER  
Environmental Planning Office

c: EPO  
WWB

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND

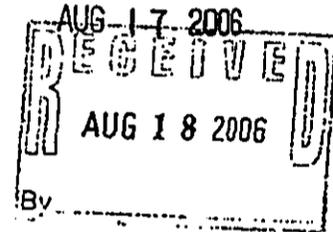
DEAN NAKANO  
ACTING DEPUTY DIRECTOR - WATER

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

REF:OCCL:TM

Correspondence: KA 07-23

Bert Saito, P.E.  
Project Manager  
M&E Pacific, Inc.  
100 Pauahi Street, Suite 207  
Hilo, Hawaii 96720



Dear Mr. Saito,

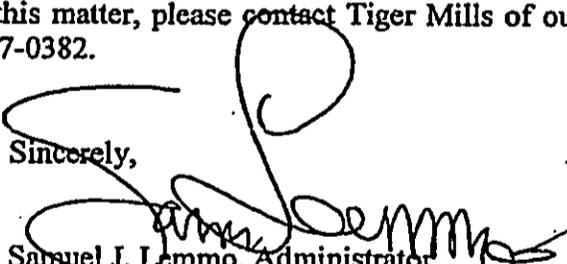
SUBJECT: Lihue Wastewater Facilities Plan, Lihue Town, TMK:(4) 3-2-008:

The Office of Conservation and Coastal Lands (OCCL) is in receipt of your correspondence dated August 11, 2006; regarding the Lihue Wastewater Facilities Plan. The majority of the area does not appear to be located within the Conservation District. Please contact the State Land Use Commission for a determination of the State Land Use Districts within your project area.

Should you be proposing improvements that occur in the Conservation District, these proposals should be reviewed by the OCCL to make a determination as to what type of approvals may be required. In addition, you may wish to consult with other Divisions of the Department of Land and Natural Resources.

Should you have any questions regarding this matter, please contact Tiger Mills of our Office of Conservation and Coastal Lands at (808) 587-0382.

Sincerely,

  
Samuel J. Lemmo, Administrator  
Office of Conservation and Coastal Lands

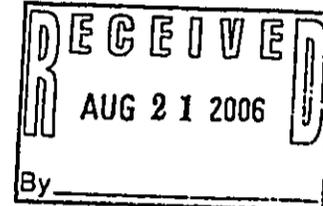
c: Chairperson  
KDLO



## United States Department of the Interior

U.S. GEOLOGICAL SURVEY

Pacific Islands Water Science Center  
677 Ala Moana Blvd., Suite 415  
Honolulu, HI 96813  
Phone: (808) 587-2400/Fax: (808) 587-2401



August 16, 2006

Bert Saito, P.E.  
Project Manager  
M&E Pacific, Inc.  
100 Pauahi Street, Suite 207  
Hilo, Hawaii 96720

Dear Bert Saito:

Subject: Lihue Wastewater Facilities Plan  
TMK Division 4 Zone 3 Section 2 to 8

The staff of the U.S. Geological Survey, Pacific Islands Water Science Center, has reviewed the attached Figures 1-1 and 1-2 forwarded in your letter dated August 11, 2006, regarding preparation of the subject Lihue Wastewater Facilities Plan and Environmental Assessment for proposed improvements to the wastewater collection and treatment in Lihue town.

We are not aware of any significant impacts and/or resources in your project area on flora, fauna, cultural resources, historical resources, etc., at this time.

We appreciate the opportunity to participate in the review process.

Sincerely,

Gordon Tribble  
Center Director

METCALF & EDDY | AECOM

M&E Pacific, Inc.  
100 Pauahi Street, Suite 207, Hilo, Hawaii 96720  
T 808.961.2776 F 808.935.5934 www.m-e.com

August 11, 2006

U.S. Geological Survey  
677 Ala Moana Blvd.  
Honolulu, HI 96813

U.S. GEOLOGICAL SURVEY  
PWSC  
HONOLULU, HAWAII

AUG 14 2006

**RECEIVED**

**SUBJECT:** Lihue Wastewater Facilities Plan  
TMK Division 4 Zone 3 Section 2 to 8

To Whom It May Concern:

On behalf of the County of Kauai, we are preparing a wastewater facilities plan and environmental assessment (EA) for proposed improvements to the wastewater collection and treatment in Lihue town. We are seeking your input on flora, fauna, cultural resources, historical resources, etc., which our project may impact. The project area is shown on the attached figures of the existing Lihue Wastewater System.

Your response is greatly appreciated by September 8, 2006. If we do not receive a response by this date, we will assume that you are not aware of any significant impacts and/or resources in our project area. We intend to publish our Draft EA in the State Office of Environmental Quality Control Bulletin on October 23, 2006. Thank you for your consideration.

Should you have any questions, please do not hesitate to call Ms. Trudy Hamic at 808-529-7246 or me at 808-961-2776.

