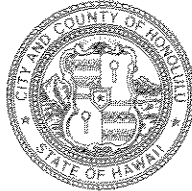


✓ 118 IEN

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR



RANDALL K. FUJIKI, AIA
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

2001/CLOG-1440 (TH)

June 14, 2001

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

Dear Ms. Salmonson:

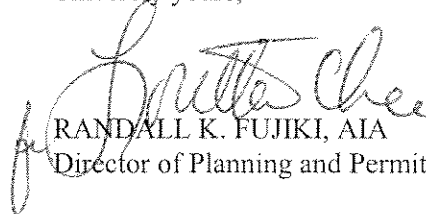
Acceptance Notice for the Final Environmental Impact Statement (FEIS)
for the Proposed West Mamala Bay Facilities Plan, Ewa, Central Oahu,
Primary Urban Center, Oahu, Hawaii, 9-1-01 through 12, 17, 19, 21 - 25,
27 - 30, 32 - 112; 9-2 - 03, 06 - 33; 9-4-01, 02, 05 - 161; 9-5-01, 02,
04 - 69; 9-6-02 - 08; 9-7-19 - 27, 29, - 96; 9-8-01 - 18, 20, 73; and 9-9-01 - 77

We are notifying you of our acceptance of the subject FEIS for the proposed West Mamala Bay Facilities Plan project. The Department of Planning and Permitting has determined that the subject FEIS is acceptable under the procedures established in Chapter 343 of the Hawaii Revised Statutes.

Pursuant to procedures contained in Section 11-200-23(c), Chapter 200, Title 11 (Environmental Impact Statement Rules), Department of Health Administrative Rules, we request that this acceptance notice be published in the July 8, 2001 Environmental Notice.

Attached is a copy of our acceptance report. Should you have any questions, please contact Tim Hata of our staff at 527-6070.

Sincerely yours,


RANDALL K. FUJIKI, AIA
Director of Planning and Permitting

RKF:lh
g:\dlu\general\lpd\feis\2001\wmbfeis.wpd

Attachment

cc: Department of Design and Construction (Attn: Mr. William K. Liu, P.E.)
Department of Environmental Services
Wilson Okamoto & Associates, Inc. (Attn: Mr. Earl Matsukawa, AICP)

2001- Dahu- FEIS-

APR 8 2001

West Mamala Bay

FILE COPY

Final Environmental Impact Statement

West Mamala Bay Facilities Plan



Prepared For:

**City and County of Honolulu
Department of Design and Construction**

Prepared By:

**Wilson Okamoto & Associates, Inc.
and
Brown and Caldwell Consultants**


March 2001

**FINAL
ENVIRONMENTAL IMPACT STATEMENT
FOR THE
WEST MAMALA BAY FACILITIES PLAN**

**Ewa, Central Oahu, and Primary Urban Center Districts
Oahu, Hawaii**

PROPOSING AGENCY: City and County of Honolulu
Department of Design and Construction
650 South King Street
Honolulu, Hawaii 96813

ACCEPTING AUTHORITY: City and County of Honolulu
Department of Planning and Permitting
650 South King Street
Honolulu, Hawaii 96813

RESPONSIBLE OFFICIAL: This document has been prepared under my
direction pursuant to the requirements of
Chapter 343, Hawaii Revised Statutes
 3/20/01
Rae M. Loui, P.E., Director Date
Department of Design and Construction
City and County of Honolulu

PREPARED BY: Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

March 2001

TABLE OF CONTENTS

	<u>Page</u>
PREFACE	P-1
SUMMARY	S-1
1. INTRODUCTION	1-1
1.1 Purpose	1-1
1.2 Background	1-2
1.3 Study Area	1-2
2. PROJECT NEED	2-1
2.1 Collection System	2-1
2.2 Treatment System	2-1
2.3 Disposal System	2-8
2.4 Odor and Noise Control Systems	2-8
2.5 309 Consent Decree	2-8
3. PROJECT DESCRIPTION	3-1
3.1 Collection System Overview	3-1
3.1.1 West Interceptor System	3-3
3.1.2 East Interceptor System	3-3
3.1.2.1 Upgrade System Alternative	3-6
3.1.2.2 Flow Equalization Within the System Alternative	3-6
3.2 Hybrid Alternative	3-17
3.3 Isolated System Deficiencies	3-17
3.4 Unsewered Areas	3-18
3.4.1 Honouliuli Unsewered Area	3-18
3.4.2 Ewa Beach Unsewered Area	3-18
3.5 Treatment and Disposal	3-31
3.5.1 Odor Control Program	3-31
3.5.2 Liquid Treatment	3-34
3.5.3 Solids Treatment and Disposal	3-34
3.5.4 Effluent Disposal and Reuse	3-34
3.6 Summary of Costs for Preliminary Recommendations	3-35
4. EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES	4-1
4.1 Climate	4-1
4.2 Physiography	4-1
4.2.1 Geology and Topography	4-1
4.2.2 Soils	4-5
4.2.2.1 Soil Associations	4-5

TABLE OF CONTENTS (continued)

	<u>Page</u>
4.2.2.2 Agricultural Lands of Importance to the State of Hawaii	4-6
4.2.2.3 Soil Contamination	4-8
4.3 Hydrology	4-9
4.3.1 Groundwater	4-9
4.3.2 Surface Water	4-11
4.3.3 Coastal Waters	4-15
4.3.4 Flood/Tsunami Hazard	4-16
4.3.5 Earthquake/Seismic Hazards	4-22
4.4 Natural Environment	4-23
4.4.1 Flora	4-23
4.4.2 Fauna	4-23
4.4.3 Wetlands	4-24
4.5 Solid Waste	4-27
4.6 Air Quality	4-28
4.7 Noise	4-31
4.8 Traffic	4-32
4.9 Infrastructure and Utilities	4-35
4.9.1 Water System	4-35
4.9.2 Drainage System	4-36
4.9.3 Electrical System	4-39
4.9.4 Communication System	4-40
4.9.5 Gas System	4-40
4.10 Historic and Archaeological Sites	4-41
4.11 Socio-Economic Characteristics	4-44
4.12 Recreational Resources	4-45
5. RELATIONSHIP TO PLANS, POLICIES AND CONTROLS	5-1
5.1 Hawaii State Plan	5-1
5.2 State Functional Plans	5-5
5.2.1 State Recreation Functional Plan	5-5
5.3 State Land Use District	5-6
5.4 State Coastal Zone Management Program	5-10
5.5 City and County of Honolulu General Plan	5-12
5.6 City and County of Honolulu Development Plan	5-15
5.6.1 Ewa Development Plan	5-16
5.6.2 Development Plan Common Provisions	5-18
5.6.3 Development Plan Special Provisions	5-19
5.6.4 Development Plan Land Use Map	5-20
5.6.5 Development Plan Public Facilities Map	5-20
5.6.6 Public Infrastructure Maps	5-25

TABLE OF CONTENTS (continued)

	<u>Page</u>
5.7 City and County of Honolulu Land Use Ordinance and Zoning	5-26
5.8 City and County of Honolulu Special Management Area	5-26
5.9 Permits and Approvals	5-33
6. ALTERNATIVES.....	6-1
6.1 No Action Alternative.....	6-1
6.2 Collection System	6-1
6.3 Liquid Treatment	6-10
6.4 Solids Treatment and Disposal	6-10
6.5 Effluent Disposal and Reuse	6-11
6.6 Alternative Wastewater Management Scenarios.....	6-11
7. IRRETRIEVABLE AND IRREVERSIBLE COMMITMENTS OF RESOURCES	7-1
8. RELATIONSHIP BETWEEN LOCAL AND SHORT-TERM USES OF HUMANITY'S ENVIRONMENT AND THE MAINTENANCE OF LONG-TERM PRODUCTIVITY	8-1
8.1 Short-Term Uses.....	8-1
8.2 Long-Term Productivity	8-1
9. PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED.....	9-1
9.1 Short-Term Effects	9-1
9.2 Long-Term Effects.....	9-2
10. UNRESOLVED ISSUES	10-1
11. CONSULTATION.....	11-1
11.1 Pre-Assessment Consultation	11-1
11.2 Parties Consulted During The EISPN	11-16
11.3 Parties To Be Consulted During The Draft EIS	11-53
12. REFERENCES.....	12-1

LIST OF FIGURES

	<u>Page</u>
Figure 1-1 Study Area	1-4
Figure 2-1 Honouliuli Area- Map 1 of 2 (Ewa and Ewa Beach) Collection System Deficiencies	2-2
Figure 2-2 Honouliuli Area- Map 2 of 2 (Kapolei, Ko Olina, and Makakilo) Collection System Deficiencies	2-3
Figure 2-3 Pearl City Area Collection System Deficiencies	2-4
Figure 2-4 Waipahu Area- Map 1 of 2 (Waipahu, Kunia, Waikele, and Waipio) Collection System Deficiencies	2-5
Figure 2-5 Waipahu Area- Map 2 of 2 (Mililani) Collection System Deficiencies	2-6
Figure 3-1 East and West Interceptor Systems	3-2
Figure 3-2 System Deficiencies East Interceptor System	3-4
Figure 3-3 Alternative Upgrade System East Interceptor System	3-7
Figure 3-4 Flow Equalization Within System Alternative East Interceptor System	3-10
Figure 3-5 Halawa WWPS Storage Facility- Flow Equalization Within System Alternative	3-13
Figure 3-6 Waimalu WWPS Storage Facility - Flow Equalization Within System Alternative	3-14
Figure 3-7 Pearl City WWPS Storage Facility - Flow Equalization Within System Alternative	3-15
Figure 3-8 Mililani PTF Storage Facility -Flow Equalization Within System Alternative	3-16
Figure 3-9 Isolated Deficiencies and Preliminary Recommendations Honouliuli Area	3-19
Figure 3-10 Isolated Deficiencies and Preliminary Recommendations Pearl City Area	3-22
Figure 3-11 Isolated Deficiencies and Preliminary Recommendations Waipahu Area (Map 1 of 2)	3-25
Figure 3-12 Isolated Deficiencies and Preliminary Recommendations Waipahu Area (Map 2 of 2)	3-26
Figure 3-13 Honouliuli Unsewered Area	3-29
Figure 3-14 Ewa Beach Unsewered Area	3-30
Figure 3-15 Recommended Wastewater Management Scenario	3-32
Figure 3-16 Recommended Layout for Honouliuli WWTP	3-33
Figure 4-1 Mean Annual Rainfall	4-2
Figure 4-2 Location Map	4-3
Figure 4-3 Location of Wastewater Pump Stations and Major Streams	4-12

LIST OF FIGURES (continued)

	<u>Page</u>
Figure 4-4 Ewa WWPS Flood Map.....	4-18
Figure 4-5 West Loch WWPS Flood Map.....	4-19
Figure 4-6 Pearl City WWPS Flood Map	4-20
Figure 4-7 Waiawa WWPS Flood Map.....	4-21
Figure 4-8 Wetlands Map	4-25
Figure 5-1 State Land Use Map	5-7
Figure 5-2 Ewa Development Plan Urban Land Use Map.....	5-17
Figure 5-3 DP Land Use Map – Pearl City Area.....	5-21
Figure 5-4 DP Land Use Map – Waipahu Area - Map 1 of 2 (Waipahu, Kunia, Waikele, and Waipio).....	5-22
Figure 5-5 DP Land Use Map – Waipahu Area - Map 2 of 2 (Mililani).....	5-23
Figure 5-6 Zoning Map – Honouliuli Area	5-27
Figure 5-7 Zoning Map – Pearl City Area	5-28
Figure 5-8 Zoning Map – Waipahu Area – Map 1 of 2 (Waipahu, Kunia, Waikele, and Waipio).....	5-29
Figure 5-9 Zoning Map – Waipahu Area – Map 2 of 2 (Mililani)	5-30
Figure 5-10 Special Management Area Map.....	5-32
Figure 6-1 Replacement System Alternative East Interceptor System	6-3

LIST OF TABLES

	<u>Page</u>
Table 2-1 Sewer Flow Analysis System Modeled Flows Existing and Projected Peak Wet Weather Flows (in mgd)	2-7
Table 3-1 System Deficiencies – East Interceptor System.....	3-5
Table 3-2 Upgrade System Alternative East Interceptor System	3-8
Table 3-3 Flow Equalization Within System Alternative East Interceptor System.....	3-11
Table 3-4 Isolated System Deficiencies and Preliminary Recommendations Honouliuli Area.....	3-20
Table 3-5 Isolated Deficiencies and Preliminary Recommendations Pearl City Area.....	3-23
Table 3-6 Isolated System Deficiencies and Preliminary Recommendations Waipahu Area.....	3-27
Table 3-7 Capital Cost For Scenario 2, Moderate Upgrade	3-35
Table 3-8 Annual Operation and Maintenance Cost for Scenario 2, Moderate Upgrade	3-36

LIST OF TABLES (continued)

	<u>Page</u>
Table 3-9 Summary of Preliminary Recommendations West Mamala Bay Facilities Plan.....	3-37
Table 4-1 Eligible and Registered Historical and Archaeological Sites In the Study Area	4-42
Table 4-2 Existing, Future and Proposed Recreational and Open Space Resources in the Study Area.....	4-46
Table 5-1 State Land Use, Zoning, Development Plan and SMA Designations by Proposed Improvement.....	5-8
Table 6-1 Replacement System Alternative	6-4
Table 6-2 Alternatives Assessment East Interceptor System.....	6-7
Table 6-3 Total Annual Cost of Wastewater Management Scenarios	6-12

PREFACE

This Final Environmental Impact Statement (EIS) is prepared pursuant to Chapter 343, Hawaii Revised Statutes, and Title 11, Chapter 200, Administrative Rules, Department of Health, State of Hawaii. The City and County of Honolulu Department of Design and Construction proposes to undertake various long-term improvements to the wastewater collection, treatment and disposal system, serving the West Mamala Bay Subdistrict of the Mamala Bay Sewerage District. The City Department of Design and Construction, the proposing agency, has determined that the proposed action requires the preparation of an EIS.

The proposed improvements and alternatives addressed in this Final EIS were developed and presented as preliminary recommendations in the Pre-Final Plan Report of the West Mamala Bay Facilities Plan published in December 1999.

The Draft EIS was filed with the Office of Environmental Quality Control on September 13, 2000 and notice of its availability for public review and comment was published in *The Environmental Notice* on September 23, 2000. The 45-day public comment period ended on November 8, 2000.

This Final EIS incorporates responses to comments received on the Draft EIS, and testimony at a public hearing on November 14, 2000.

Summary

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

SUMMARY

- Proposing Agency:** City and County of Honolulu
Department of Design and Construction
- Accepting Authority:** City and County of Honolulu
Department of Planning and Permitting
- Location:** Ewa, Central, and a portion of the Primary Urban
Center Districts, Oahu, Hawaii
- Tax Map Keys:** 9-1-01 through 12, 17, 19, 21 – 25, 27 – 30, 32 – 112;
9-2-03, 06 – 33; 9-4-01, 02, 05 – 161; 9-5-01, 02, 04 –
69; 9-6-02 through 08; 9-7-19 through 27, 29 – 96; 9-
8-01 through 18, 20, 73; and 9-9-01 through 77.
- Proposed Action:** The proposed action consists of various long-term
improvements to the wastewater collection, treatment
and disposal system serving the West Mamala
Subdistrict of the Mamala Bay Sewerage District.
Collected wastewater is treated at the Honouliuli
Wastewater Treatment Plant (WWTP) and disposed
of primarily through Barbers Point Deep Ocean
Outfall. The purpose of the proposed improvements,
including alternative collection system improvements,
is to accommodate wastewater flows projected
through 2020. The projected flows include those
generated by existing and proposed development in
the service area, as well as peak wet-weather flows
generated by the infiltration and inflow of storm water
in the collection system.
- Determination:** The proposing agency has determined that the
proposed action requires the preparation of an
environmental impact statement, based on the
significance criteria set forth in Chapter 200, Title 11,
State of Hawaii Department of Health Administrative
Rules.

**Significant Beneficial
and Adverse Impacts
and Proposed
Mitigation Measures:**

Surface and Coastal Waters: The proposed and alternative wastewater facilities will have beneficial long-term water quality impacts on surface and coastal receiving waters. The provision of flow equalization facilities (for temporary wastewater storage during heavy storms) and collection system improvements to reduce infiltration and inflow will reduce the probability of spills and bypasses to the surface and coastal waters during periods of heavy rainfall, thereby improving the level of water quality.

Wetlands: Only the Pearl City wastewater pump station equalization facility alternative would be located in the vicinity of wetlands associated with the Waiawa units of the Pearl Harbor National Wildlife Refuge. In the long-term, potential adverse impacts to wetlands will be reduced by the proposed wastewater collection system improvements which will improve surface and coastal water quality, as discussed above.

Short-Term Noise, Air Quality and Traffic Impacts: Construction activities associated with the proposed and alternative improvements will result in unavoidable temporary impacts in the vicinity of construction sites. Such impacts include noise from construction vehicles and equipment, dust from grading and excavation, exhaust emissions from construction vehicles and equipment, and temporary disruption of traffic and on-street parking. Properties anticipated to be most impacted by construction activities are those residences and businesses located adjacent to and along proposed and alternative wastewater collection system improvements. Construction noise impacts will be mitigated to some degree by compliance with the provisions of the State Department of Health Administrative Rules, Title 11, Chapter 46, Community Noise Control. Potential air quality impacts during construction will be mitigated to some degree by compliance with the State DOH Administrative Rules, Title 11, Chapter 60, Air

Pollution Control. Construction contractors will be required to minimize potential vehicular and pedestrian traffic impacts through appropriate traffic control measures and safety devices. The degree and duration of construction impacts at any particular location along major roadways will be minimized by phasing construction in segments.

The alternative of constructing underground flow equalization facilities at the Aloha Stadium parking lot and at Blaisdell Park will temporarily limit public use of affected areas.

Long-Term Air Quality Impacts: Odors associated with wastewater treatment at the Honouliuli WWTP will be reduced through proposed improvements for foul air containment, capture and treatment, a recommended buffer zone around the plant and a change in solids treatment process.

Alternatives Considered:

A range of potential wastewater collection, treatment and disposal alternatives were considered, as documented in the Pre-Final Plan Report of the West Mamala Bay Facilities Plan. The proposed and alternative wastewater facility improvements assessed herein are based on the preliminary recommendations of the Pre-Final Facilities Plan Report.

Unresolved Issues:

Project Plans and Design: Design development for the proposed and alternative wastewater improvements will proceed over the next two decades. Changes in the concepts may be required in response to changing assumptions and public input.

Environmental Impacts: Detailed assessment of short and long-term environmental impacts of specific wastewater improvements may be required in the future pursuant to Chapter 343, HRS. As required, such assessments will be based on future design development of specific wastewater projects.

Funding of Improvements: Funding required for the construction of specific wastewater projects may vary depending on the final design of each project, bidding conditions, and other factors.

Necessary Permits and Approvals: Land use and environmental permits and approvals will be required to construct the various proposed and alternative projects. Determination of required permits and approvals will be made during subsequent detailed planning and design phases for each project.

Phasing of Improvements: The actual construction phasing of individual wastewater projects is unresolved as it will be largely dependent on project priority. Additionally, future changes to the City's land use plans and policies affecting build-out capacity cannot be anticipated, nor can the actual rate of population growth. Such changes may impact both the need for and timing of wastewater projects proposed to increase future capacity.

**Compatibility With
Land Use Plans
and Policies:**

The proposed and alternative wastewater facility improvements will generally conform with the various applicable land use plans, policies and regulatory controls, including, but not limited to, the Hawaii State Plan, State Recreation Functional Plan, State Land Use District, State Coastal Zone Management Program, and the City and County of Honolulu's General Plan, Development Plans (DP), proposed Central Development Plan, and Land Use Ordinance.

The proposed and alternative wastewater facility improvements are consistent with the respective State Urban, Agricultural and Conservation District classifications. Proposed and alternative wastewater improvements fall within areas designated Urban and Agricultural.

The proposed and alternative wastewater improvements are consistent with the respective City Development Plan area policies.

According to the City Land Use Ordinance, wastewater facilities are permitted uses in all zoning districts; however, if a proposed facility exceeds the affected districts' development standards (i.e., height, setbacks, etc.), a Waiver of Requirements would need to be obtained from the City Department of Planning and Permitting.

Required Permits and Approvals:

The following is a list of permits and approvals which may be required prior to construction and operation of specific wastewater facility improvements:

Federal

U.S. Army Corps of Engineers

- Department of the Army

State of Hawaii

Department of Health

- National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Associated with Construction Activity
- NPDES General Permit for Discharges Associated with Construction Activity Dewatering
- Section 401 Water Quality Certification
- Noise Permits
- Air Quality Permits
- Disability and Communication Access Board (Review pursuant to Americans with Disabilities Act Accessibility Guidelines (ADAAG))

Department of Land and Natural Resources Land Division

- Conservation District Use Permit

Department of Land and Natural Resources Historic Preservation Division

- Chapter 6E, HRS Historic Preservation

Office of Planning

- Coastal Zone Management (CZM) Program Consistency Review

Department of Transportation

- Permit to Perform Work Within State Highways

City and County of Honolulu

Department of Planning and Permitting

- Environmental Impact Statement
- Special Management Area (SMA) Use Permit
- Development Plan Public Facilities Map Amendment
- Flood Hazard Development Approval
- Waiver of Requirements
- Building Permit
- Construction Dewatering Permit
- Demolition Permit
- Electrical Permit
- Plumbing Permit
- Sidewalk/Driveway Work Permit
- Grading and Drainage Permits
- Permit to Excavate Public Right-of-Way
- Grubbing Permit
- Drainage Plan Approval

Board of Water Supply

- Water and Water System Requirements
- Water Connection Approval

Department of Transportation Services

- Street Usage Permit

Utility Companies

- Utility Service Requirements
- Permit Regarding Work on Utility Lines

Chapter 1

Introduction

1. INTRODUCTION

1.1 Purpose

The City and County of Honolulu Department of Design and Construction (DDC) is preparing a wastewater facilities plan for the West Mamala Bay Subdistrict of the Mamala Bay Sewerage District. The West Mamala Bay Subdistrict extends from Halawa toward West Beach and from Ewa to Central Oahu. This area is primarily served by the City's existing Honouliuli Wastewater Treatment Plant (WWTP). The purpose of the West Mamala Bay Facilities Plan is to provide a long-range strategy for accommodating the collection, treatment and disposal of wastewater from this subdistrict.