Sincerely,

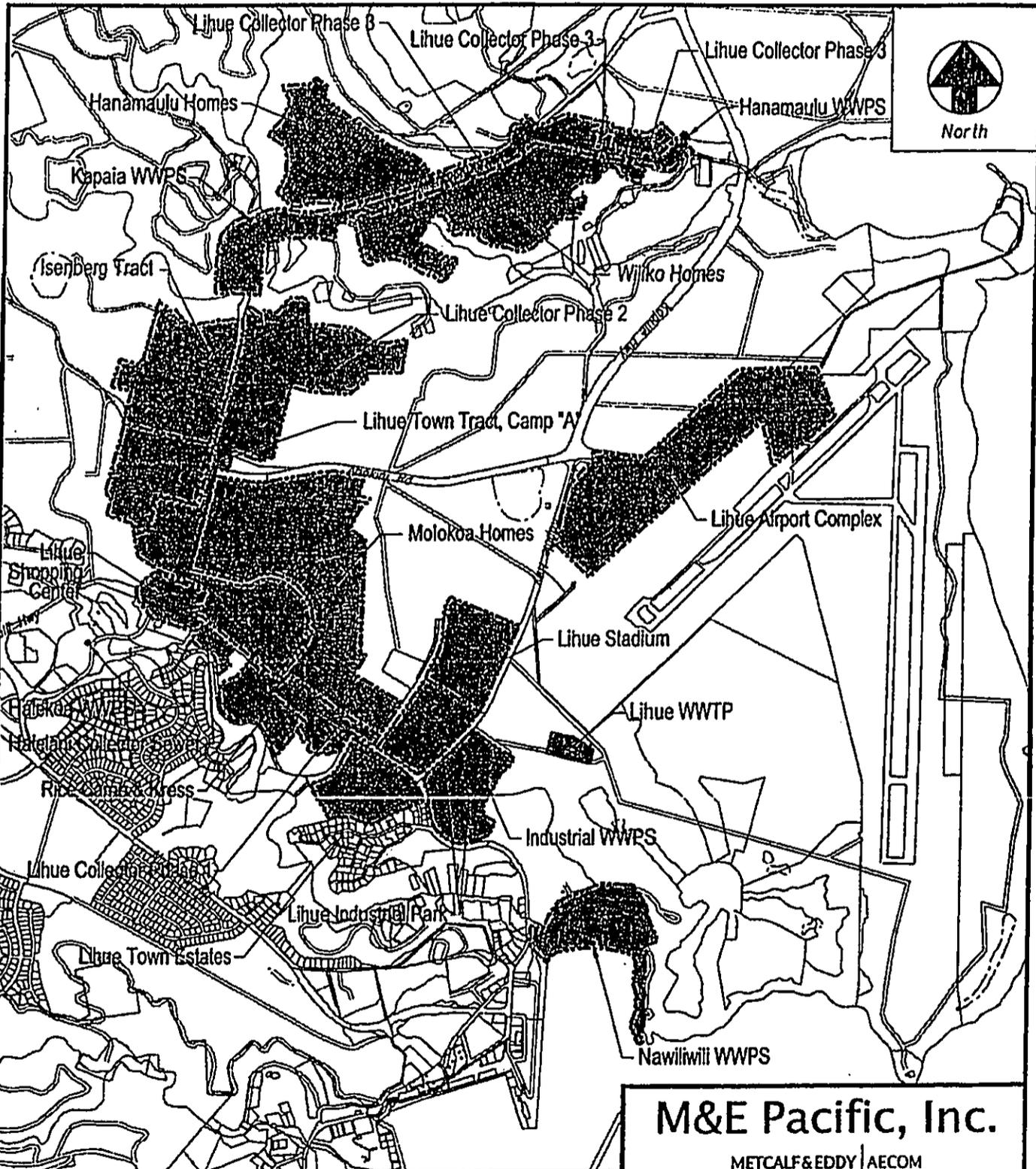


Bert Saito, P.E.  
Project Manager

Attachments:

cc: Mr. Ed Tschupp, County of Kauai, Department of Public Works.





M&E Pacific, Inc. / Metcalf & Eddy, Inc. / AECOM  
 Lihue, HI 96761  
 Date: 04/10/08  
 Project: Lihue Wastewater System EA  
 Drawing: Figure 1-2  
 Scale: 1" = 2000'  
 Author: [illegible]  
 Checker: [illegible]  
 Approver: [illegible]

**LEGEND**  
 ■■■■ TRIBUTARY AREA BOUNDARY



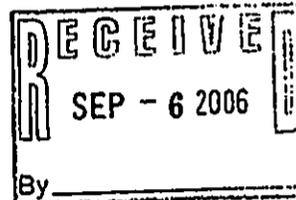
**M&E Pacific, Inc.**  
 METCALF & EDDY | AECOM

DAVIES PACIFIC CTR, STE 1902 • 841 BISHOP ST, HONOLULU, HAWAII 96813

**Figure - 1-2**  
**Lihue Facility Plan EA**  
 General Plan Of The Existing Wastewater System

April 10, 2008

**HISTORIC  
HAWAII  
FOUNDATION**



September 5, 2006

Bert Saito, P.E.  
Project Manager  
Lihue Wastewater Facilities Plan  
M&E Pacific, Inc.  
100 Pauahi Street, Suite 207  
Hilo, HI 96720

**RE: Lihue Wastewater Facilities Plan**

Dear Mr. Saito:

Thank you for referring this matter to Historic Hawaii Foundation for review and comment. HHF is currently unaware of any historic resources that would be affected by the proposal at this early phase of environmental assessment.

Unless historic resources are discovered during additional research or design, HHF does not have concerns about the proposal. If additional information becomes available, HHF would like to review that data and may have input and comment at that time. Please send us a copy of the Draft EA when it becomes available.

Please update your records to have future correspondence sent to:

Kiersten Faulkner  
Executive Director  
Historic Hawaii Foundation  
P.O. Box 1658  
Honolulu, HI 96806

Very truly yours,

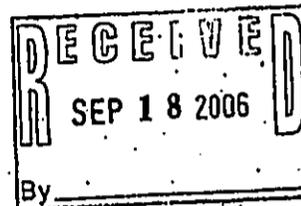
A handwritten signature in cursive script that reads "Kiersten Faulkner".

Kiersten Faulkner, AICP  
Executive Director





Water has no substitute..... Conserve it



September 13, 2006

Mr. Bert Saito, P. E.  
M&B Pacific, Inc.  
100 Pauahi Street, Suite 207  
Hilo, HI 96720

Dear Mr. Saito:

Subject: Inquiry: Lihue Wastewater Facilities Plan, TMK: 4-3-02: to TMK: 4-3-08; Lihue, Kauai, Hawaii

This letter is in response to your August 11, 2006 inquiry letter.

The Department of Water (DOW) has no comments at this time concerning the flora, fauna, cultural or historical resources which your project may affect.

If you have any questions, please contact Mr. Keith Aoki at (808) 245-5418.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregg Fujikawa".

Gregg Fujikawa  
Chief of Water Resources and Planning

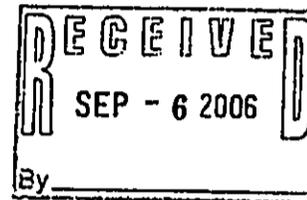
KAmll  
4-3-02 to 08 M&B 26-325

LINDA LINGLE  
GOVERNOR

PATRICIA HAMAMOTO  
SUPERINTENDENT



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P.O. BOX 2300  
HONOLULU, HAWAII 96804



OFFICE OF THE SUPERINTENDENT

September 7, 2006

Mr. Bert Saito, Project Manager  
M&E Pacific, Inc.  
100 Pauahi Street, Suite 207  
Hilo, Hawaii 96720

Dear Mr. Saito:

Subject: Wastewater Improvements, Lihue, Kauai, TMK: 4-3-2 to 8

The Department of Education requests that the Draft Environmental Assessment (DEA) describe how close any construction work for the improvement of the Lihue wastewater system will come to any public school. We believe Wilcox Elementary, Kauai High and King Kaumualii Elementary schools may be close enough to areas of planned construction that there may be noise, dust, and traffic impacts to students and staff.

We would like to know about possible impacts and proposed mitigations. It would be extremely helpful if the school principals were notified well in advance of traffic pattern changes that could affect the schools.

We look forward to reviewing the DEA. If you have any questions, please call Heidi Meeker of the Facilities Development Branch at (808) 733-4862.

Very truly yours,

A handwritten signature in cursive script that reads "Patricia Hamamoto".

Patricia Hamamoto  
Superintendent

PH:jmb

c: Randolph Moore, Acting Assistant Superintendent, OBS  
Duane Kashiwai, Public Works Manager, FDB  
Daniel Hamada, CAS, Kapaa/Kauai/Waimea Complex Area

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

LINDA LINGLE  
GOVERNOR OF HAWAII

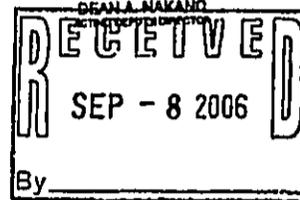


STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
P.O. BOX 621  
HONOLULU, HAWAII 96809

September 7, 2006

PETER T. YOUNG  
CHAIRPERSON

MEREDITH J. CHING  
JAMES A. FRAZIER  
NEAL S. FUJIMURA  
CHIYOME L. FUKINO, M.D.  
LAWRENCE H. MIKE, M.D., J.D.  
STEPHANIE A. WHALEN



REF: Lihue Wastewater Facilities Plan.0a.dr

Mr. Bert Saito, P.E.  
Project Manager  
M&E Pacific, Inc.  
100 Pauahi St., Ste. 207  
Hilo, HI 96720

Dear Mr. Saito:

SUBJECT: Lihue Wastewater Facilities Plan  
TMK Division 4 Zone 3 Section 2 to 8

FILE NO.:

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://www.hawaii.gov/dlnr/cwrn>.