Preparation of West Mamala Bay Facilities Plan was prompted by City and County of Honolulu General Plan (1992) objective and policy encouraging development in this subdistrict. Specifically, the General Plan states the following:

I. Population

Objective C

To establish a pattern of population distribution that will allow the people of Oahu to live and work in harmony.

Policy 2

Encourage development within the secondary urban center at Kapolei and the Ewa and Central Oahu urban-fringe areas to relieve developmental pressures in the remaining urban-fringe and rural areas and to meet housing needs not readily provided in the primary urban center.

Kapolei, Ewa and the high-growth areas of Central Oahu, including Mililani, are within the West Mamala Bay Subdistrict.

Most of the existing and planned developments within the subdistrict are served by, or will be served by the Honouliuli WWTP, including pockets of older developments that are still served by cesspools or septic systems.

This Final Environmental Impact Statement (EIS) was prepared to inform interested parties and solicit input on preliminary recommendations for improvements presented in the Pre-Final Report of the West Mamala Bay Facilities Plan published in December 1999. The Draft EIS was filed with the Office of Environmental Quality Control on September 13, 2000 and notice of its availability was published in *The Environmental Notice* on September 23, 2000. The 45-day public comment period ended on November 8, 2000.

This Final EIS incorporates responses to comments received on the Draft EIS, and testimony at the public hearing of November 14, 2000.

1.2 Background

The West Mamala Bay Facilities Plan is being prepared through three documents and the EIS process set forth in Chapter 343 Hawaii Revised Statutes (HRS), progressively leading toward final recommendations for wastewater system improvements:

- a. The Interim Facilities Plan Report, published in May, 1999 established the context for the subsequent development and examination of facility alternatives. Included in the plan were a discussion of the regulatory regime governing wastewater services, a summary description and assessment of the existing wastewater collection, treatment and disposal system, a projection of future wastewater service needs, and a review of alternatives to meet those needs. A public informational meeting was conducted on the Interim Plan on June 9, 1999 to disseminate information contained in the plan and to solicit discussion and input.
- b. The Pre-Final Facilities Plan Report builds upon the Interim Plan by examining the most feasible alternatives for meeting projected wastewater service needs and making preliminary recommendations on the preferred alternatives. In conjunction with the publication of the Pre-Final Facilities Plan, public informational meetings were conducted on January 19 and 27, 2000 to disseminate information on the preliminary recommendations and to solicit discussion and input.
- c. The Final EIS assesses the overall environmental impacts of implementing the preliminary recommendations. The Final EIS was prepared and processed in compliance with the requirements of Chapter 343, HRS.
- d. The Final Facilities Plan Report builds upon the Pre-Final Facilities Plan Report and Final EIS by recommending a strategy for developing or improving wastewater collection, treatment and disposal facilities to meet projected service demands. The strategy will include a preliminary timetable for implementation and order-of-magnitude budget estimates.

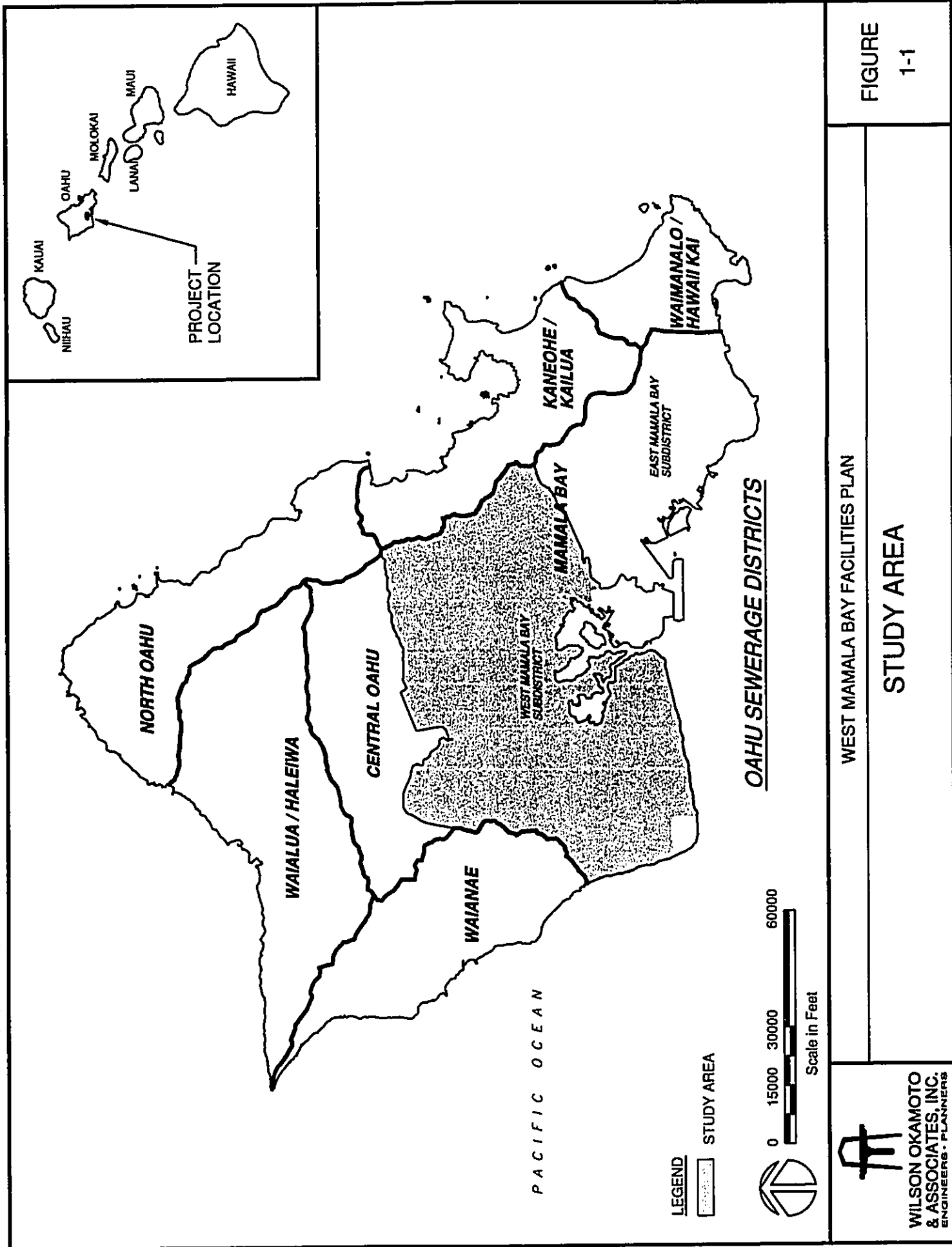
1.3 Study Area

The West Mamala Bay Facilities Plan Study Area extends from Halawa toward West Beach and from Ewa to Central Oahu (see Figure 1-1). Included in the Study Area are areas currently served by the Honouliuli WWTP; areas where future developments will be served by the WWTP; and, a few remaining areas currently

served by cesspools or septic systems that will be served by the WWTP in the future. Notably, the Study Area:

- Excludes the U.S. Navy facilities at Pearl Harbor that are currently served by the Navy's Fort Kamehameha WWTP.
- Excludes Campbell Industrial Park, which will continue to be served by private wastewater collection, treatment and disposal systems. The planned Campbell Industrial Park expansion areas, however, are within the Study Area and will be served by the Honouliuli WWTP.
- Includes the Kalaeloa Community Development District (Formerly Naval Air Station Barbers Point (NASBP)). However, only 1.5 mgd, the amount of wastewater the U.S. Navy had previously contracted with the City to receive for treatment, is considered in the wastewater flow analysis. The State Barbers Point Reuse Commission is currently examining future wastewater collection and treatment needs associated with its planning efforts. Therefore, recommendations developed through the current facilities planning effort should be regarded in light of those needs, when they are determined.
- Includes Mililani Town. Since 1990, wastewater formerly treated at the Mililani WWTP has been diverted to the Honouliuli WWTP.
- Excludes Wahiawa Town, Schofield Barracks, Whitmore Village and the U.S. Naval Computer and Telecommunications Area Master Station-Pacific (NCTAMS PAC). The City had previously considered alternatives for conveying wastewater from the Wahiawa WWTP (including flows from Wahiawa, Whitmore Village and NCTAMS PAC) and the Schofield Barracks WWTP to the Honouliuli WWTP for treatment and/or disposal through its ocean outfall. These alternatives were examined but eventually abandoned.

STUDY.DWG 15:40 05/01/00 L:\DWG\3152-02\FIGURES



WEST MAMALA BAY FACILITIES PLAN

STUDY AREA

FIGURE 1-1

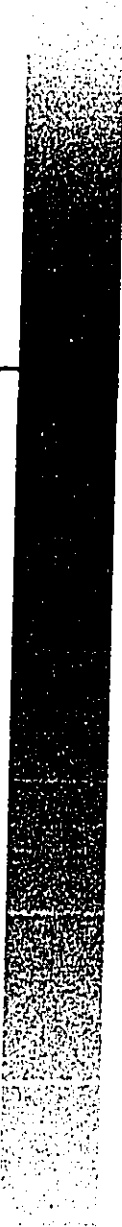


WILSON OKAMOTO & ASSOCIATES, INC. ENGINEERS • PLANNERS



Chapter 2

Project Need



2. PROJECT NEED

Existing and future needs related to the wastewater collection, treatment and disposal system for the Honouliuli WWTP were assessed as the basis for facilities planning. These assessments were based on current population data and population projections prepared by the City Department of Planning and Permitting (DPP). The population projections extend through 2020 and, thus, establish the planning horizon for the West Mamala Bay Facilities Plan.

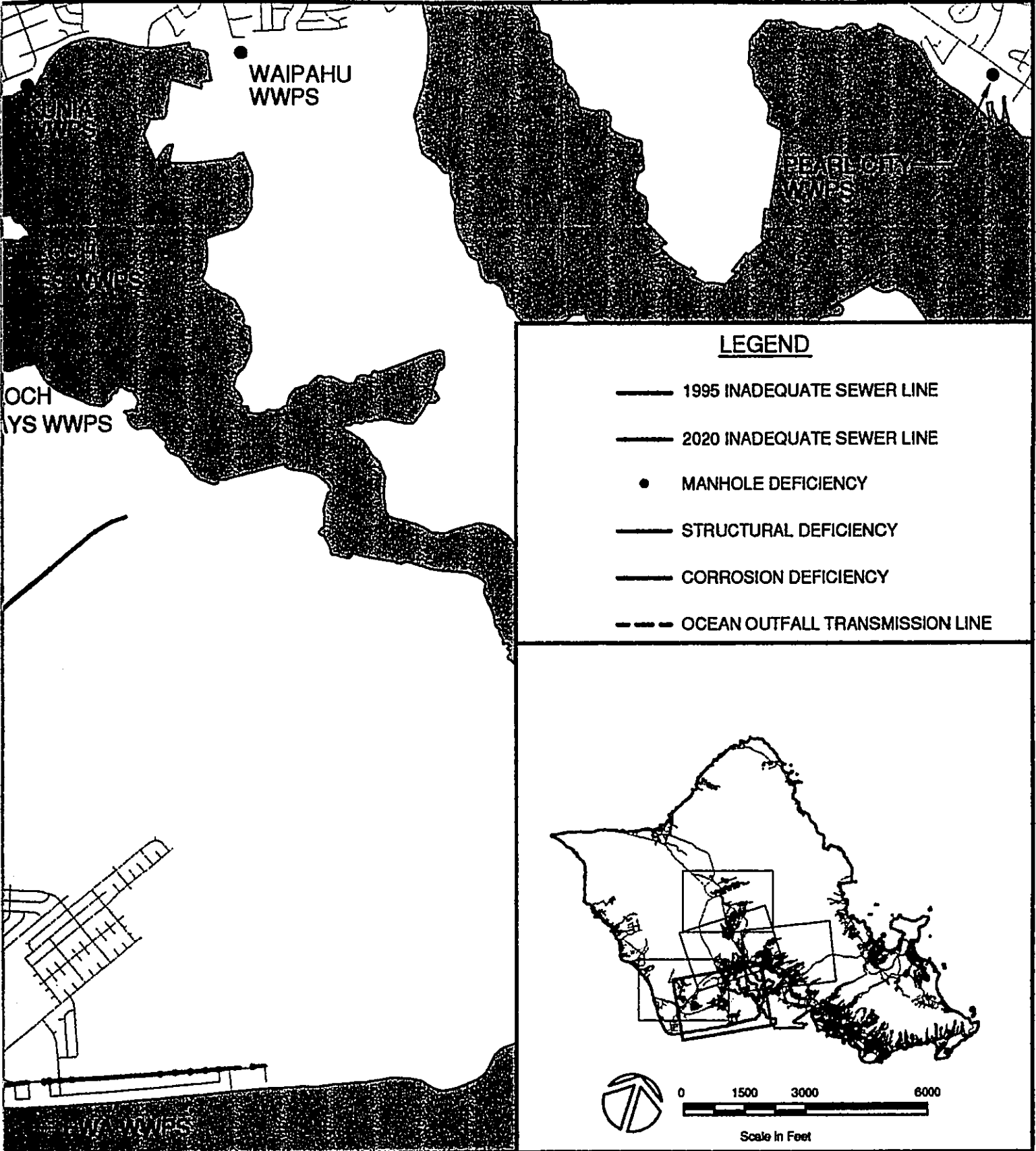
2.1 Collection System

The Honouliuli wastewater collection system is comprised of a network of gravity lines, pump stations and force mains that collect and convey wastewater to the Honouliuli WWTP for treatment. The major lines of the wastewater collection system were assessed by inputting the City DPP's population data to the City's Sewer Flow Analysis System (SFAS) model to project Average Dry Weather Flow (ADWF). The SFAS model was developed to determine the available capacity of the wastewater system to accommodate flows and includes a hydraulic assessment of the system's capacity. Since wastewater systems can be additionally taxed by infiltration of groundwater and inflow of runoff during storms, the effect of a 2-year 6-hour "design storm" on the wastewater system was modeled to project Peak Wet Weather Flow (PWWF). The collection system assessment also included findings of a condition assessment conducted for a significant portion of the wastewater collection system. The condition assessment identified areas where age and corrosion have affected the structural integrity of the system. Structural deficiencies in manholes and pipes include defects that threaten the collapse of these facilities. Such defects may include misalignments and cracks, typically resulting from ground shifting and poor construction, as well as advanced corrosion of concrete and reinforcing steel as a result of exposure to hydrogen sulfide gas. Corrosion deficiencies may also include non-structural defects that could pose a safety hazard, such as damage to rungs within a manhole and damage to rims supporting manhole covers.

Deficient sewerlines and manholes are shown in Figures 2-1 to 2-5. These include sewerlines that have inadequate capacity to accommodate existing and projected flows as well as manholes and sewerlines with structural or corrosion deficiencies.

2.2 Treatment System

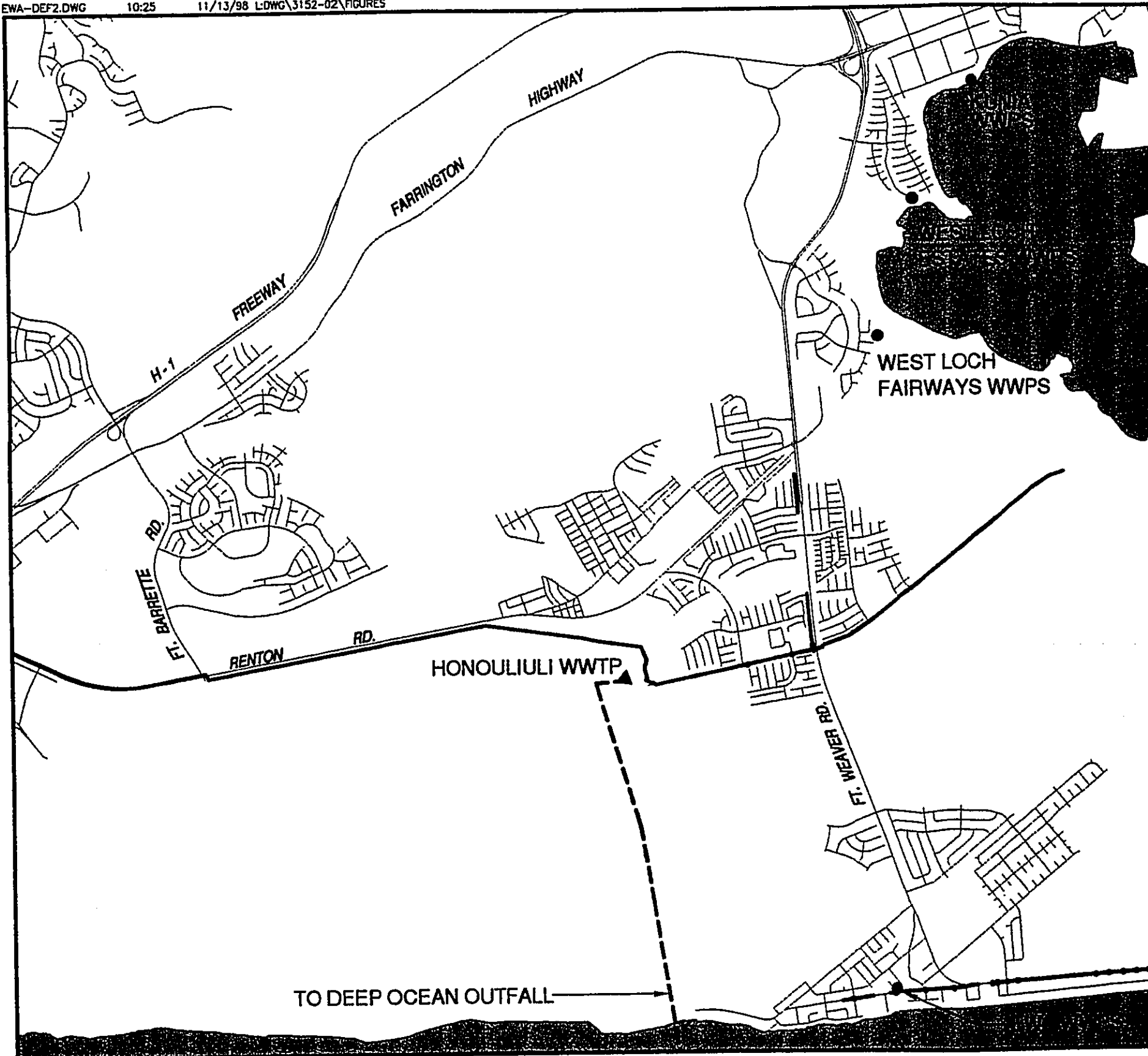
The Honouliuli WWTP is the primary wastewater treatment facility in the Study Area and is the second largest treatment facility on Oahu, next to the Sand Island WWTP. The Honouliuli WWTP presently has a design ADWF primary treatment capacity of 38 million gallons per day (mgd), and treats an average daily wastewater flow of about 26 mgd. In addition to providing primary treatment of all flows received, the plant has the capacity to provide additional secondary treatment for up to 13 mgd.