Our comments related to water resources are checked off below.

- 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- 3. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM: Additional information and forms are available at [www.hawaii.gov/dlnr/cwrn/forms.htm](http://www.hawaii.gov/dlnr/cwrn/forms.htm).

- 4. The proposed water supply source for the project is located in a designated ground-water management area, and a Water Use Permit is required prior to use of ground water.
- 5. A Well Construction Permit(s) is (are) required before the commencement of any well construction work.
- 6. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.

DRF-GN 03/02/2006

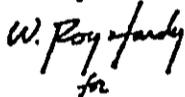
Mr. Bert Saito  
Page 2  
September 7, 2006

- 7. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 8. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 9. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a stream channel.
- 10. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
- 11. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 12. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
- 13. We recommend that the report identify feasible alternative non-potable water resources, including reclaimed wastewater.
- OTHER:  
The project site is located in the Hanamaulu Aquifer System Area, which has a sustainable yield of 40 million gallons per day. Perched water is the most common type of groundwater, but basal water occurs near the coast. The estimated sustainable yield includes stream flow that once was groundwater.

If the planned improvement result in the need for additional water from new wells or stream diversions, the appropriate permits and approvals from the Commission will be required.

If there are any questions, please contact Lenore Nakama at 587-0218.

Sincerely,



DEAN A. NAKANO  
Acting Deputy Director

LN:ss

DRF-1A 04/15/2005

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

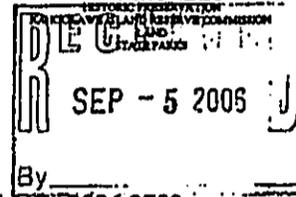
PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCES MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND

DEAN NAKANO  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCES MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING

FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
LAND AND NATURAL RESOURCES



LOG NO: 2006.2789  
DOC NO: 0608NM45  
Archaeology

August 30, 2006

Bert Saito, Project Manager  
M&E Pacific Inc  
100 Pauahi Street, Suite 207  
Hilo, Hawaii 96720

Dear Mr. Saito:

**SUBJECT: Chapter 6E-42 Historic Preservation Review – Preliminary Comments on Draft EA for Lihue Wastewater Facilities Plan, Lihue, Kauai, TMK: (4) 3-2 through 8**

The aforementioned project is for wastewater facilities plan and EA in the former cane lands.

We believe that "no historic properties will be affected," because:

- Intensive cultivation has altered the land
- Residential development/urbanization has altered the land
- Previous grubbing/grading has altered the land
- An accepted archaeological inventory survey (AIS) found no historic properties
- SHPD previously reviewed this project and mitigation has been completed
- Other: *No subsurface excavation in previously-undisturbed sediments is included in this project.*

In the event that historic resources, including human skeletal remains, are identified during routine construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Division, Kauai Section, needs to be contacted immediately at (808) 742-7033.

Aloha,

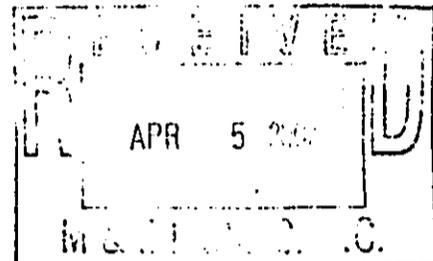
Melanie Chinen, Administrator  
State Historic Preservation Division

NM:

**Appendix B: Draft EA Comments and Responses**



Water has no substitute..... Conserve it



April 2, 2007

UID #5288

Ms. Trudy Hamic  
M&E Pacific, Inc.  
841 Bishop Street, Suite 1900  
Honolulu, HI 96813

Dear Ms. Hamic:

Subject: Draft Environmental Assessment (DEA), Lihue Wastewater Treatment Plant (WWTP) Facilities Plan, Lihue, Kauai, Hawaii, TMK: 3-5-01:030

This letter is in response to your March 28, 2007 transmittal letter. Thank you for your transmittal of the DEA for the subject project for our review.

We have no objections to the proposed expansion of the collection system, upgrading the existing Lihue Wastewater Treatment Plant, and upgrading of the effluent disposal system. However, the applicant is made aware that requests for additional water meter(s) or increase in water meter size will be dependent on the adequacy of the source, storage, and transmission facilities existing at that time.

If you have any questions, please contact Mr. Edward Doi (808) 245-5417.

Sincerely,

*Edward Doi*

for Gregg Fujikawa  
Chief of Water Resources and Planning

UF:all  
3-5-01:030 DEAM WWTP Facilities Plan (3-20-07)

c: Mr. Edward Tschupp, Division of Wastewater, Department of Public Works

LINDA LINGIE  
GOVERNOR OF HAWAII



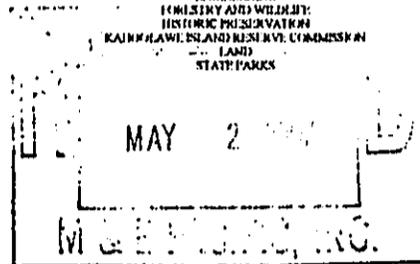
STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

PETER T. YOUNG  
CHAIRMAN  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSIONER OF WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND

AQUATIC RESOURCES  
PLANNING AND CLEAN RECREATION  
BUREAU OF SURVEYANCE  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
EMERGENCY  
HAWAIIAN WILDLIFE  
HISTORIC PRESERVATION  
KAUAI ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS



April 20, 2007

Trudy Hamic  
M&E Pacific Inc.  
841 Bishop Street, Suite 1900  
Honolulu, Hawaii 96813

LOG NO: 2007.1147  
DOC NO: 0704NM26  
Archaeology

Dear Ms. Hamic:

**SUBJECT: Chapter 6E-42 Historic Preservation Review – DEA Lihue Wastewater Treatment Plant Facilities Plan  
Lihue, Kauai  
TMK: (4) 3-5-001: 030**

The aforementioned project is for a wastewater facility located in Lihue.

We believe that “no historic properties will be affected” by this undertaking because:

- a) intensive cultivation has altered the land
- b) residential development/urbanization has altered the land
- c) previous grubbing/grading has altered the land
- d) an acceptable archaeological assessment or inventory survey found no historic properties
- e) this project has gone through the historic review process, and mitigation has been completed
- f) other:

In the event that historic resources, including human skeletal remains, are identified during the construction activities, all work must cease within the immediate vicinity of the find, the find shall be protected from additional disturbance, and the State Historic Preservation Division, Kauai Section, needs to be contacted immediately at (808) 742-7033.

Aloha,

  
Melanie Chinen, Administrator  
State Historic Preservation Division

NM:rtp

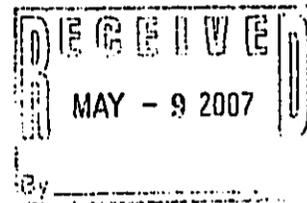
c: Genevieve Samonson, OEQC  
David Chung, DAGS

LINDA LINGLE  
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON  
DIRECTOR

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL  
235 SOUTH BERETANIA STREET  
LEIOPAPA A KAMEHAMEHA, SUITE 702  
HONOLULU, HAWAII 96813  
Telephone (808) 586-4185  
Facsimile (808) 586-4186  
Electronic Mail: [OEQC@doh.hawaii.gov](mailto:OEQC@doh.hawaii.gov)



May 7, 2007

Mr. Edward Tschupp  
Department of Public Works  
4444 Rice Street, Suite 500  
Lihu'e, Hawai'i 96766

Mr. Bert Saito  
M&E Pacific, Inc.  
100 Pauahi Street, Suite 207  
Hilo, Hawai'i 96720

Dear Messrs. Tschupp and Saito:

The Office of Environmental Quality Control has reviewed the draft environmental assessment for the Lihue Wastewater Treatment Plant Facilities Plan, Tax Map Key: 4-3-5-001:030 and various TMK's in the service area, in the judicial district of Lihu'e. The Office of Environmental Quality Control has no comments to offer at this time.

Thank you for the opportunity to comment. If there are any questions, please call Mr. Leslie Segundo, Environmental Health Specialist, at (808) 586-4185.

Sincerely,

A handwritten signature in cursive script that reads "Genevieve Salmonson".  
GENEVIEVE SALMONSON  
Director of Environmental Quality Control

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

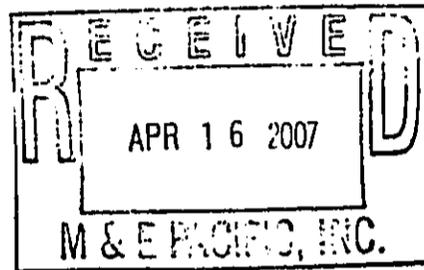
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

PETER T. YOUNG  
CHIEF PERMITS  
HAWAII LAND AND NATURAL RESOURCES  
SYSTEMS AND WATER RESOURCES MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR

ASIAN REMEDIATION  
WATER AND WASTE TREATMENT  
PERMITS COMPLIANCE  
SYSTEMS AND WATER RESOURCES MANAGEMENT  
SYSTEMS AND WASTE TREATMENT  
(MWH/ERM)  
MINISTRY AND WASTE  
HAWAIIAN LAND AND NATURAL RESOURCES  
LAND  
STATE PARKS

April 12, 2007



M&E Pacific, Inc.  
841 Bishop Street Suite 1900  
Honolulu, Hawaii 96813

Attention: Ms. Trudy Hamic

Gentlemen:

Subject: Draft Environmental Assessment for Lihue Wastewater Treatment Plant  
Facilities Plan, Lihue, Kauai, Tax Map Key: (4) 3-5-1:30

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

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

Sincerely,

Russell Y. Tsuji  
Administrator

Vertical stamp or marking on the right edge of the page.