FACILITIES PLAN

F 2 (EWA AND EWA BEACH)
EM DEFICIENCIES

FIGURE
2-1

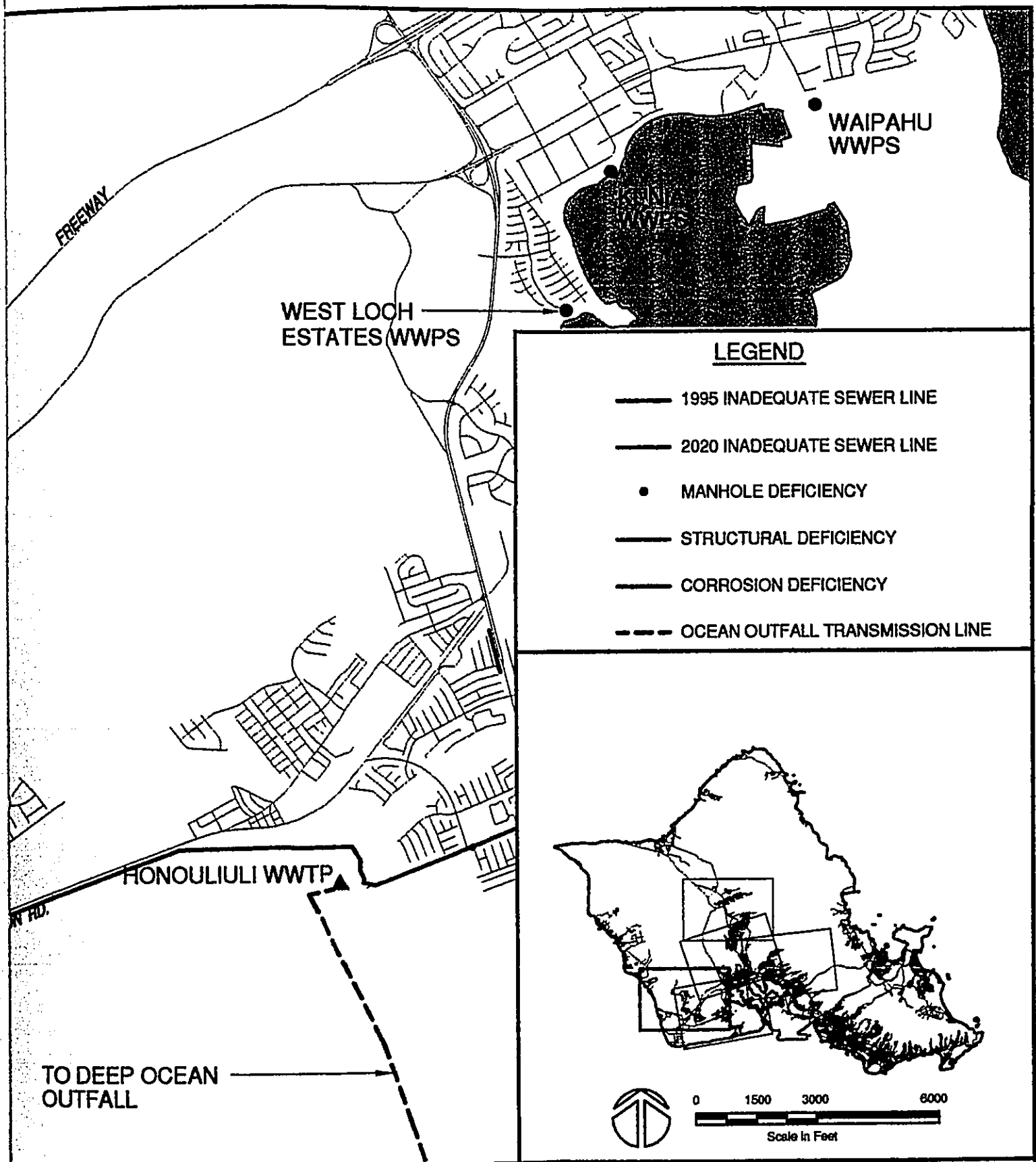


WEST MAMALA BAY FACILITIES PLAN



WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS

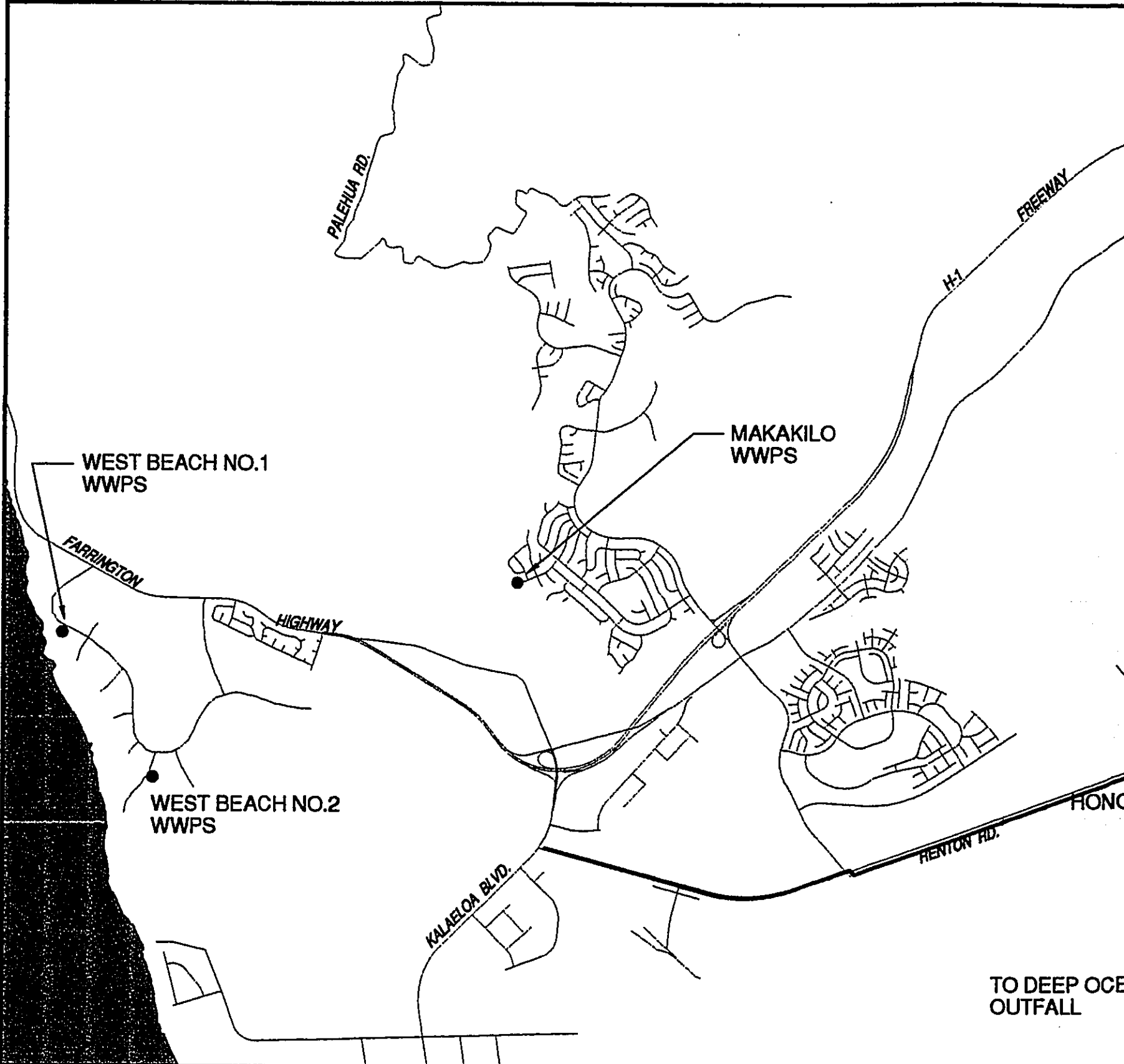
HONOULIULI AREA - MAP 1 OF 2 (EWA AND EV)
COLLECTION SYSTEM DEFICIENCIES



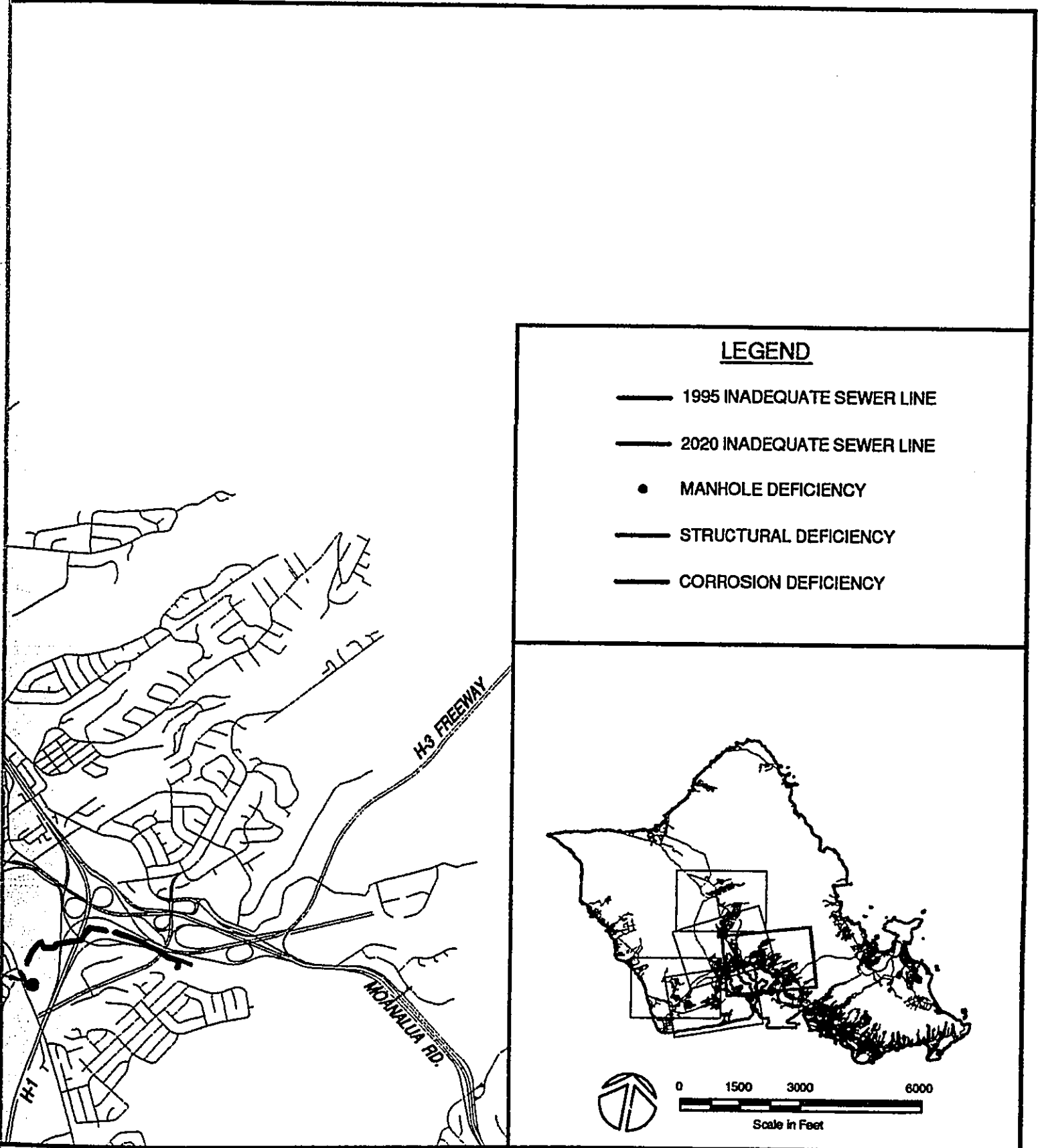
FACILITIES PLAN

POLEI, KO OLINA, AND MAKAKILO)
EM DEFICIENCIES

FIGURE
2-2

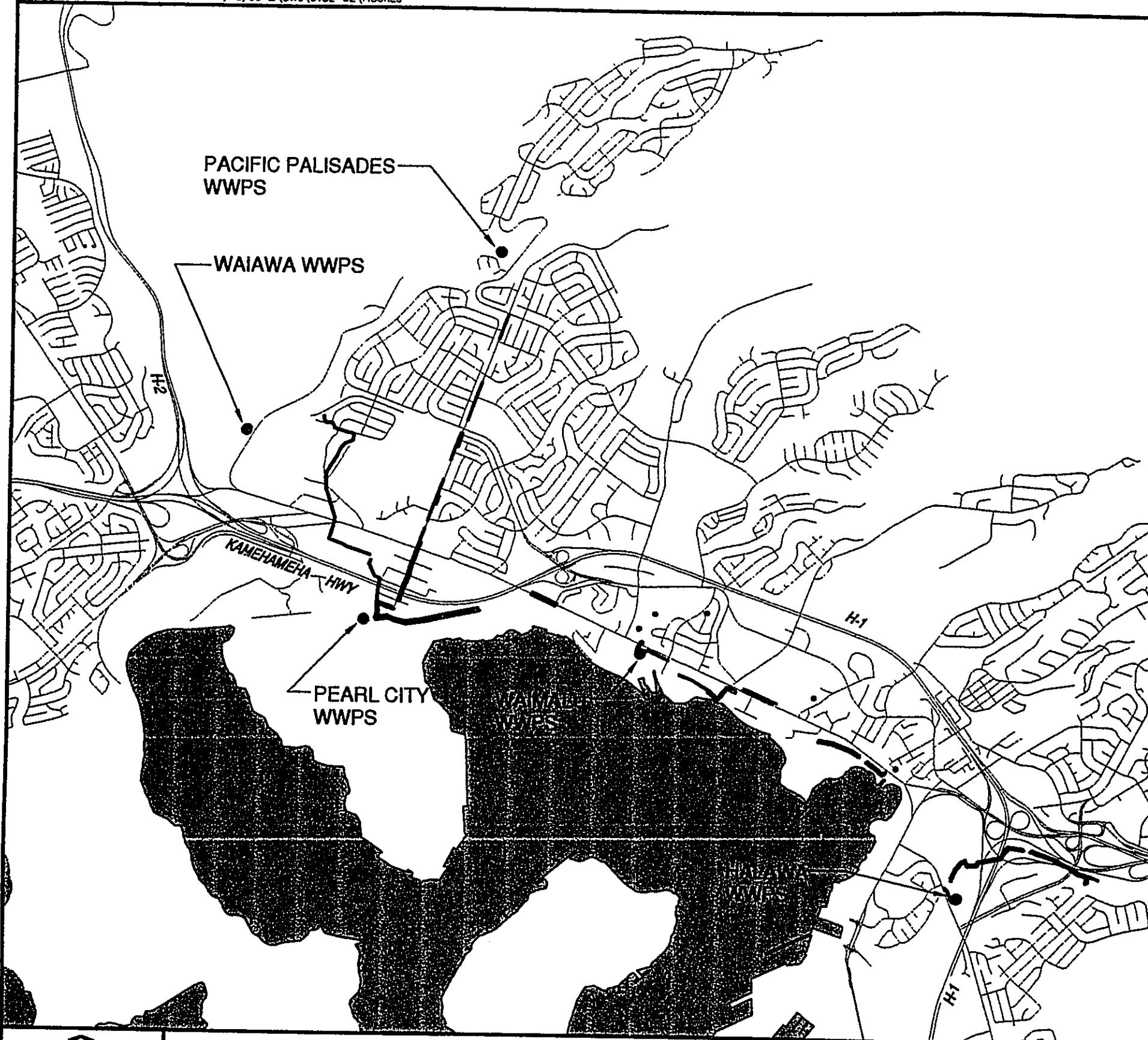


WEST MAMALA BAY FACILITIES PLAN
HONOULIULI AREA - MAP 2 OF 2 (KAPOLEI, KO OL
COLLECTION SYSTEM DEFICIENCY



FACILITIES PLAN
 CITY AREA
 SEWER DEFICIENCIES

FIGURE
 2-3

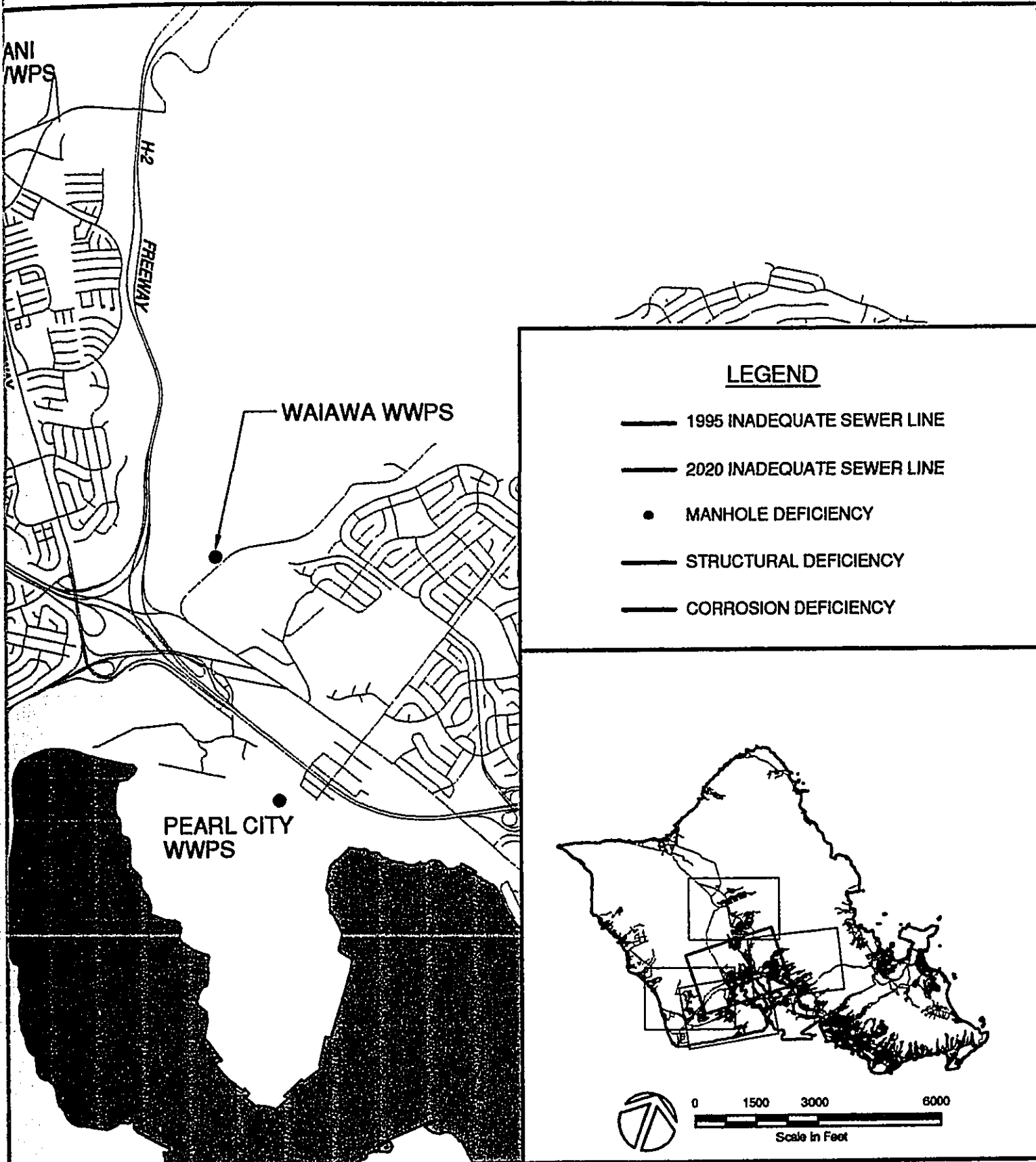


WEST MAMALA BAY FACILITIES PLAN

**PEARL CITY AREA
COLLECTION SYSTEM DEFICIENCIES**



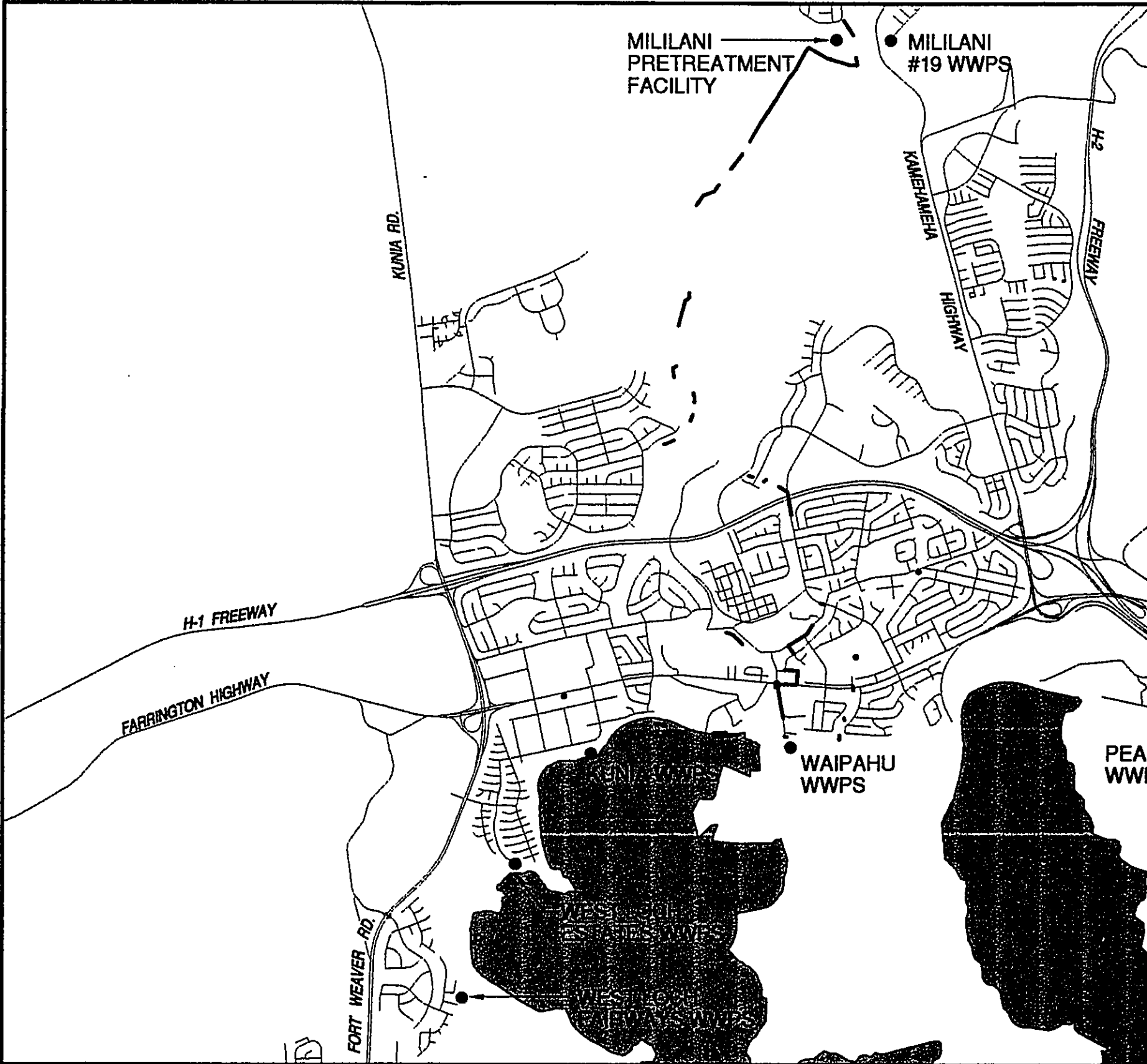
**WILSON OKAMOTO
& ASSOCIATES, INC.**
ENGINEERS • PLANNERS



FACILITIES PLAN

(HU, KUNIA, WAIKELE, AND WAIPIO)
EM DEFICIENCIES

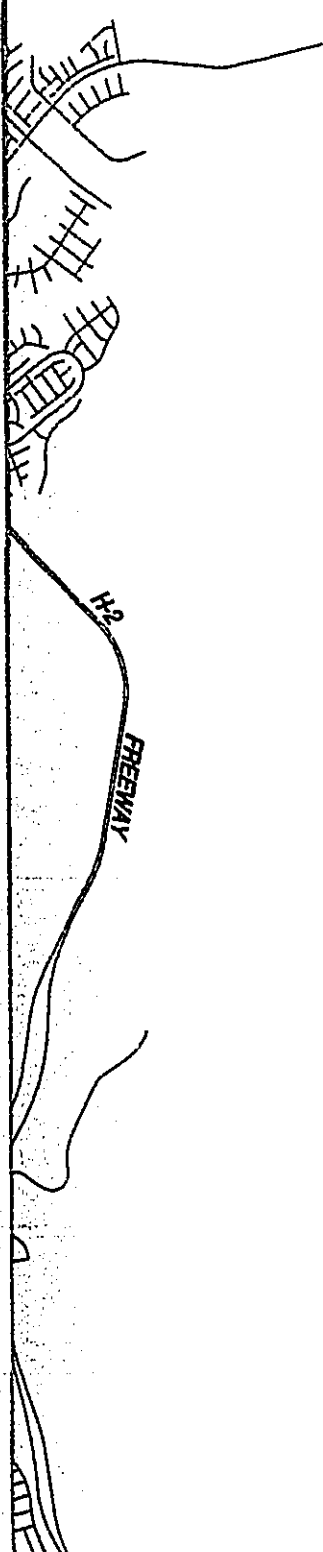
FIGURE
2-4



WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS

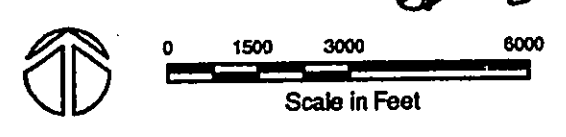
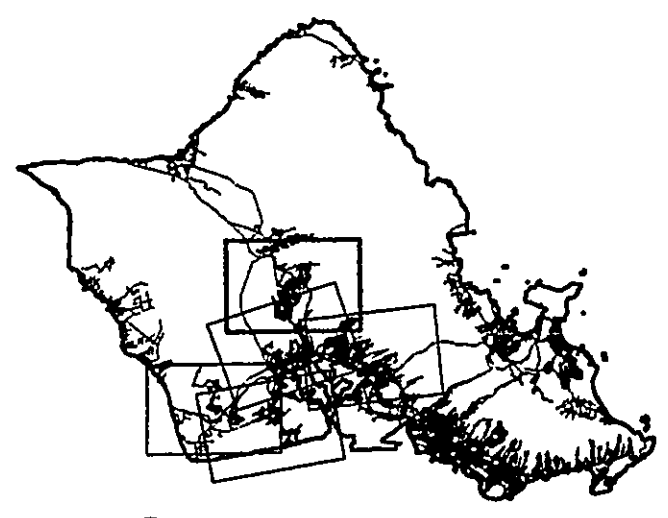
WEST MAMALA BAY FACILITIES PLAN