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

March 29, 2007

PETER I. YOUNG  
COMMISSIONER  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
DEPUTY COMMISSIONER

RECEIVED  
LAND DIVISION

2007 APR 12 A 9 31

DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

MEMORANDUM

TO: DLNR Agencies:  
\_\_\_ Div. of Aquatic Resources  
\_\_\_ Div. of Boating & Ocean Recreation  
\_\_\_ Engineering Division  
\_\_\_ Div. of Forestry & Wildlife  
\_\_\_ Div. of State Parks  
\_\_\_ Div. of Water Resource Management  
\_\_\_ Office of Conservation & Coastal Lands  
x Land Division – Kauai District

FROM: Russell Y. Tsuji  
SUBJECT: Draft Environmental Assessment for Lihue Wastewater Treatment Plant Facilities Plan  
LOCATION: Lihue, Kauai, Tax Map Key: (4) 3-5-1:30  
APPLICANT: M&E Pacific, Inc. on behalf of County of Kauai, Department of Public Works

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by April 13, 2007.

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

Attachments

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

PH1:55:22

Signed: [Signature]  
Date: 4/13/2007

APR 2 2007

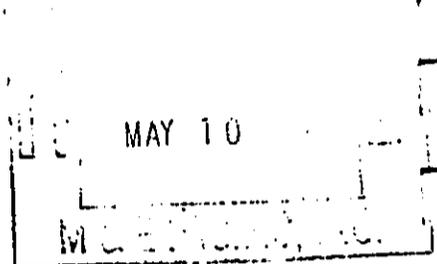
DLNR KOLE ROUD

PHONE (808) 594-1888



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

FAX (808) 594-1865



HRD07/2675B

May 1, 2007

Trudy Hamic  
M&E Pacific, Inc.  
841 Bishop Street, Suite 1900  
Honolulu, HI 96813

**RE: Draft Environmental Assessment for the Lihue Wastewater Treatment Plant Facilities Plan, Lihue, Kaua'i, TMK (4) 3-5-001-030.**

Dear Trudy Hamic,

The Office of Hawaiian Affairs (OHA) is in receipt of your March 29, 2007 submission and offers the following comments:

Our staff recommends that the applicant contact Kanani Kagawa of OHA's Kaua'i office as she may have more intimate knowledge of the area of potential adverse impact. Thank you for your continued correspondence.

OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or [jessey@oha.org](mailto:jessey@oha.org).

Aloha,

A handwritten signature in black ink, appearing to read "Clyde W. Nāmu'o".

Clyde W. Nāmu'o  
Administrator

C: Kanani Kagawa  
OHA Community Affairs Coordinator (Kaua'i)  
3-3100 Kuhio Hwy., Suite C4  
Lihue, HI 96766-1153

METCALF & EDDY | AECOM

M&E Pacific, Inc.  
841 Bishop Street, Suite 1900  
Honolulu, Hawaii 96813  
T 808.521.3051 F 808.524.0246 www.m-e.aecom.com

Mr. Barry Fukunaga  
State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, HI 96813

May 17, 2007

Dear Mr. Fukunaga,

**Subject: Lihue Wastewater Treatment Plant Facilities Plan  
Draft Environmental Assessment (DEA)  
TMK: (4) 3-5-001:030**

Thank you for your comments in letter to STP 8.2479 dated May 9, 2007. The County plans to coordinate the location of the proposed force main with DOT during design.

Thank you again for your comments.

Yours sincerely,



Trudy Hamic

Attach.

cc: Edward Tschupp  
Bert Saito

LINDA LINGLE  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

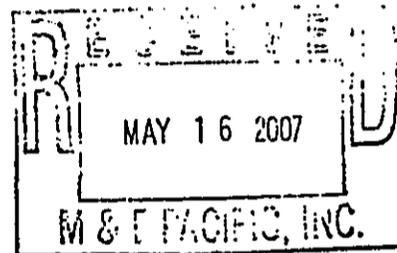
BARRY FUKUNAGA  
INTERIM DIRECTOR

Deputy Directors  
FRANCIS PAUL KEENO  
BRENNON T. MORIOKA  
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.2479

May 9, 2007



Ms. Trudy Hamic  
M & E Pacific, Inc.  
841 Bishop Street, Suite 1900  
Honolulu, Hawaii 96813

Dear Ms. Hamic:

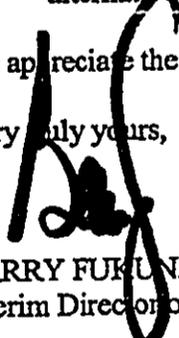
Subject: Lihue Wastewater Treatment Plant Facilities Plan  
Draft Environmental Assessment (DEA)  
TMK: (4) 3-5-001: 030

This is to update and supplement our prior comments in letter STP 8.2269 dated September 14, 2006 (copy attached) contained in Appendix A of the DEA.