WAIPAHU AREA - MAP 1 OF 2 (WAIPAHU, KUNIA, WAI
COLLECTION SYSTEM DEFICIENCIES



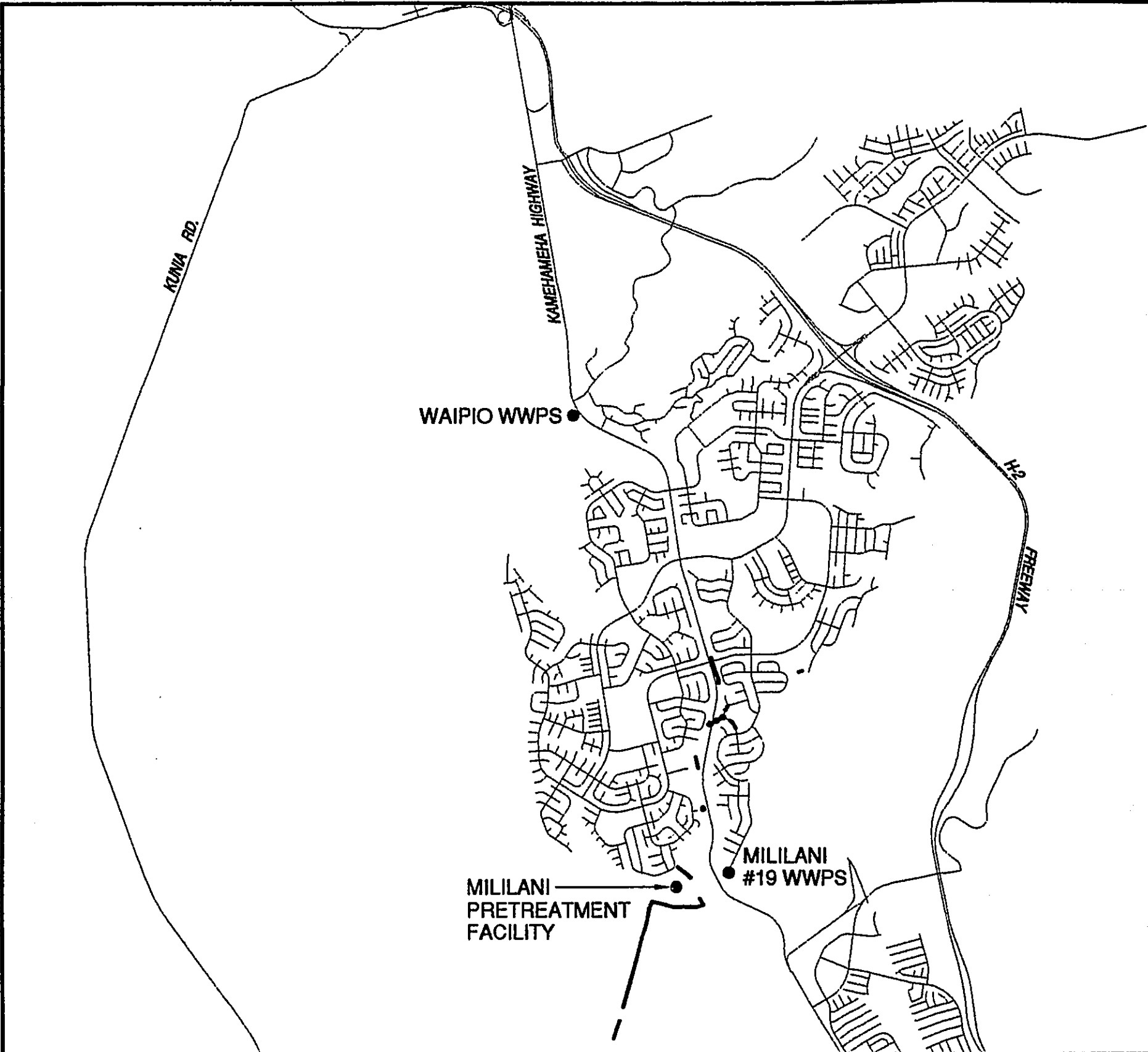
LEGEND

—	1995 INADEQUATE SEWER LINE
—	2020 INADEQUATE SEWER LINE
•	MANHOLE DEFICIENCY
—	STRUCTURAL DEFICIENCY
—	CORROSION DEFICIENCY



FACILITIES PLAN
 P 2 OF 2 (MILILANI)
 EM DEFICIENCIES

FIGURE
 2-5



WEST MAMALA BAY FACILITIES PLAN

WAIPAHU AREA - MAP 2 OF 2 (MILILANI)
COLLECTION SYSTEM DEFICIENCIES



WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS

Currently, about 6.5 mgd of primary treated effluent receives secondary treatment. Approximately 90 percent of the wastewater treated at the plant is from residential areas. Effluent from the Honouliuli WWTP is disposed of through the Barbers Point Deep Ocean Outfall, located approximately 1.7 miles offshore at a depth of 200 feet.

The City applied for and received a secondary treatment waiver for ocean discharge (301(h) waiver) in 1985 and 1991, the latter of which expired in 1996. The permit has been extended until the Environmental Protection Agency (EPA) can complete the processing of the reapplication. The plant continues to operate under the conditions of the 1991 National Pollutant Discharge Elimination System (NPDES) permit. The Honouliuli WWTP has also been selected by the City for implementation of effluent and sludge reuse pursuant to the 309 Consent Decree, as discussed in Section 2.5.

Assessment of the wastewater treatment system at the Honouliuli WWTP was based on receiving flows projected through the SFAS model.

The liquid treatment stream was assessed based on capacity as well as operational and performance issues identified by plant operators and during site visits. With minor additions, the existing facilities are adequate to accommodate the projected 2020 ADWF. The plant, however, does not have sufficient capacity for the modeled existing and projected PWWF. The SFAS model shows that full conveyance of flows from the design storm would require a treatment capacity of 102 mgd for 1995 PWWF, and 174 mgd for the 2020 PWWF. Presently, the Honouliuli WWTP has an ADWF capacity of 38 mgd and a PWWF capacity of 112 mgd (see Table 2-1). An interpolation of the modeled PWWF indicates that the plant's PWWF capacity was exceeded in 1999. Improved treatment levels at the plant also need to be considered because of potential regulatory issues and future effluent reuse applications.

Facility/Basin	Existing Capacity	1995 SFAS Model Flow	2020 SFAS Model Flow
Honouliuli WWTP	112	102	174

The solids treatment stream was assessed based on capacity as well as operational and performance issues identified by plant operators and during site visits. The needs assessment indicates that most of the existing solids treatment facilities are inadequate to accommodate projected 2020 wastewater flows.

2.3 Disposal System

Assessment of the wastewater disposal system was based on receiving flows projected through the SFAS model. Considered were regulatory issues that will affect the feasibility of alternatives for disposing the projected flows, including those related to ocean disposal, water reclamation, and biosolids disposal and reuse.

Potential effluent disposal needs identified for the Barbers Point Deep Ocean Outfall include its PWWF capacity, low flow conditions and structural integrity. The current PWWF design capacity of the outfall under gravity-flow conditions is 112 mgd. Interpolation of the modeled PWWF between 1995 and 2020 indicates that the capacity of the outfall was exceeded in 1999. The low flow condition relates to maintaining minimum velocities in the outfall. This condition could reduce the capacity of the outfall to accommodate PWWF if solids in the effluent are settling in the outfall line or if seawater is intruding, potentially depositing materials such as sand in the outfall. Planned diversion of flows for reuse could further aggravate this condition. The structural integrity of the outfall line is a concern with regard to corrosion caused by long-term exposure to hydrogen sulfide (H₂S) gas released in the landward portion of the line. A condition assessment of the effluent pipeline and outfall and further studies are recommended.

With regard to solids disposal, the City has initiated a plan to evaluate available options for biosolids reuse. The plan is needed to determine the long-term feasibility of numerous options, including an on-going trial composting project with the Navy.

2.4 Odor and Noise Control Systems

Needs related to odor and noise control must be addressed as the plant expands to accommodate future flows and as community development in the vicinity of the plant continues. While noise has not been a significant problem, odor control has always been an important component of the Honouliuli WWTP and will likely become even more important. Weekly fence line air quality monitoring since 1989 indicates that the limit for H₂S concentration has only been exceeded a few times for brief periods when odor control units were off-line or malfunctioning. Nevertheless, H₂S can be detected as an odor at concentrations less than the limit. A H₂S limit of 25 parts per billion by volume (ppbv) or 35 micrograms per cubic meter (hourly average) at all plant property lines was stipulated in the Covered Source Permit (amended May 7, 1998) issued by the State DOH to the City for the Honouliuli WWTP. Odor related to the thermal solids treatment process is also a concern.

2.5 309 Consent Decree

Consent Decree Civ. No. 94-00765DAE is an agreement entered in court on May 15, 1995 between the EPA, State DOH, and the City. This agreement stemmed from allegations that the City had violated provisions of the Clean Water Act at its wastewater treatment facilities. Referred to internally by the City as the 309 Consent

Decree, the agreement documented a significant commitment to improving the City wastewater system. The primary goals included implementation of pretreatment and collection system compliance programs and development of supplemental environmental projects for the City to achieve and maintain compliance with the Clean Water Act. The supplemental environmental projects identified in the 309 Consent Decree are relevant because they committed the City to effluent and biosolids reuse projects. Both effluent and biosolids reuse will be implemented at the Honouliuli WWTP.

The City is committed to spend at least \$20 million on effluent reuse projects, according to the following schedule:

- 2 mgd of municipal effluent by July 1, 1998;
- An additional 3 mgd of municipal effluent by September 30, 2000; and
- At least 10 mgd of municipal effluent by July 1, 2001 and continuing at least until July 1, 2011. The City is pursuing this through the Ewa Water Recycling Facility project.

The City's compliance schedule for biosolids reuse includes increasing treatment of biosolids at the trial composting project with the Navy to produce an annual average of 10 dry tons per day of biosolids or 3,650 dry tons per year. The City proposes to meet the requirement of reusing 3,650 dry tons per year beginning July 1, 2004. The City is also committed to spend at least \$10 million on biosolids reuse projects.

Chapter 3

Project Description

3. PROJECT DESCRIPTION

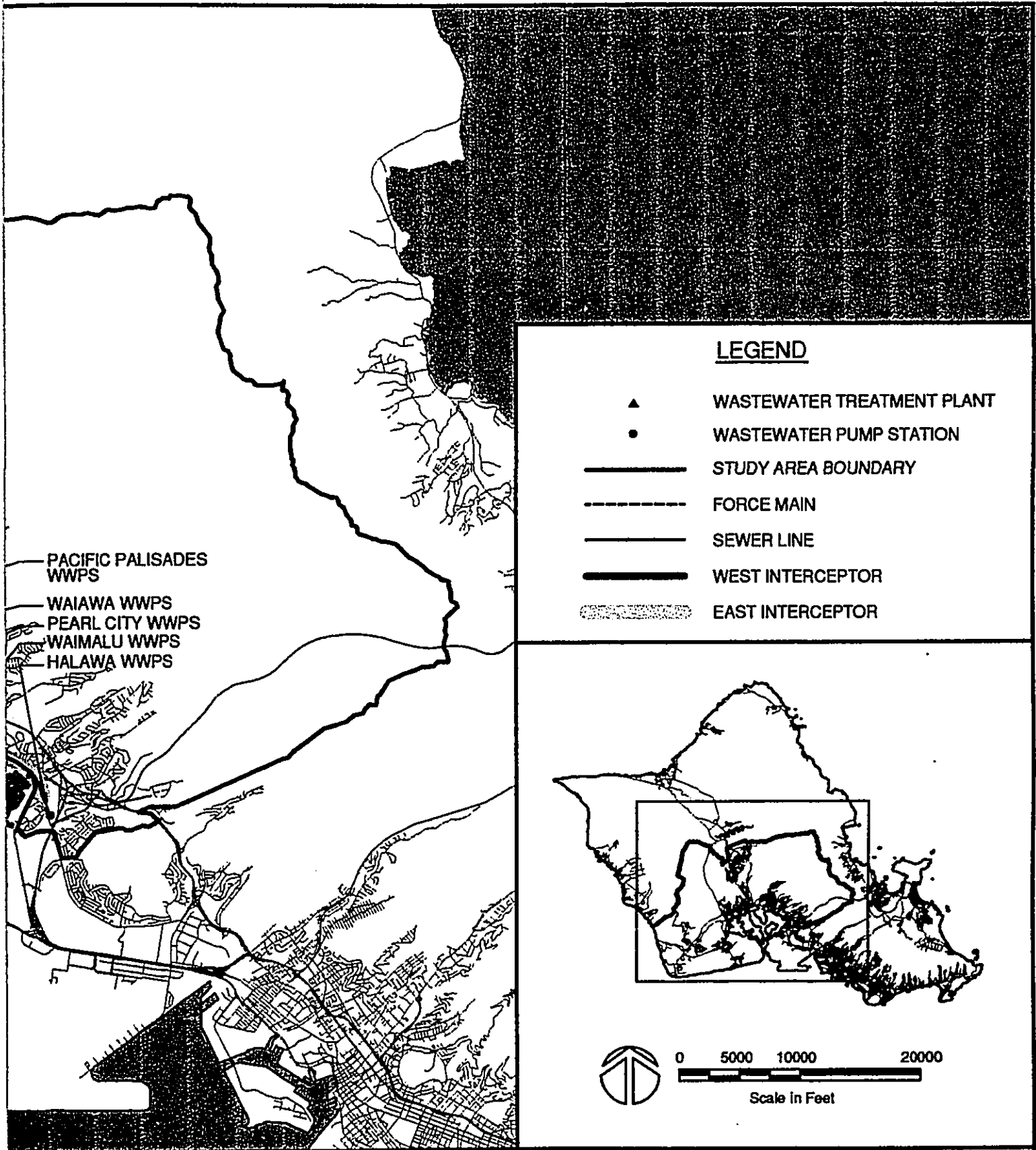
In the Pre-Final Facilities Plan Report various alternatives for addressing projected needs of the wastewater collection, treatment and disposal system were assessed and preliminary recommendations offered. The preliminary recommendations are described below. Final recommendations will be presented in the Final Facilities Plan Report following processing of the Final EIS.

The preliminary recommendations pertain to accommodating ADWF and PWWF from design storm events, and meeting requirements for effluent and biosolids reuse.

3.1 Collection System Overview

The preliminary recommendations for addressing deficiencies in the collection system are divided by the nature of the identified deficiencies into four classifications:

- **West Interceptor System Deficiencies** – The West Interceptor System is a 30-inch gravity line conveying wastewater flows from areas generally west of the Honouliuli WWTP, to the plant (see Figure 3-1). These areas include West Beach, Makaiwa Hills, Makakilo, Kapolei, and Ewa.
- **East Interceptor System Deficiencies** – The East Interceptor System is the primary trunk system of gravity lines, pump stations and force mains conveying flows from areas generally east and north of the Honouliuli WWTP, to the plant (see Figure 3-1). Communities served extend from Halawa to Ewa and north through Central Oahu, up to and including Mililani.
- **Isolated System Deficiencies** – Isolated system deficiencies are those not located along either the West or East Interceptor Systems. Most of these existing capacity and structural deficiencies are being addressed through the City's Sewer Rehabilitation and Infiltration & Inflow Minimization Plan, hereinafter referred to as the I/I Plan.
- **Unsewered Areas** – There are four unsewered areas in the Study Area, including those located in Waimano, Aiea Heights, Ewa Beach, and Honouliuli, respectively. Two of these areas, Waimano and Aiea Heights, are presently planned for connection to the collection system. Preliminary recommendations for the remaining two areas were developed.

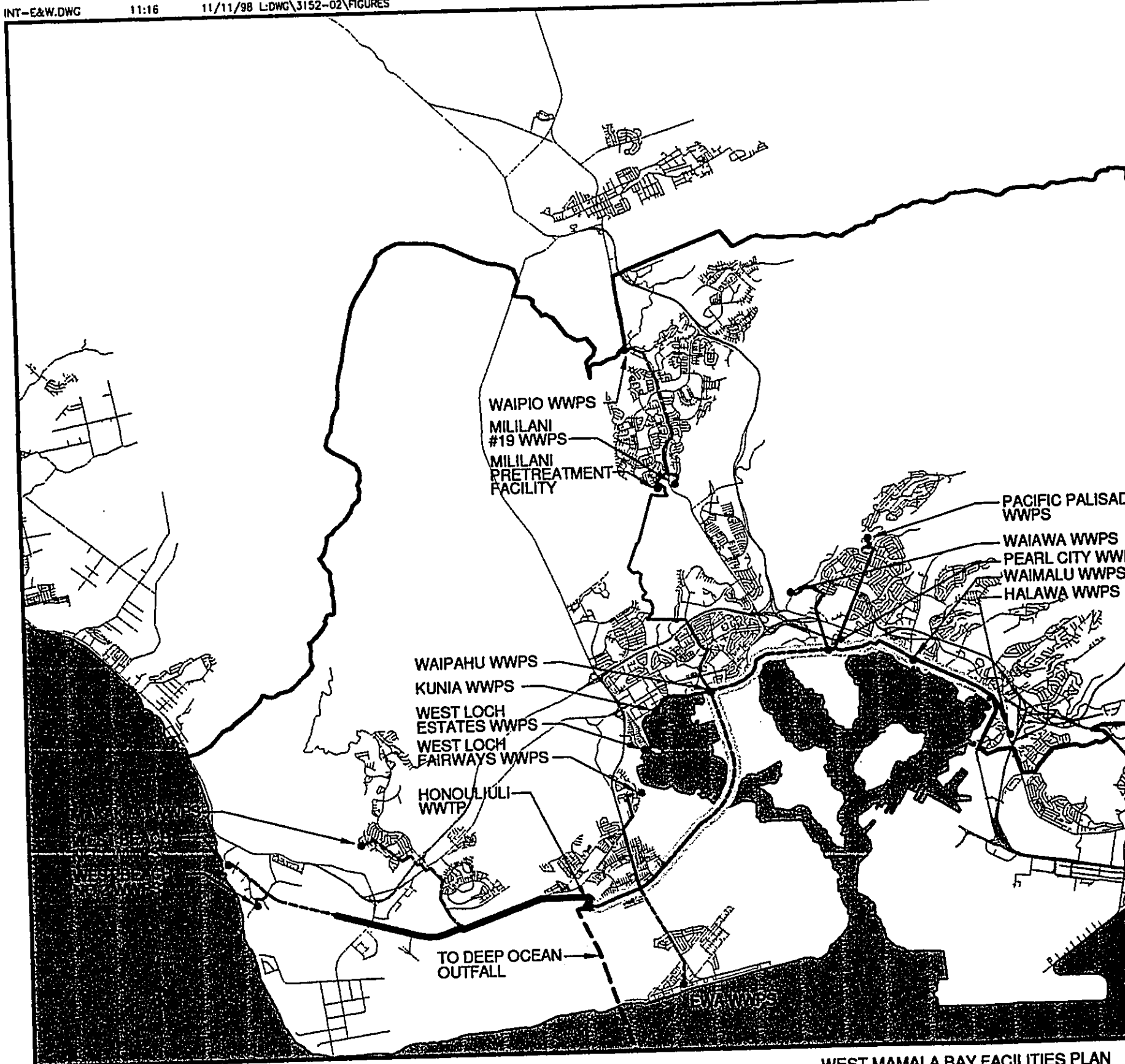


FACILITIES PLAN

INTERCEPTOR SYSTEMS

FIGURE

3-1



WEST MAMALA BAY FACILITIES PLAN

EAST AND WEST INTERCEPTOR S



WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS

3.1.1 West Interceptor System

The West Interceptor System serves the projected high-growth areas of West Beach, Makaiwa Hills, Makakilo, Kapolei and Ewa. To address the associated increase in wastewater that will be generated, the City has approved the *Sewer Master Plan for the Regional Interceptor Sewer System for the Developments of the Estates of James Campbell in the Kapolei Area, May 1992*. The Sewer Master Plan collectively involves various private developers of these areas to relieve the existing 30-inch line with a proposed 48- to 54-inch relief line. The 48-inch relief line will run parallel to the West Interceptor from its beginning near Kalaeloa Boulevard to Fort Barrette Road. This line is referred to in the Sewer Master Plan as the Ko Olina Relief Interceptor. From Fort Barrette Road, the line will upsize to 54-inches and run parallel to the existing interceptor to Honouliuli WWTP. The 54-inch line is referred to in the Sewer Master Plan as the Kapolei Interceptor.