- Comments #1 and #2 have been satisfactorily addressed in the DEA.
- Comments #3 and #4 will need further discussion with our Highways Division Planning Branch. While we do plan to widen Kapule Highway to four lanes in the future, the timing of its completion is uncertain at this time. Should the proposed wastewater collection system through Kapule Highway and over Hanamaulu Gulch need to be constructed prior to the highway improvements, the County may need to find an alternative route across the gulch.

We appreciate the opportunity to provide our comments.

Very truly yours,

  
BARRY FUKUNAGA  
Interim Director of Transportation

Attach.

c: Ian K. Costa, Kauai Planning Department

LINDA LINGLE  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

RODNEY K. HARAGA  
DIRECTOR

Deputy Directors  
FRANCIS PAUL KEENO  
BARRY FUKUNAGA  
BRENNON T. MORIOKA  
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.2269

September 14, 2006

Mr. Bert Saito, P.E.  
Project Manager  
M & E Pacific, Inc.  
100 Pauahi Street, Suite 207  
Hilo, Hawaii 96720

Dear Mr. Saito:

Subject: Lihue Wastewater Facilities Plan and Environmental Assessment  
TMK: Division 4 Zone 3 Section 2 to 8

Thank you for your transmittal requesting our initial review of the subject project. We understand a draft environmental assessment report is being prepared.

Our comments are as follows:

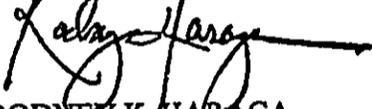
1. Given the close proximity of the Lihue Wastewater Treatment Plant to the Lihue Airport and aircraft operations, the Draft Environmental Assessment (Draft EA) needs to address the potential impacts of wastewater treatment plants attracting wildlife, including birds, that can be hazard to aircraft operations on or near the airport. See Federal Aviation Administration (FAA) Advisory Circular 150/5200-33A, Hazardous Wildlife Attractants On or Near Airports, for further information and guidance.
2. Another concern is the potential of discharging wastewater on airport property. We are interested in working with the County and the U.S. Department of Agriculture, Wildlife Service, to avoid or minimize any additional hazards to airport and aircraft operations. This is also covered in the FAA Advisory Circular 150/5200-33A.
3. The County wastewater plans should reflect our highways plans to widen Kapule Highway as a four-lane divided highway.
4. Plans to develop infrastructure improvements along and within the highway right-of-way need to be reviewed and approved by our Highways Division Kauai District Office.
5. We would appreciate receiving at least five (5) copies of the Draft EA, when it is completed, for our further review and comment. Also, please keep us informed on the progress on the Wastewater Facilities Plan for the proposed improvements, including review of any report and notifications on any relevant meetings.

Mr. Bert Saito, P.E.  
Page 2  
September 14, 2006

STP 8.2269

We appreciate the opportunity to provide comments.

Very truly yours,



RODNEY K. HARAGA  
Director of Transportation

c: Ian Costa, Kauai Planning Department

**END**

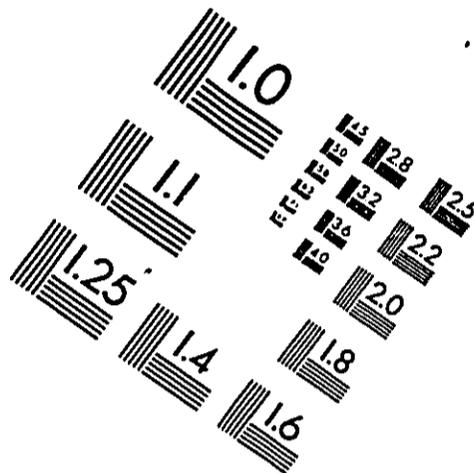
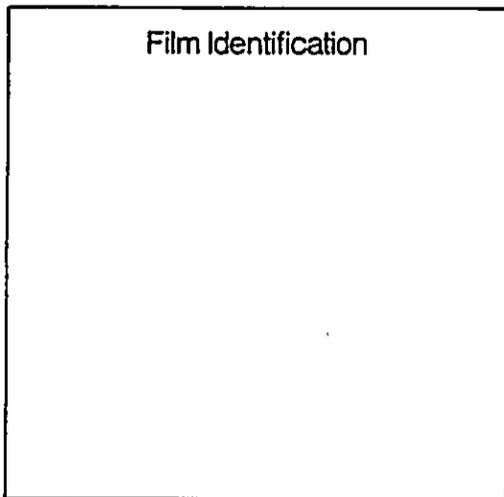
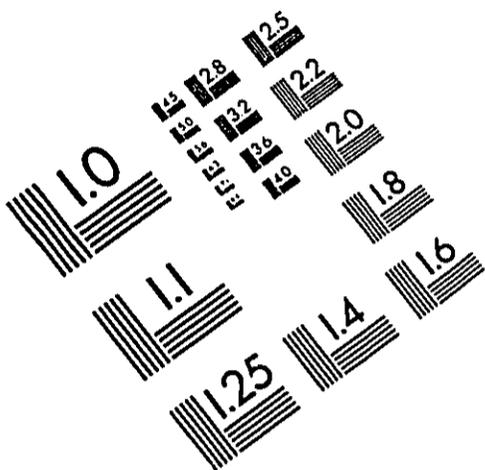
CERTIFICATION

I HEREBY CERTIFY THAT THE MICROPHOTOGRAPH APPEARING IN THIS REEL OF  
FILM ARE TRUE COPIES OF THE ORIGINAL DOCUMENTS.