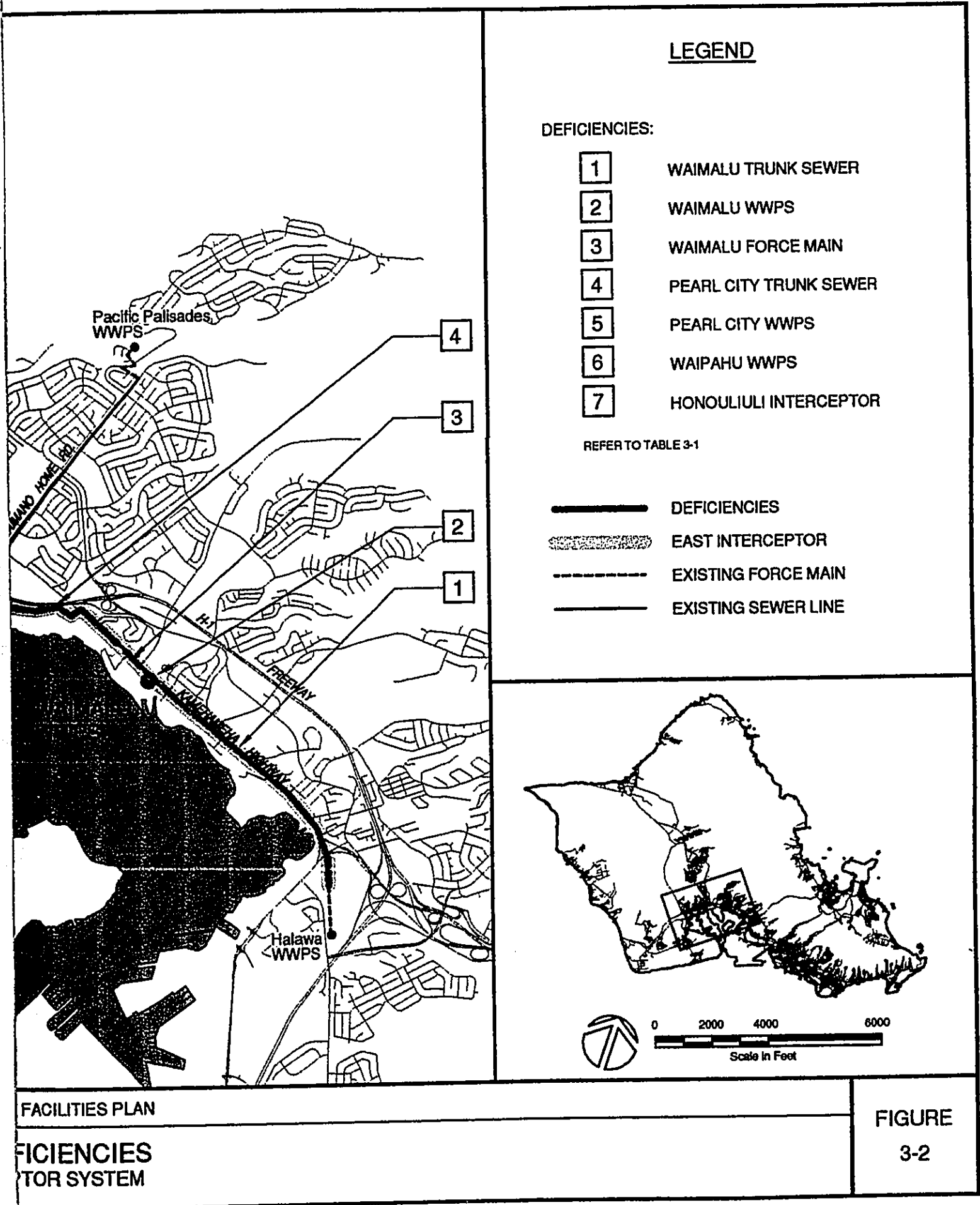
According to the *Sewer Master Plan*, developments involved in constructing the West Interceptor System improvements are Makaiwa Hills, West Beach, Kapolei City and Business-Industrial Park (Campbell Estate), Makakilo City, Villages of Kapolei and the East Kapolei Development Area, including the University of Hawaii - West Oahu Campus.

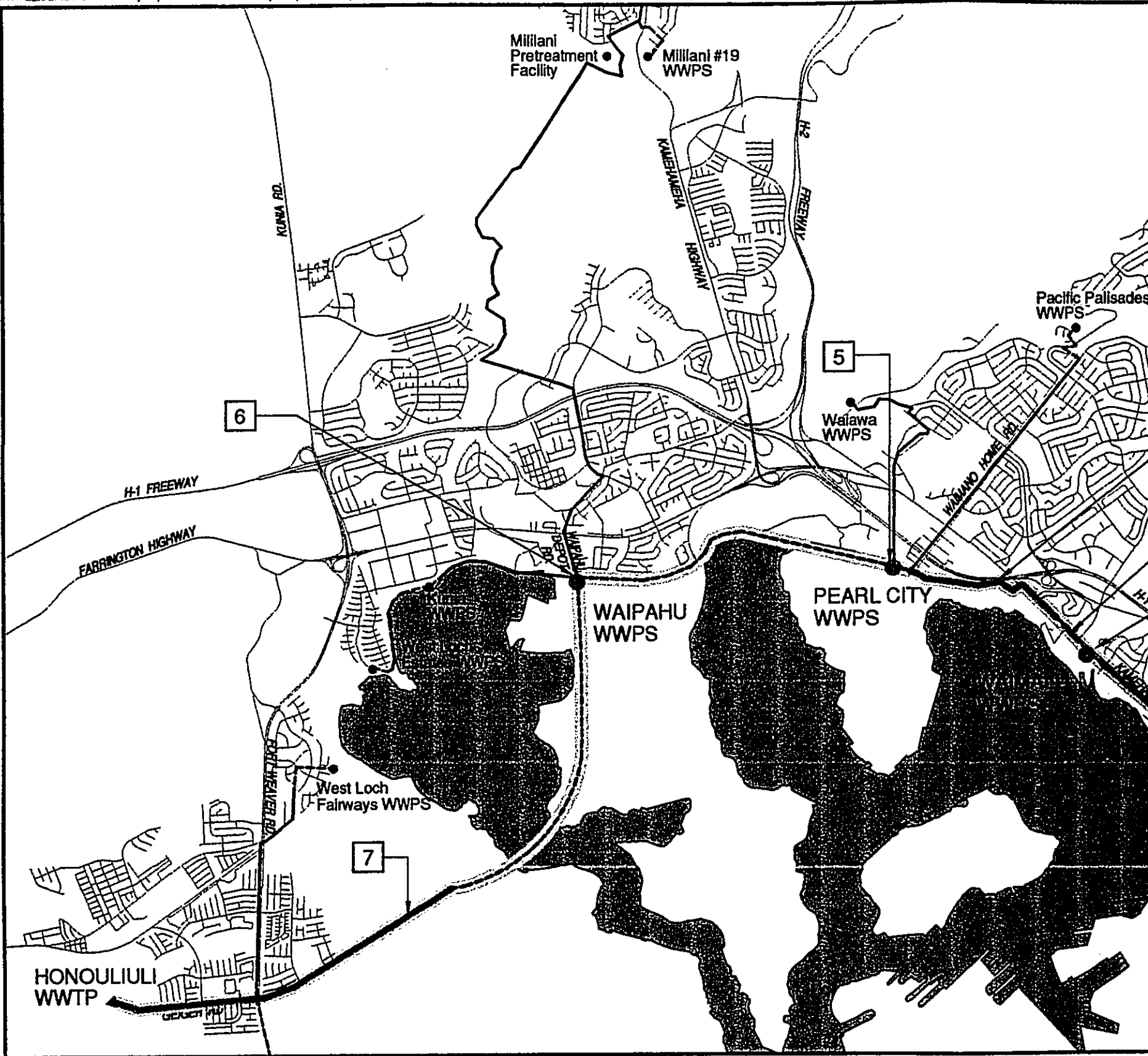
Based on the 1995 flow model, the West Interceptor System is presently at approximately 86 percent of its capacity. The relief interceptors should be constructed when the West Interceptor System reaches 90 percent of its capacity. Depending on which development triggers the need for the relief interceptor, its construction could be phased from Honouliuli WWTP back to the development.

The Sewer Master Plan will address the projected future deficiencies when it is implemented. Therefore, the preliminary recommendation is for the City to ensure that planned sewer connection improvements are implemented in a timely manner to meet wastewater collection demands as planned developments proceed.

3.1.2 East Interceptor System

The East Interceptor System serves virtually all of the remainder of the Study Area not served by the West Interceptor System. Capacity deficiencies in this system are related to the accommodation of existing and projected PWWF. Figure 3-2 identifies these deficiencies within the East Interceptor System with an identification number corresponding to a description of the deficiency in Table 3-1.





WEST MAMALA BAY FACILITIES PLAN

SYSTEM DEFICIENCIES
EAST INTERCEPTOR SYSTEM

ID	Description	Deficiency
1	Waimalu Trunk Sewer – 30- to 42-inch line along Kamehameha Highway from the Aloha Stadium property at the intersection of Kamehameha Highway and Salt Lake Boulevard to Waimalu WWPS. The line is located between manholes: HN-25-XX-0100 and HN-25-XX-4400	Existing and Future Capacity
2	Waimalu Wastewater Pump Station – 16.63 mgd pump capacity. The Waimalu WWPS is located along Kamehameha Highway next to Neal Blaisdell Park and Waimalu Stream.	Existing and Future Capacity
3	Waimalu WWPS Force Main – 30-inch force main along Kamehameha Highway. From the Waimalu WWPS to the intersection of Kamehameha Highway and Kuleana Road.	Existing and Future Capacity
4	Pearl City Trunk Sewer – 36- to 42-inch line along Kamehameha Highway. From the intersection of Kamehameha Highway and Kuleana Road to Pearl City WWPS. The line is located between manholes: HN-26-XX0100 and HN-26-XX-1700	Existing and Future Capacity
5	Pearl City Wastewater Pump Station – 25.99 mgd pump capacity. The Pearl City WWPS is located off of Lehua Avenue in Pearl City near Lehua Elementary School and the Waiawa Stream.	Existing and Future Capacity
6	Waipahu Wastewater Pump Station – 15.88 mgd pump capacity. The Waipahu WWPS is located along Waipahu Depot Road near the Police Academy and Kapakahi Stream.	Existing and Future Capacity
7	Honouliuli Interceptor – 84-inch trunk line along Iroquois Point Road and Geiger Road. The line starts at the Naval Magazine Lualualei West Loch Branch, along Iroquois Point Road. The line crosses Fort Weaver Road and continues on Geiger Road to the Honouliuli WWTP. The line is located between manholes: HN-01-EW-0001 and HN-01-EW-0026	Future Capacity

The preliminary recommendation is to assess the two alternatives described on the following pages, as well as a potential hybrid alternative.

3.1.2.1 Upgrade System Alternative

The first alternative involves upgrading the various deficient components of the East Interceptor System to achieve a system capable of accommodating PWWF projected through 2020 and to implement necessary structural repairs. Most of these upgrades were formulated through the City's I/I Plan based on projected wastewater flows developed through the Facilities Plan.

Figure 3-3 depicts the various solutions to the deficient components. These solutions are described in Table 3-2, noting which deficiencies are addressed and the estimated cost of the solution. The identification numbers for the deficiencies addressed in Table 3-2 correspond with those in Figure 3-2 and Table 3-1.

3.1.2.2 Flow Equalization Within the System Alternative

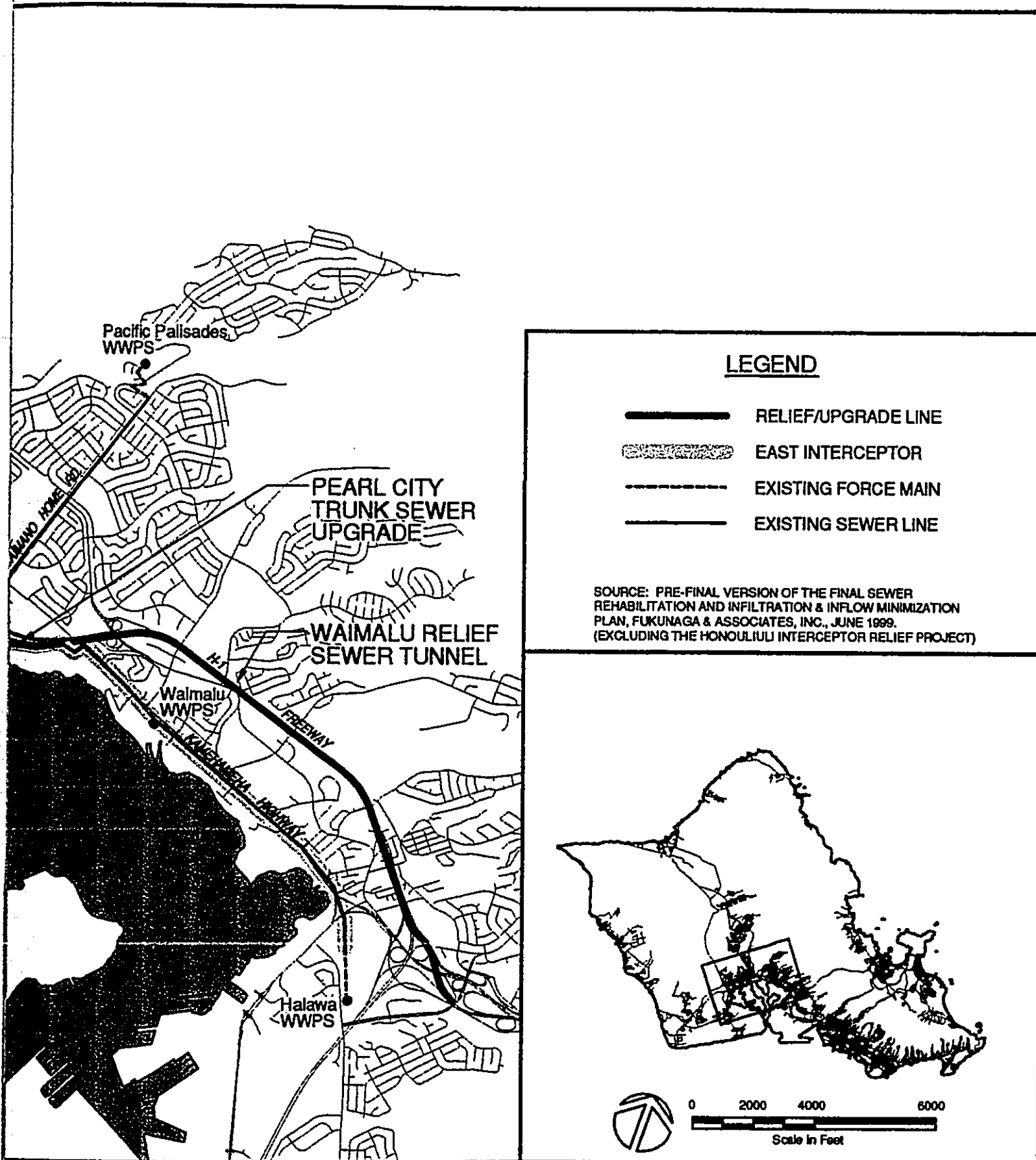
The second alternative specifically addresses PWWF capacity deficiencies in the East Interceptor System through the construction of four equalization facilities to capture and store storm flows and feed them back into the system at a rate that can be accommodated by the system. Three equalization facilities would be located along the existing East Interceptor System and the fourth at the existing Mililani Pre-Treatment Facility (PTF).

The three flow equalization facilities along the East Interceptor System would be located adjacent to existing wastewater pump stations (WWPS) sites and would capture flows before they enter the WWPS. Using these existing WWPS sites is appropriate for the following reasons:

- Land is available at the sites for constructing the flow equalization facilities;
- WWPSs are located in low-lying areas where flows would naturally collect; and
- WWPSs can be used to feed the collected storm flows back into the system at a controlled rate.

Figure 3-4 illustrates the location of each flow equalization facility along the East Interceptor System. Table 3-3 provides a corresponding description of each facility, noting which deficiencies are addressed and the estimated cost of the facility. The identification numbers for the deficiencies addressed correspond with those in Figure 3-2 and Table 3-1. Figures 3-5 through 3-8 provide more detailed location maps of each facility.

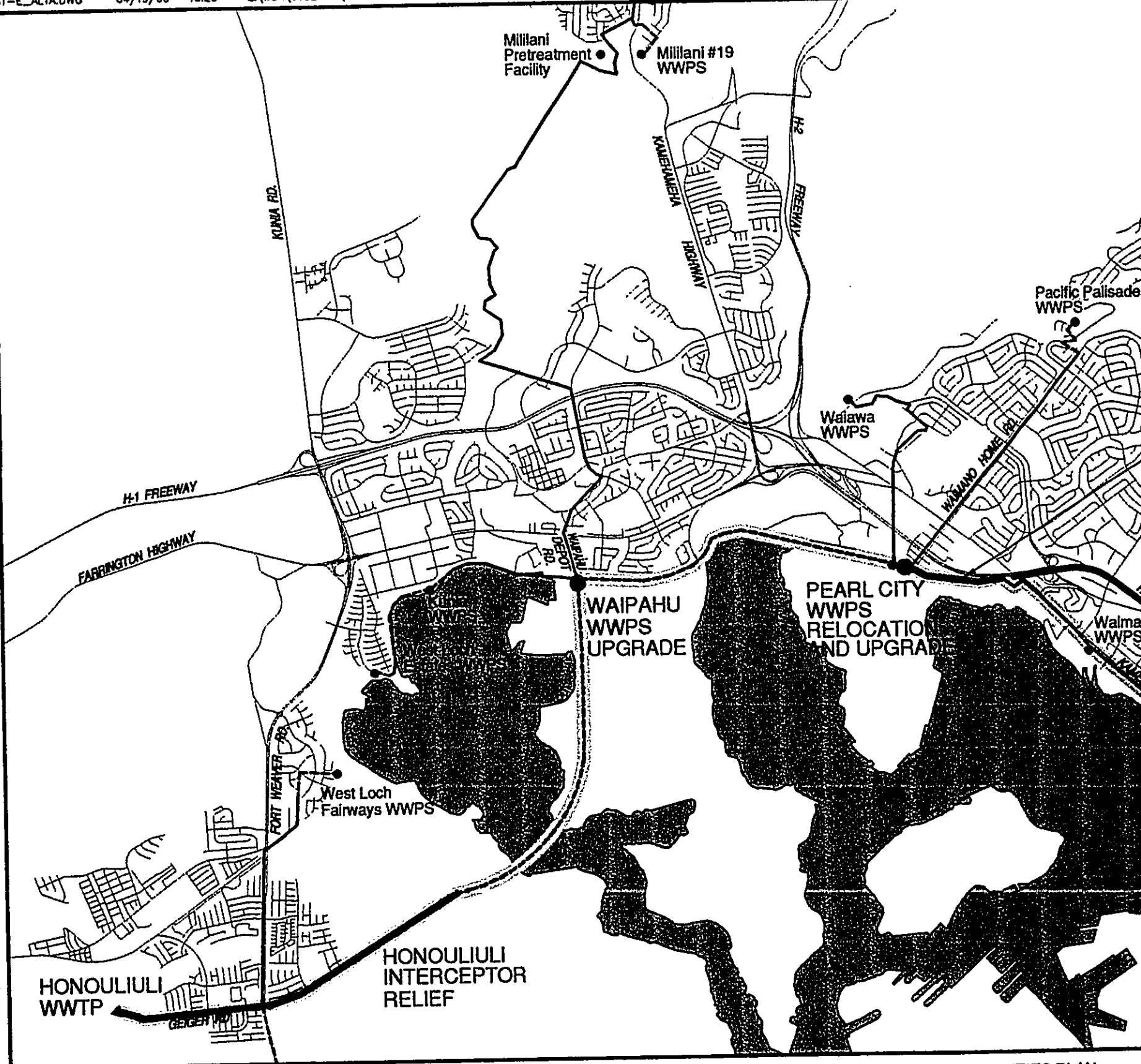
Notably, the Mililani PTF Storage Facility is not on the East Interceptor System but is linked to it. The development of a storage facility at this site is addressed in the *Mililani Reclamation Facility Feasibility Study*.



FACILITIES PLAN

ALTERNATIVE
INTERCEPTOR SYSTEM

FIGURE
3-3




WILSON OKAMOTO & ASSOCIATES, INC.
 ENGINEERS • PLANNERS

WEST MAMALA BAY FACILITIES PLAN
UPGRADE SYSTEM ALTERNATIVE
 EAST INTERCEPTOR SYSTEM

**Table 3-2
Upgrade System Alternative
East Interceptor System**

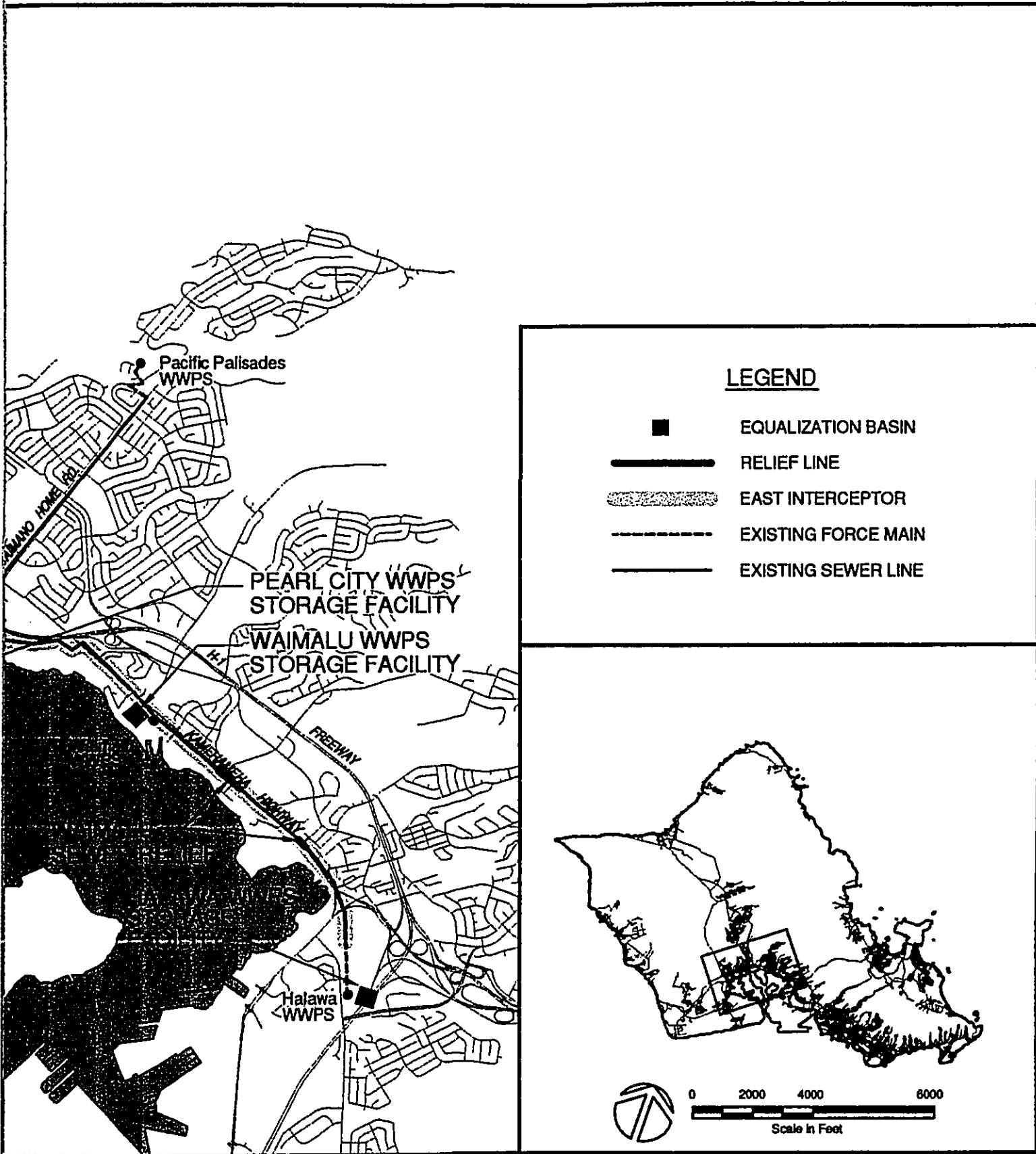
Item	Solutions Developed	Deficiency Addressed	Cost
1.	<p>Waimalu Relief Sewer Tunnel Construct a 48-inch sewer tunnel, approximately 17,000 linear feet along Interstate H-1 from Aloha Stadium to the Kamehameha Highway underpass where it will discharge into the Pearl City Trunk Sewer on Kamehameha Highway. The Tunnel will intercept flows mauka of Interstate H-1 and divert them beyond the deficient components in Waimalu.</p>	<p>1 Waimalu Trunk Sewer</p> <p>2 Waimalu WWPS</p> <p>3 Waimalu WWPS Force Main</p> <p>Flows intercepted from mauka of the Tunnel will relieve existing and future capacity deficiencies for the 3 components listed above.</p>	\$26,390,000
2.	<p>Pearl City Trunk Sewer Upgrade Upgrade approximately 3,300 linear feet of the Pearl City Trunk Sewer from manholes HN-24-XX-1200 to HN-24-XX-0200.</p>	<p>4 Pearl City Trunk Sewer</p> <p>Upgrading of the trunk sewer will eliminate existing and future capacity deficiencies.</p>	\$5,790,000
3.	<p>Pearl City WWPS Relocation and Upgrade Relocate the existing Pearl City WWPS outside the flood limits and increase its capacity from 26 mgd to 46 mgd. Design of the relocated WWPS would provide for future upgrade from 46 mgd to 54 mgd. Proposed location of the relocated WWPS is adjacent to Lehua Avenue, across from Lehua Elementary School, on U.S. Navy land.</p> <p>Pearl City WWPS Future Upgrade In the future, as peak flow increases, upgrade the capacity of the WWPS from 46 mgd to 54 mgd.</p>	<p>5 Pearl City WWPS</p> <p>Relocating the WWPS will eliminate flooding problems. Upgrading of the WWPS will eliminate existing capacity deficiencies.</p> <p>Future upgrading of the WWPS will eliminate future capacity deficiencies.</p>	\$34,510,000 \$1,870,000
4.	<p>Waipahu WWPS Upgrade The City is currently upgrading the capacity of the Waipahu WWPS from 16 mgd to 38 mgd through a CIP project.</p> <p>Waipahu WWPS Future Upgrade In the future, as peak flow increases, upgrade the capacity of the WWPS from 38 mgd to 47mgd.</p>	<p>6 Waipahu WWPS</p> <p>Upgrading of the WWPS will eliminate existing capacity deficiencies.</p> <p>Future upgrading of the WWPS will eliminate future capacity deficiencies.</p>	\$7,400,000 \$9,580,000

Continued

Table 3-2 (continued)
Upgrade System Alternative
East Interceptor System

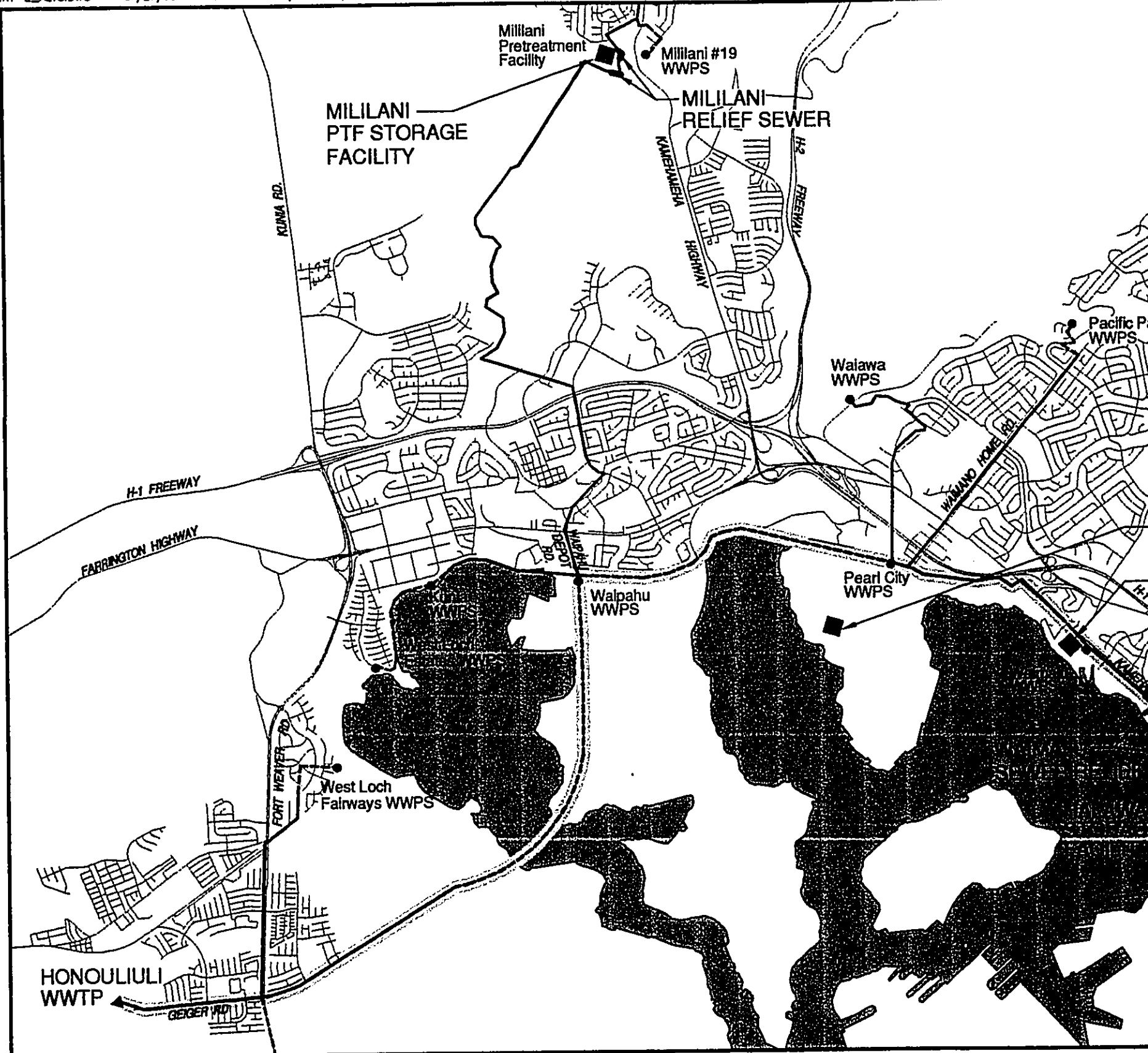
Item	Solutions Developed	Deficiency Addressed	Cost
5.	<u>Honouliuli Interceptor Relief</u> Construct a 48-inch relief line, approximately 12,500 linear feet along Geiger Road to accommodate future flow within the Honouliuli Interceptor.	<div style="border: 1px solid black; display: inline-block; padding: 2px;">7</div> Honouliuli Interceptor Relieving the trunk sewer will eliminate future capacity deficiencies.	\$19,210,000
		TOTAL =	\$104,750,000

* Based on preliminary recommendations of the Pre-Final Version of The Final Sewer Rehabilitation and Infiltration & Inflow Minimization Plan, Volume 2 of 10 Honouliuli I/I Engineering Report, Fukunaga & Associates, Inc., June 1999. (Except Item No. 5 Honouliuli Interceptor Relief, estimated in conjunction with the current Facilities Plan.)



FACILITIES PLAN
 SYSTEM ALTERNATIVE
 TOR SYSTEM

FIGURE
 3-4



WEST MAMALA BAY FACILITIES PLAN

FLOW EQUALIZATION SYSTEM ALTERN
EAST INTERCEPTOR SYSTEM



WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS

**Table 3-3
Flow Equalization Within System Alternative
East Interceptor System**

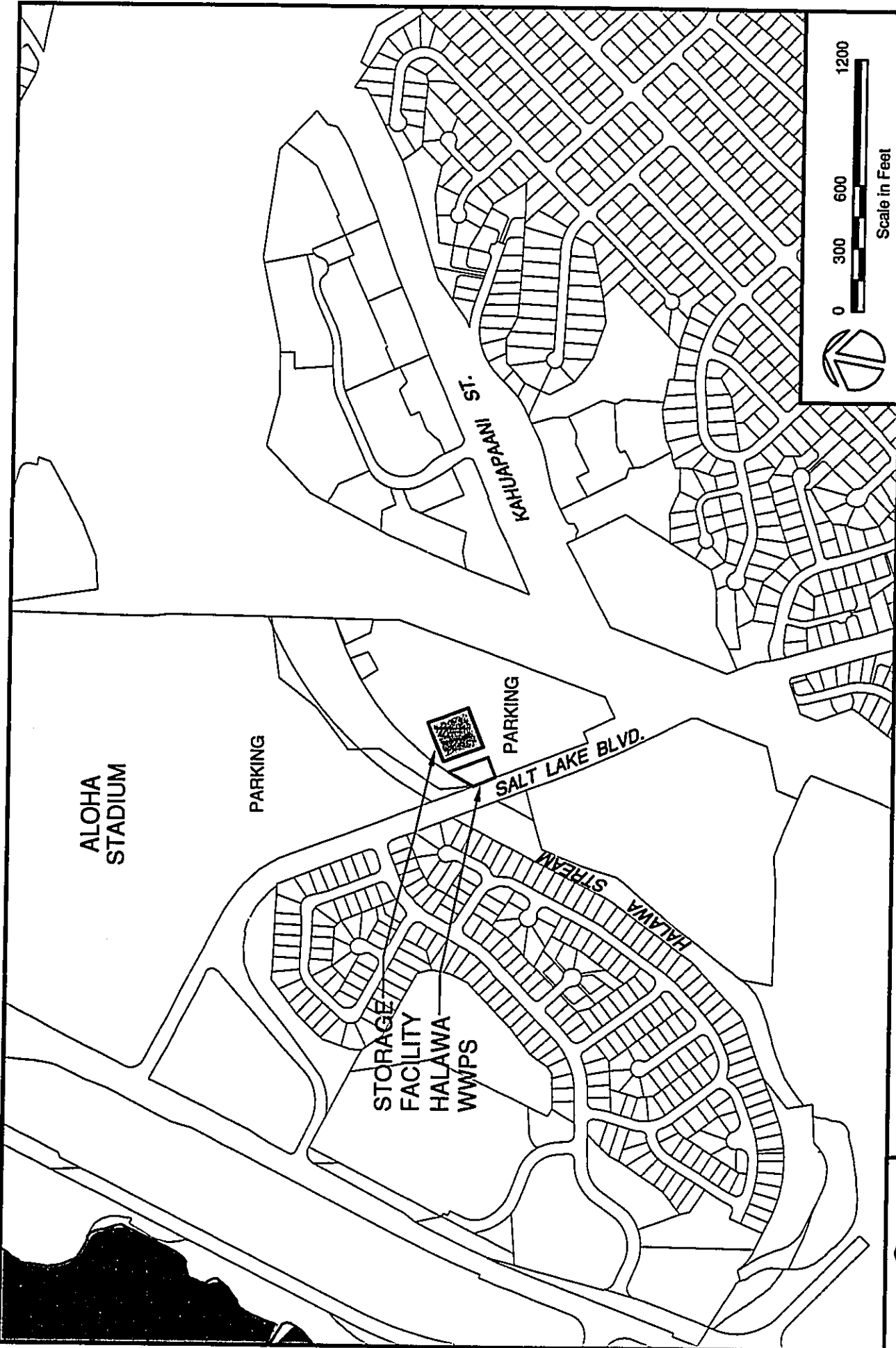
Item	Solutions Developed	Deficiency Addressed	Cost
1.	<p>Halawa WWPS Storage Facility Construct a new equalization facility in the Aloha Stadium parking lot, adjacent to the Halawa WWPS (see Figure 3-5). It will be an underground storage facility designed to store approximately 1 million gallons of wastewater during peak flow conditions. The Halawa WWPS will be used to pump the stored flows back into the collection system at a rate that can be accommodated.</p> <p>While the equalization facility will address most of the capacity deficiencies in the Waimalu Trunk Sewer, three segments of the line will require additional relief:</p> <ul style="list-style-type: none"> • Install a 24-inch parallel relief line approximately 230 linear feet between manholes HN-25-XX-1000 and HN-25-XX-1100; • Install a 42-inch parallel relief line approximately 610 linear feet between manholes HN-25-XX-1400 and HN-25-XX-1500; and, • Install an 18-inch parallel relief line approximately 250 linear feet between manholes HN-25-XX-2700 and HN-25-XX-2800. 	<p>1 Waimalu Trunk Sewer</p> <p>The equalization facility together with relief lines in three segments of the trunk sewer will address existing and future capacity deficiencies.</p>	<p align="center">\$14,500,000</p>
2.	<p>Waimalu WWPS Storage Facility Construct a new equalization facility within Blaisdell Park, adjacent to the Waimalu WWPS (see Figure 3-6). It will be an underground storage facility designed to store approximately 1.3 million gallons of wastewater during peak flow conditions. The Waimalu WWPS will be used to pump the stored flows back into the collection system at a rate that can be accommodated.</p>	<p>2 Waimalu WWPS</p> <p>3 Waimalu WWPS Force Main</p> <p>4 Pearl City Trunk Sewer</p> <p>The equalization facility will address existing and future capacity deficiencies.</p>	<p align="center">\$15,150,000</p>

Continued

Table 3-3 (continued)
Flow Equalization Within System Alternative
East Interceptor System

Item	Solutions Developed	Deficiency Addressed	Cost
3.	<p>Pearl City WWPS Storage Facility Construct a new equalization facility in the vicinity of the former Pearl City WWTP (see Figure 3-7). It will be an underground storage facility designed to store approximately 3.1 million gallons of wastewater during peak flow conditions. Alternatively, a lower cost open-basin facility could be considered, since the surrounding area is not populated. The Pearl City WWPS will remain at its current location and will be used to pump the stored flows back into the collection system at a rate that can be accommodated.</p>	<p>5 Pearl City WWPS 7 Honouliuli Interceptor</p> <p>The equalization facility will address existing and future capacity deficiencies.</p>	<p>\$31,060,000</p>
4.	<p>Waipahu WWPS Upgrade The City is currently upgrading the capacity of the Waipahu WWPS from 16 mgd to 38 mgd under an existing CIP project.</p> <p>Mililani PTF Storage Facility Construct a new equalization facility at or near the Mililani Pretreatment facility (PTF) (see Figure 3-8). It will be an underground storage facility designed to store approximately 1.73 million gallons of wastewater during peak flow conditions. Alternatively, a lower cost open-basin facility could be considered since the Mililani PTF was a former WWTP sited away from populated areas. The Mililani PTF will be used to discharge the stored flows back into the collection system at a rate that can be accommodated.</p> <p>While the equalization facility will address most of the capacity deficiencies in the Mililani Trunk Sewer, two segments of the line will require additional relief:</p> <ul style="list-style-type: none"> • Install a 8-inch parallel relief line approximately 110 linear feet between manholes HN-05-MI-0117 and HN-05-MI-0118; and, • Install a 15-inch parallel relief line approximately 50 linear feet between manholes HN-05-MI-2603 and HN-05-MI-2604 	<p>6 Waipahu WWPS</p> <p>Upgrade of the WWPS will address existing capacity deficiencies.</p> <p>The equalization facility together with relief lines in two segments of the trunk sewer will address future capacity deficiencies.</p>	<p>\$7,400,000</p> <p>\$19,230,000</p>
		TOTAL =	\$87,340,000