2007  
DATE

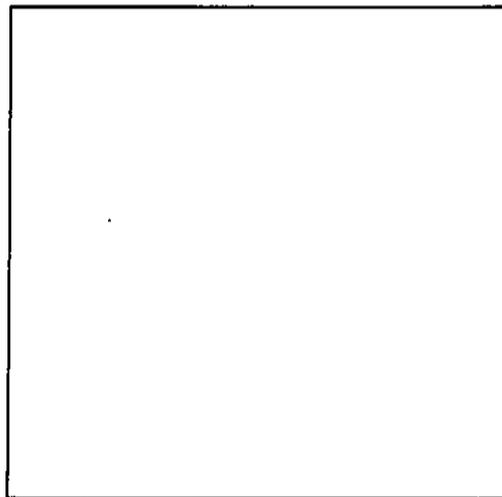
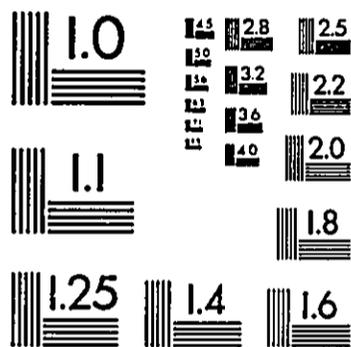
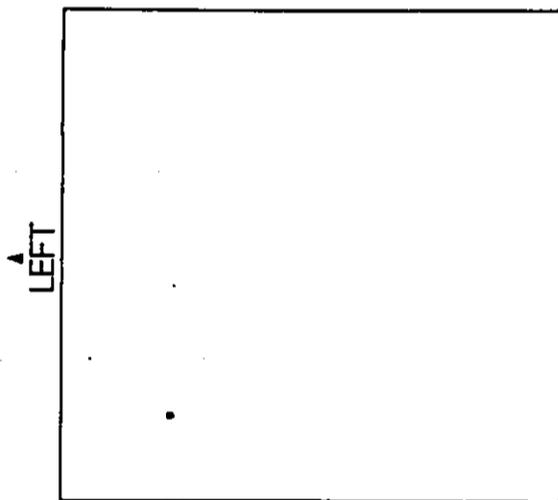
*Alfon Takasagaki*  
SIGNATURE OF OPERATOR

TOP



A & P International  
715/262-5788 • Fax 715/262-3823  
577 Locust Street • Prescott, WI 54021  
Web Site <http://www.zimc.com/apintl>

PRECISION<sup>SM</sup> RESOLUTION TARGETS

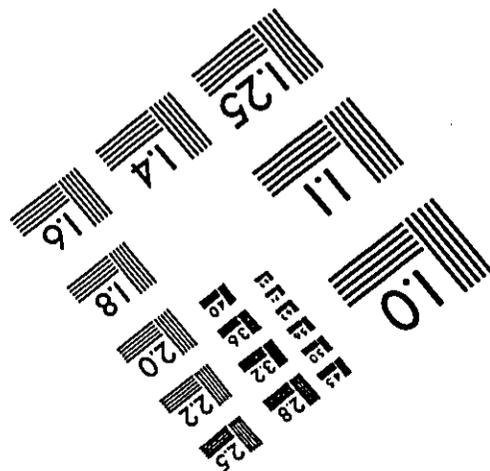
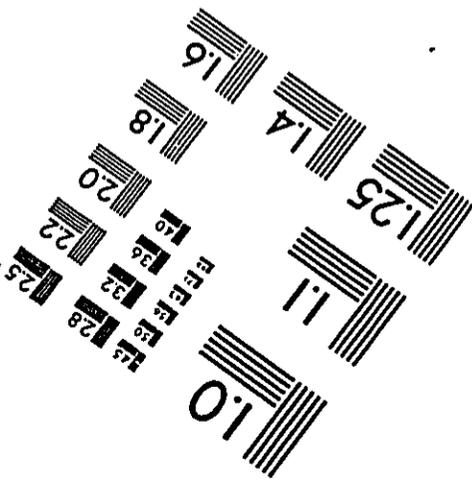


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PA-3 8½"x11" PAPER PRINTED GENERAL TARGET

DENSITY TARGET



ADVANCED MICRO-IMAGE SYSTEMS HAWAII