EQ-HALAWA.DWG 11:16 11/11/98 L:DWG\3152-02\FIGURES



WEST MAMALA BAY FACILITIES PLAN

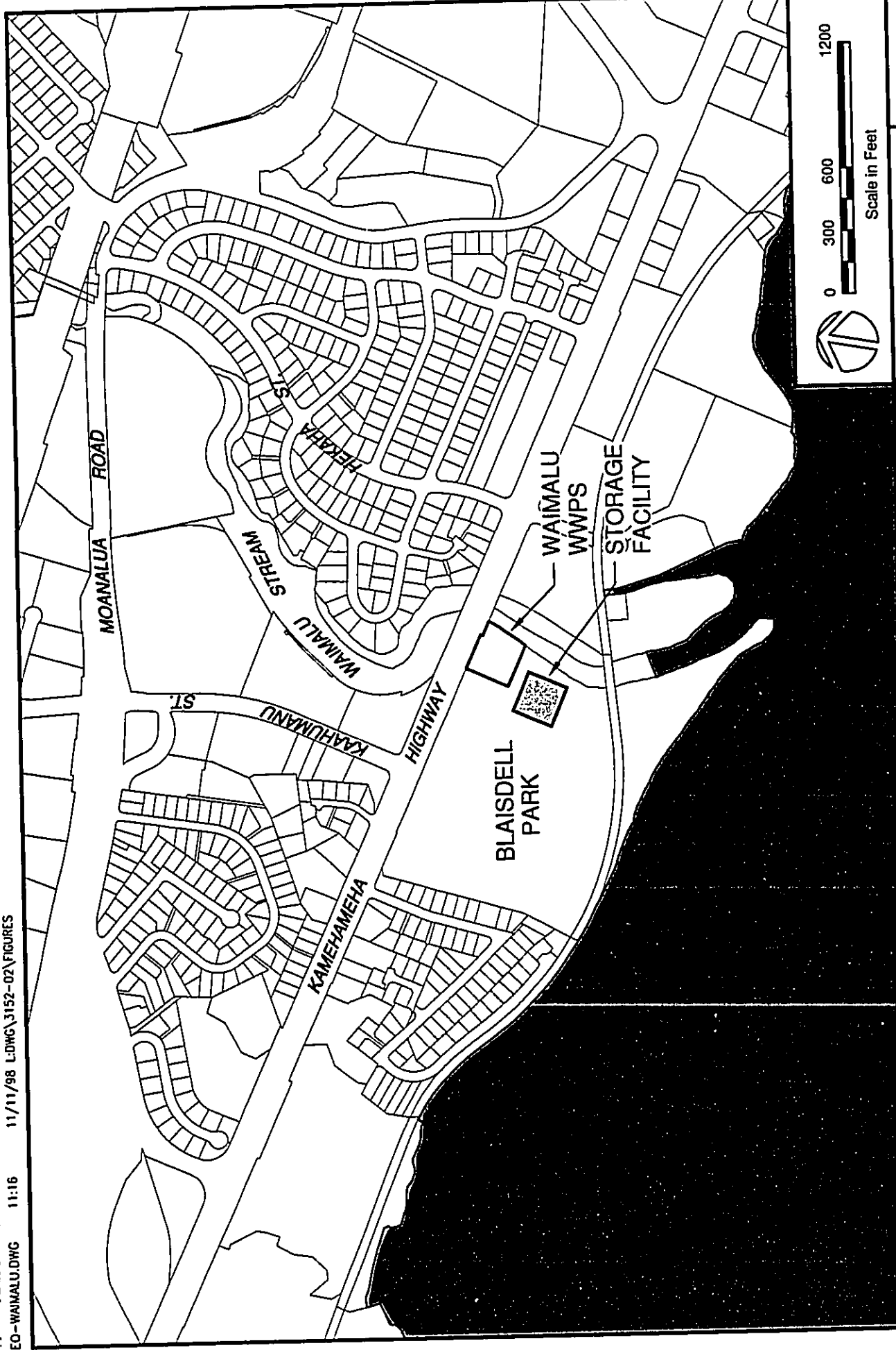
FIGURE 3-5

HALAWA WWPS STORAGE FACILITY
FLOW EQUALIZATION WITHIN SYSTEM ALTERNATIVE

W
A

WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS - PLANNERS

EO-WAIMALU.DWG 11:16 11/11/98 L:DWG\3152-02\FIGURES



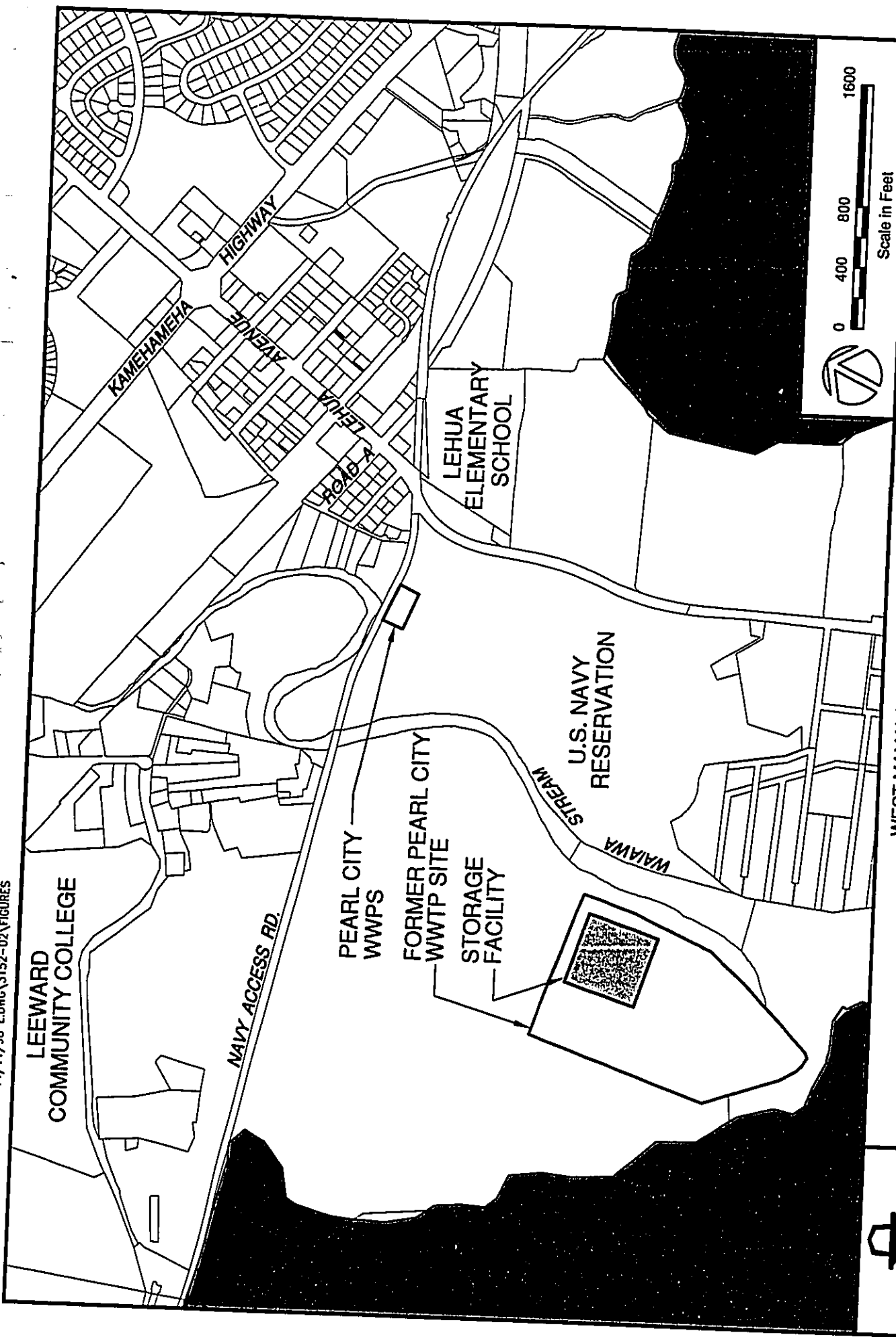
WEST MAMALA BAY FACILITIES PLAN

WAIMALU WWPS STORAGE FACILITY FLOW EQUALIZATION WITHIN SYSTEM ALTERNATIVE

**WILSON OKAMOTO
& ASSOCIATES, INC.**
ENGINEERS • PLANNERS

FIGURE
3-6

E0-PRLCTY.DWG 11:16 11/11/98 L:\DWG\3152-02\FIGURES



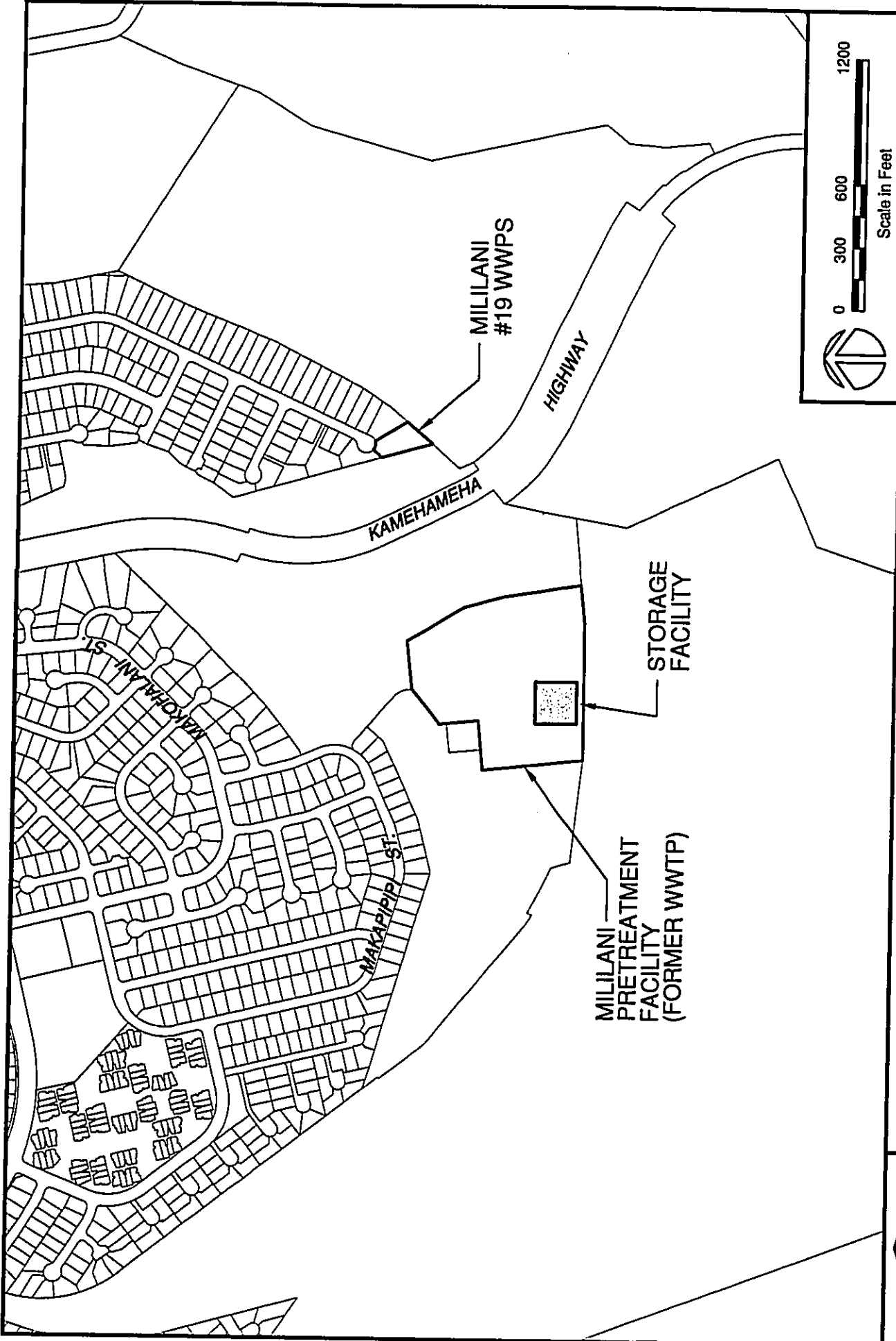
WEST MAMALA BAY FACILITIES PLAN

PEARL CITY WWPS STORAGE FACILITY
FLOW EQUALIZATION WITHIN SYSTEM ALTERNATIVE

FIGURE
3-7

W
ILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS

EO-MIL.DWG 11:16 11/11/98 L:\DWG\3152-02\FIGURES



WILSON OKAMOTO & ASSOCIATES, INC.
ENGINEERS • PLANNERS

WEST MAMALA BAY FACILITIES PLAN

**MILILANI PTF STORAGE FACILITY
FLOW EQUALIZATION WITHIN SYSTEM ALTERNATIVE**

FIGURE 3-8

Since this alternative would only address existing and future PWWF capacity deficiencies along the East Interceptor System, structural deficiencies along the East Interceptor would also need to be addressed.

3.2 Hybrid Alternative

The hybrid alternative involves dividing the two previous alternatives into four pairs of interchangeable components, as described below. Various combinations (up to 14) of hybrid alternatives are possible by combining the alternative components in each pair (see aforementioned Figures 3-3 and 3-4, referring to the two alternatives, and corresponding Tables 3-2 and 3-3 respectively):

1. Upgrade System Alternative
Component: Waimalu Relief Sewer Tunnel

Flow Equalization Within System Alternative
Component: Halawa WWPS Storage Facility
2. Upgrade System Alternative
Component: Waimalu Relief Sewer Tunnel/Pearl City Trunk Sewer Upgrade

Flow Equalization Within System Alternative
Component: Waimalu WWPS Storage Facility
3. Upgrade System Alternative
Component: Pearl City Relocation & Upgrade/Honouliuli Interceptor Relief

Flow Equalization Within System Alternative
Component: Pearl City WWPS Storage Facility
4. Upgrade System Alternative
Component: Waipahu WWPS Future Expansion/Honouliuli Interceptor Relief

Flow Equalization Within System Alternative
Component: Mililani PTF Storage Facility

3.3 Isolated System Deficiencies

In addition to the deficiencies in the West and East Interceptor Systems, the collection system includes various other deficiencies in major collection lines. As discussed previously, the City addresses the existing capacity and structural deficiencies in these lines through the I/I Plan. Preliminary recommendations are based on upgrades and improvements recommended by the City's I/I Plan for

accommodating projected future flows to the year 2020 as developed through the Facilities Plan.

The isolated system deficiencies are depicted in Figure 3-9 and Table 3-4 for the Honouliuli area; Figure 3-10 and Table 3-5 for the Pearl City Area; and Figures 3-11 to 3-12 and Table 3-6 for the Waipahu Area. The tables summarize the preliminary recommendation and cost for addressing each deficiency.

3.4 Unsewered Areas

Preliminary recommendations for Ewa Beach and Honouliuli unsewered areas are as follows:

3.4.1 Honouliuli Unsewered Area

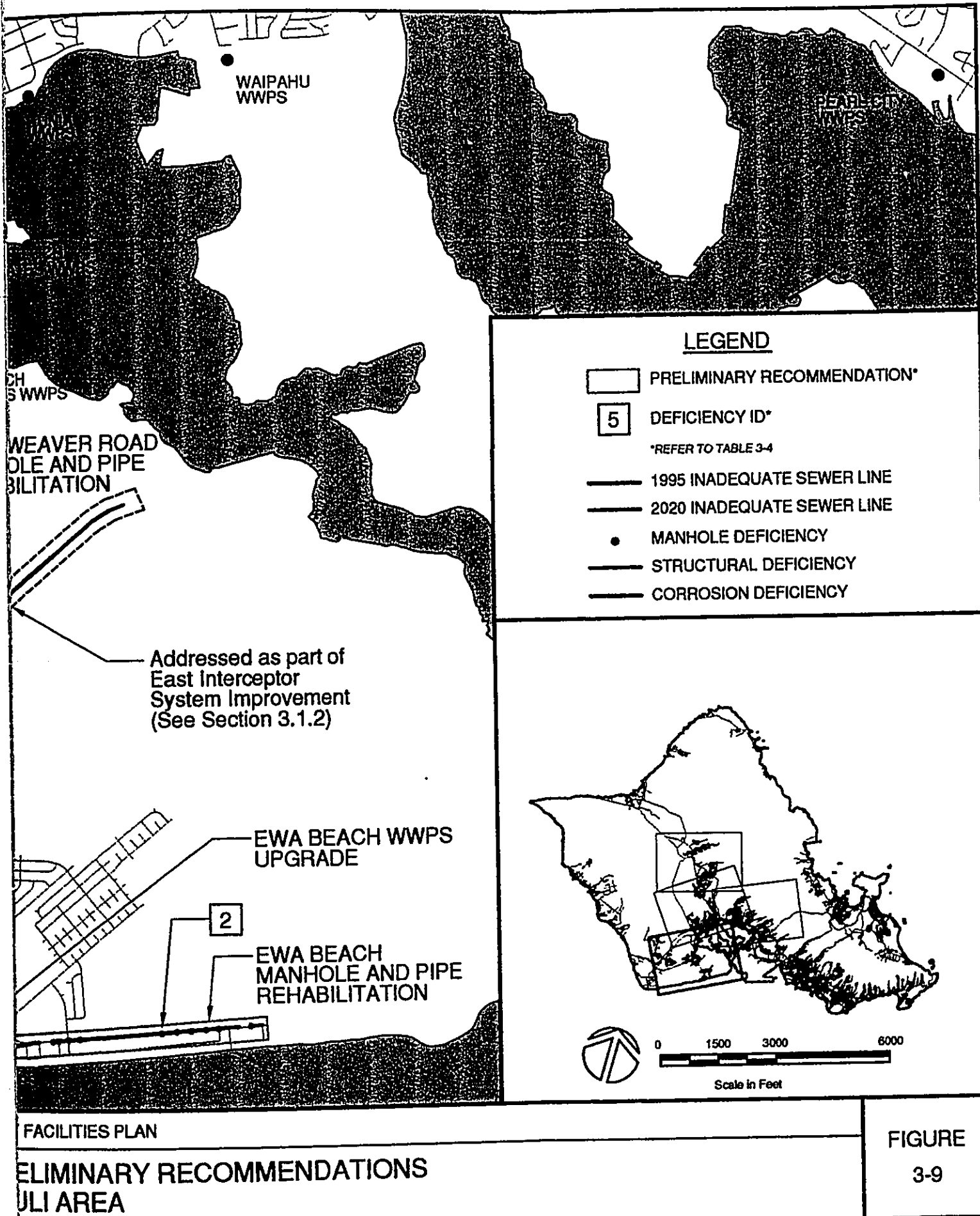
The Honouliuli unsewered areas is located on the Ewa Plain, and is bounded by the Old Fort Weaver Road, West Loch Golf Course and Fort Weaver Road (see Figure 3-13). The community is comprised of a mixture of scattered single-family homes, farm structures and several commercial establishments. The total land area of this community is in excess of one hundred acres and includes approximately 20 homes.

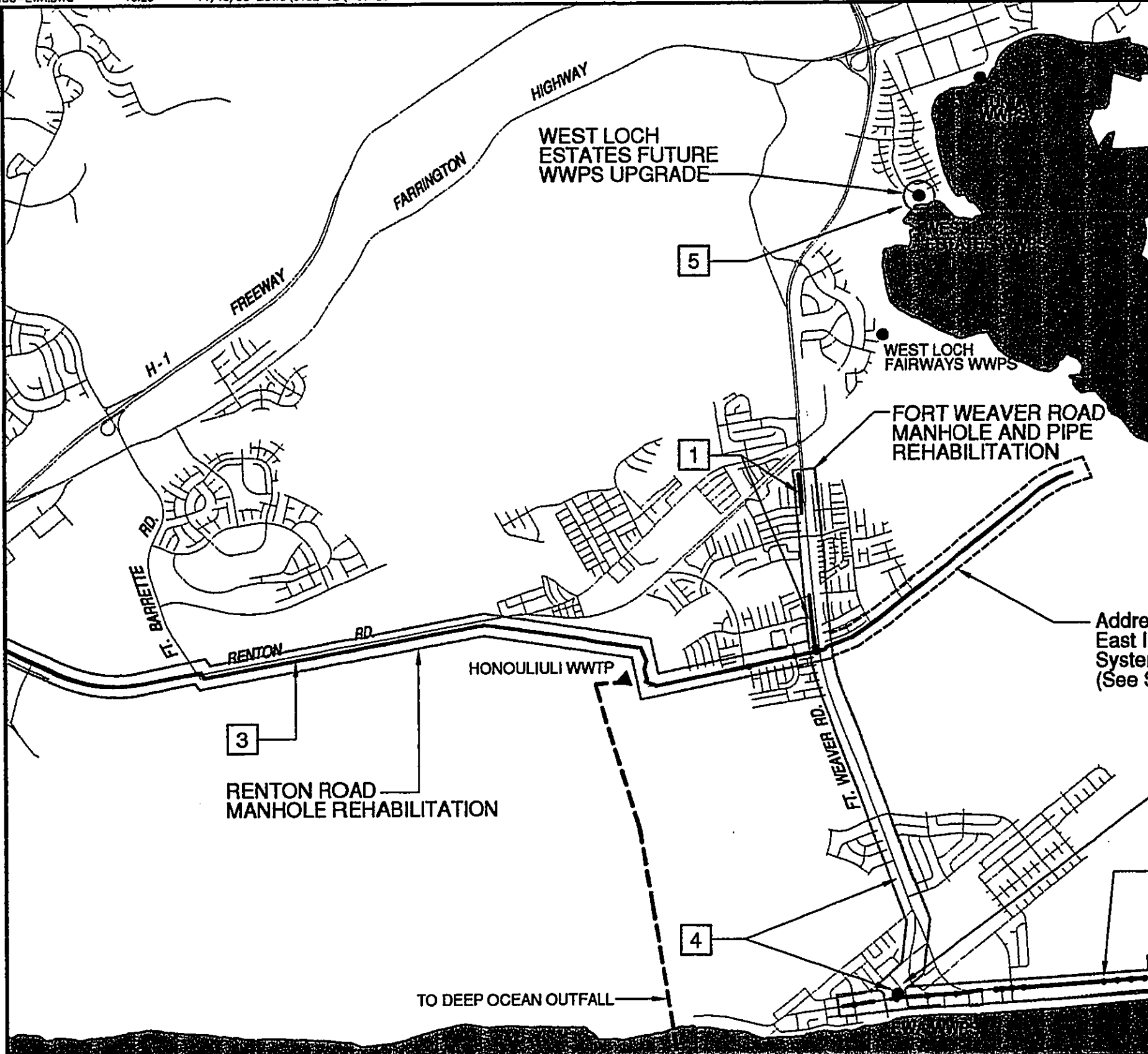
The preliminary recommendation for this unsewered area is to defer action since master plans are being prepared for the development of the East Kapolei area. The master plans include new wastewater collection systems that could accommodate the Honouliuli unsewered area. The size of the gravity line is anticipated to be 12 inches in diameter to compensate for the slight slope and long distance the flow needs to be conveyed to reach the planned extension of the collection system (4,000 feet along the east side of the unsewered area up to Farrington Highway, as shown in Figure 3-13). The cost to install a gravity collection system is estimated to be approximately \$1,000,000.

3.4.2 Ewa Beach Unsewered Area

The Ewa Beach unsewered area is located on the Ewa Plain where it is bounded by James Campbell High School, Hawaii Prince Golf Course, New Ewa Beach Golf Club, North Road, and the Pacific Tsunami Warning Center (see Figure 3-14). The area is comprised of approximately 970 single-family residences and encompasses over 150 acres.

This area is fairly flat but it is possible to provide a new gravity sewer system without a WWPS. A new sewer system would be installed within the existing roadways and connect to the existing sewer lines. The cost of the gravity sewer system is estimated to be approximately \$8,000,000.





Address East I System (See S



WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS

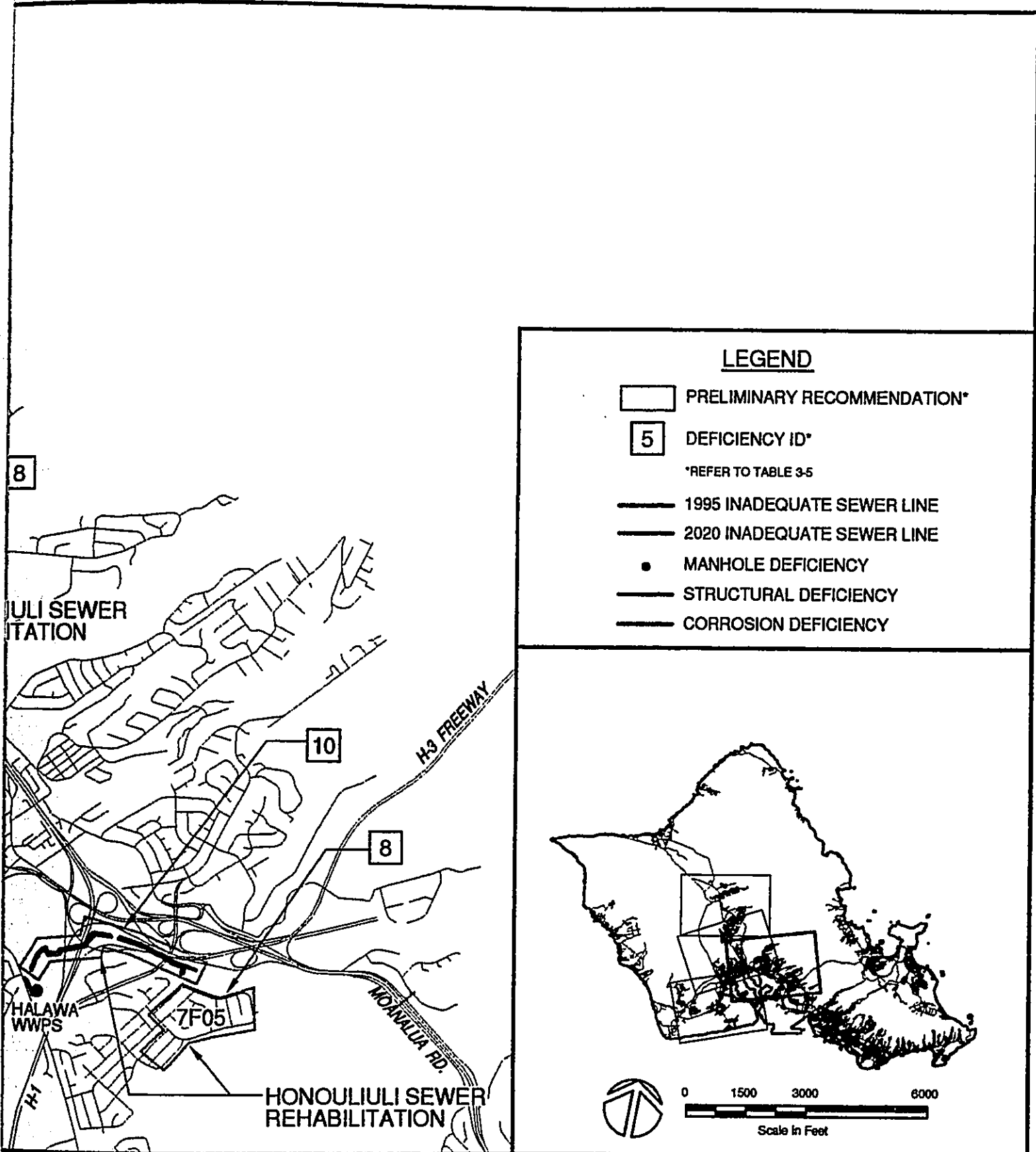
WEST MAMALA BAY FACILITIES PLAN

ISOLATED DEFICIENCIES AND PRELIMINARY RECOMMENDATIONS
HONOUILIULI AREA

Isolated System Deficiencies And Preliminary Recommendations Honouliuli Area				
ID	Deficiency	Description	Preliminary Recommendations	Cost
1	Corrosion	18- to 30-inch lines along Ft. Weaver Rd. from Geiger Rd. to Renton Rd. Intersection: HN-01-EW-0028 to HN-01-EW-0033 (24- to 30-inch) HN-01-EW-0039 to HN-01-EW-0042 (18-inch)	<u>Fort Weaver Road Manhole and Pipe Rehabilitation</u> This project includes rehabilitation of deficient lines and corroded manholes along Ft. Weaver Rd., Geiger Rd. to Renton Rd.	\$4.22 mil
2	Corrosion and Structural	24- to 36-inch lines along Pohakupuna Rd. and Ft. Weaver Rd. Corrosion deficiencies: West of Ewa Beach WWPS- HN-04-EB-0001 to HN-04-EB-0037 (24-inch) East of Ewa Beach WWPS- HN-04-EB-0001 to HN-04-EB-0029 (24- to 36-inch) Structural deficiencies: HN-04-EB-0027 to HN-04-EB-0029 (24-inch)	<u>Ewa Beach Manhole and Pipe Rehabilitation</u> This project includes rehabilitation of the deficient lines and corroded manholes along Pohakupuna Road and Fort Weaver Road.	\$11.57 mil

Continued

Isolated System Deficiencies And Preliminary Recommendations Honouliuli Area				
ID	Deficiency	Description	Preliminary Recommendations	Cost
3	Corrosion	Various manholes along Renton Rd. Note: These manholes are not shown as corrosion deficiencies on the I/I Plan's Condition Assessment because corrosion to the manhole chamber is minor. According to the I/I Plan there is severe corrosion to the manhole frame, cover and/or bench that do not affect its structural integrity.	<u>Renton Road Manhole Rehabilitation</u> This project includes rehabilitation of the corroded manholes along Renton Rd.	\$12.82 mil
4	Capacity	Existing and future capacity deficiencies at the Ewa Beach WWPS	<u>Ewa Beach WWPS Upgrade</u> This project includes upgrading the existing WWPS to accommodate the existing and future flows.	\$5.87 mil
5	Capacity	Future capacity deficiency at the West Loch Estates WWPS	<u>West Loch Estates Future WWPS Upgrade</u> This project upgrading the existing WWPS to accommodate future flows.	\$100,000
			Isolated Deficiencies For Honouliuli Area Total Cost =	\$34.58 Million



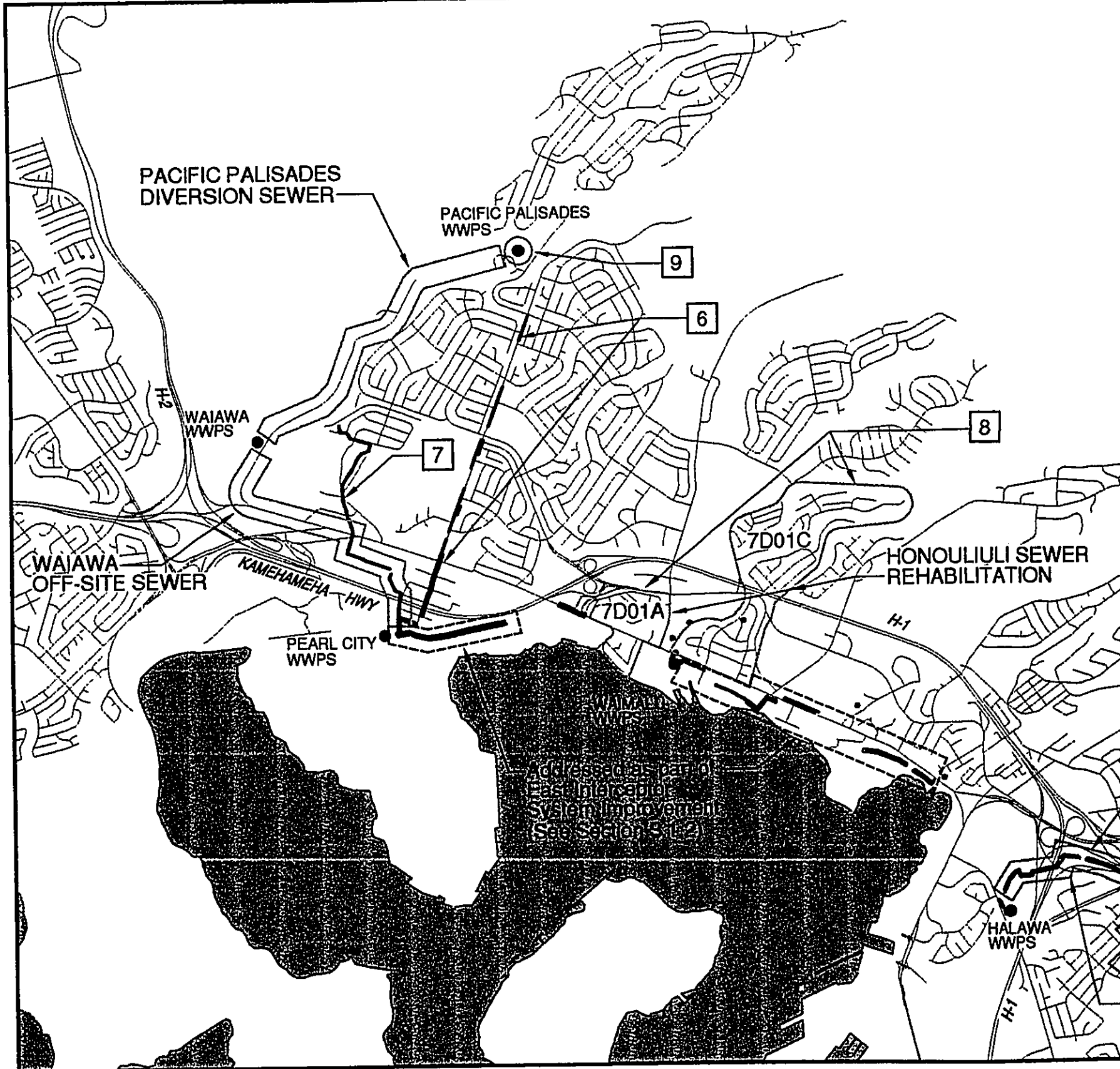
LEGEND

- PRELIMINARY RECOMMENDATION*
- 5 DEFICIENCY ID*
*REFER TO TABLE 3-5
- 1995 INADEQUATE SEWER LINE
- 2020 INADEQUATE SEWER LINE
- MANHOLE DEFICIENCY
- STRUCTURAL DEFICIENCY
- CORROSION DEFICIENCY

FACILITIES PLAN

PRELIMINARY RECOMMENDATIONS
STUDY AREA

FIGURE
3-10



WEST MAMALA BAY FACILITIES PLAN

ISOLATED DEFICIENCIES AND PRELIMINARY PEARL CITY AREA

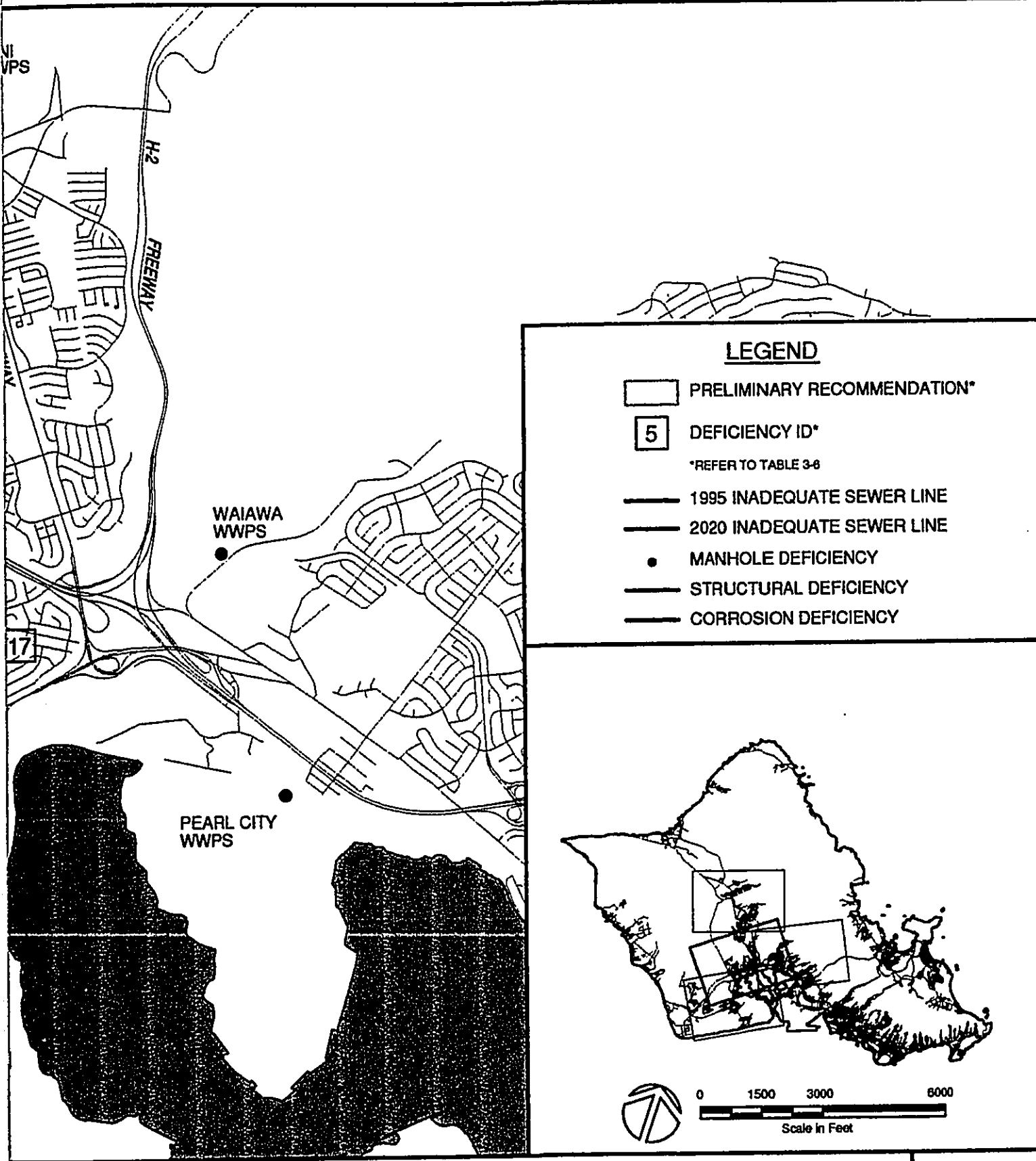
**Table 3-5
Isolated System Deficiencies And Preliminary Recommendations
Pearl City Area**

ID	Deficiency	Description	Preliminary Recommendations	Cost
6	Capacity	Existing and future capacity deficiencies in the 12- to 18-inch lines along Waimano Home Rd. from the Komo Mai Dr. intersection to the Pearl City WWPS: HN-24-XA-0010 to HN-24-XA-0486 (12- to 18-inch)	<u>Pacific Palisades Diversion Sewer</u> This project includes construction of a 15-inch replacement line to divert half of the Pacific Palisades flow to Waiawa Industrial Park, bypassing the deficient lines along Waimano Home Rd. Also includes construction of a relief line to accommodate the excess flow from the remaining deficient lines in Waimano Home Rd.	\$3.98 mil
7	Capacity and Structural	Existing and future capacity deficiencies in the 10- to 21-inch Manana Trunk sewer from Waiawa Industrial Park through Manana Naval Reservation to Pearl City WWPS: HN-24-XA-0040 to HN-24-XA-0291 (10- to 21-inch) Structural deficiencies: HN-24-XA-0145 to HN-24-XA-0150 (21-inch)	<u>Waiawa Off-site Sewer</u> This project includes construction of a new 36-inch sewer to replace the deficient lines. The replacement line will transport the future Waiawa Gentry Development and the Waiawa Industrial Park flows to Pearl City WWPS. Also includes abandonment of Waiawa Industrial Park WWPS.	Developer Financed
8	Capacity	Capacity deficiency due to high wet weather infiltration and inflow problems in the existing lines within the following I/I Plan's study basins: 7D01A (Waiawa) 7D01C (Waimalu) 7F05 (Foster Village)	<u>Honouliuli Sewer Rehabilitation</u> This project includes rehabilitation of mains, manholes and laterals in basins 7D01A, 7D01C and 7F05 to reduce WW/I/I flows.	\$21.21 mil

Continued

**Table 3-5 (continued)
Isolated System Deficiencies and Preliminary Recommendations
Pearl City Area**

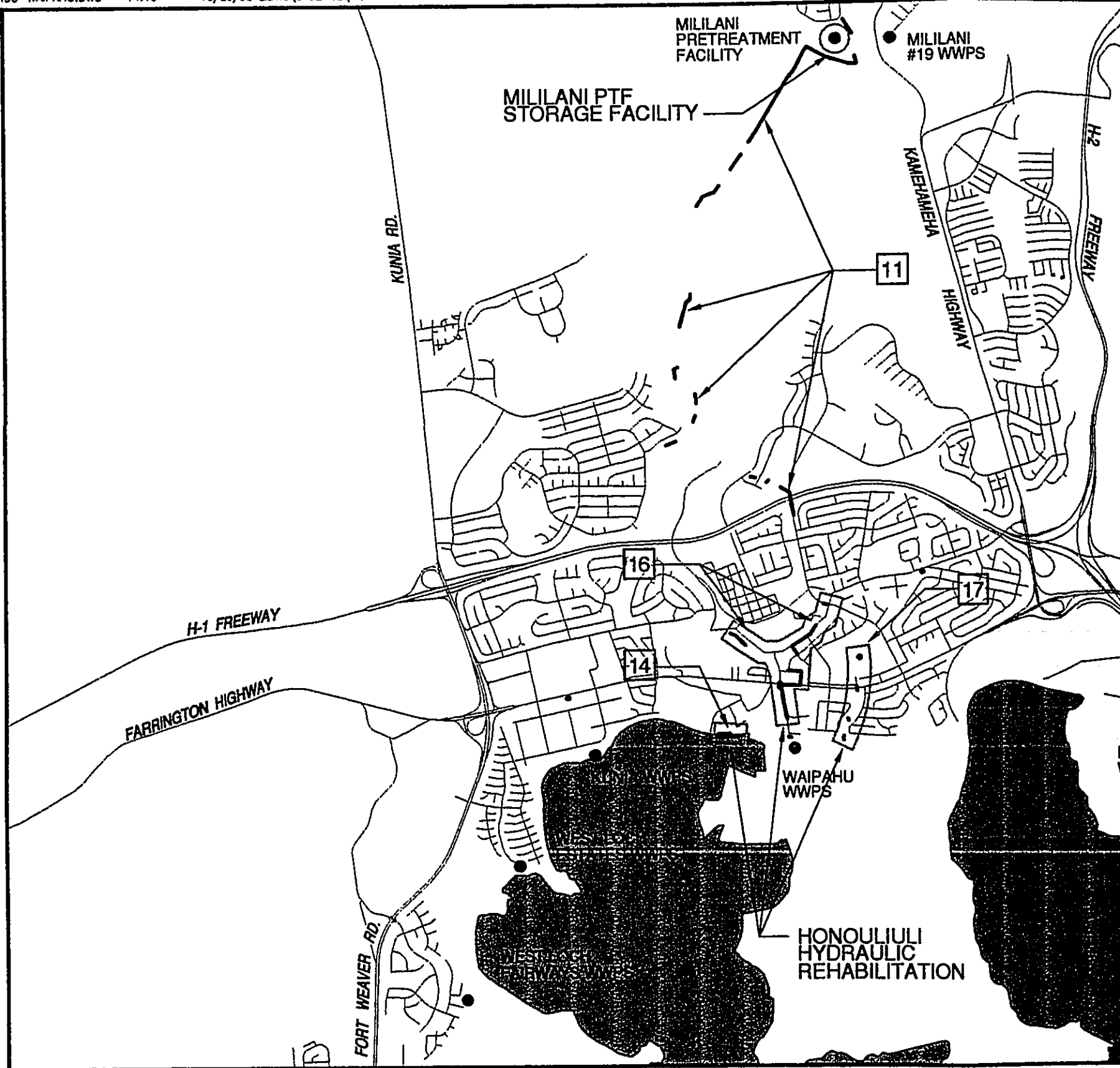
ID	Deficiency	Description	Preliminary Recommendations	Cost
9	Capacity	Existing and future capacity deficiencies at Pacific Palisades WWPS and Force Main	<u>Pacific Palisades Diversion Sewer</u> This project includes construction of a 15-inch replacement line to divert half of the Pacific Palisades flow to Waiawa Industrial Park, bypassing the deficient lines along Waimano Home Rd. Also includes construction of a relief line to accommodate the excess flow from the remaining deficient lines in Waimano Home Rd.	Covered under item 6.
10	Capacity	Existing and future capacity deficiencies in the 18- to 24-inch lines along Halawa Stream to Halawa WWPS: HN-26-XX-0600 to HN-26-XX-2600 (18- to 21-inch) HN-26-XX-0100 to HN-26-XX-0300 (24-inch)	<u>Halawa Relief Sewer</u> This project includes rehabilitation of mains, manholes and laterals in basins 7D01A, 7D01C and 7F05 to reduce WWI/I flows.	Covered under item 8.
			Isolated Deficiencies For Pearl City Area Total Cost =	\$25.19 Million



FACILITIES PLAN

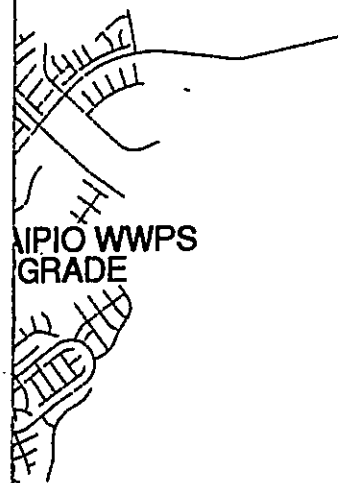
PRELIMINARY RECOMMENDATIONS
(KUNIA, KUNIA, WAIKELE, AND WAIPIO)

FIGURE
3-11



WEST MAMALA BAY FACILITIES PLAN

**ISOLATED DEFICIENCIES AND PRELIMINARY R
WAIPAHU AREA - MAP 1 OF 2 (WAIPAHU, KUNIA, W**










NOULIULI
HYDRAULIC
REHABILITATION

MEHAMEHA HIGHWAY
PUMP SEWER
CONSTRUCTION, MILILANI

MILILANI PTF
STORAGE FACILITY

LEGEND

-  PRELIMINARY RECOMMENDATION*
-  DEFICIENCY ID*
*REFER TO TABLE 3-8
-  1995 INADEQUATE SEWER LINE
-  2020 INADEQUATE SEWER LINE
-  MANHOLE DEFICIENCY
-  STRUCTURAL DEFICIENCY
-  CORROSION DEFICIENCY

0 1500 3000 6000
Scale in Feet

FACILITIES PLAN
PRELIMINARY RECOMMENDATIONS
MAP 2 OF 2 (MILILANI)

FIGURE
3-12








AIPIO WWPS
GRADE

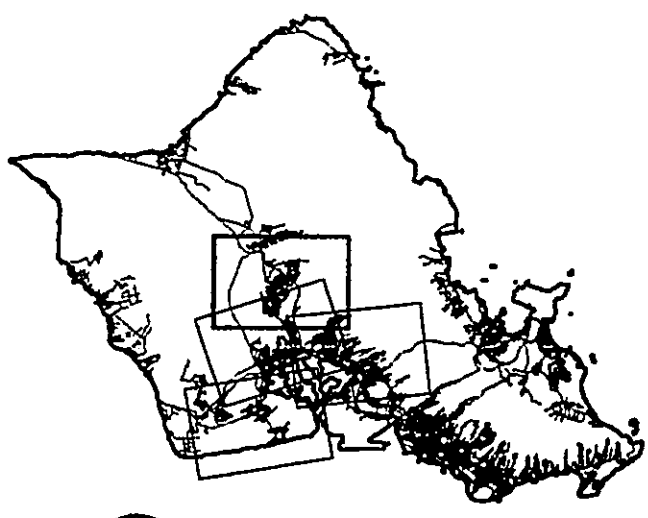
NOULIULI
DRAULIC
HABILITATION

MEHAMEHA HIGHWAY
UNK SEWER
CONSTRUCTION, MILILANI

MILANI PTF
ORAGE FACILITY

LEGEND

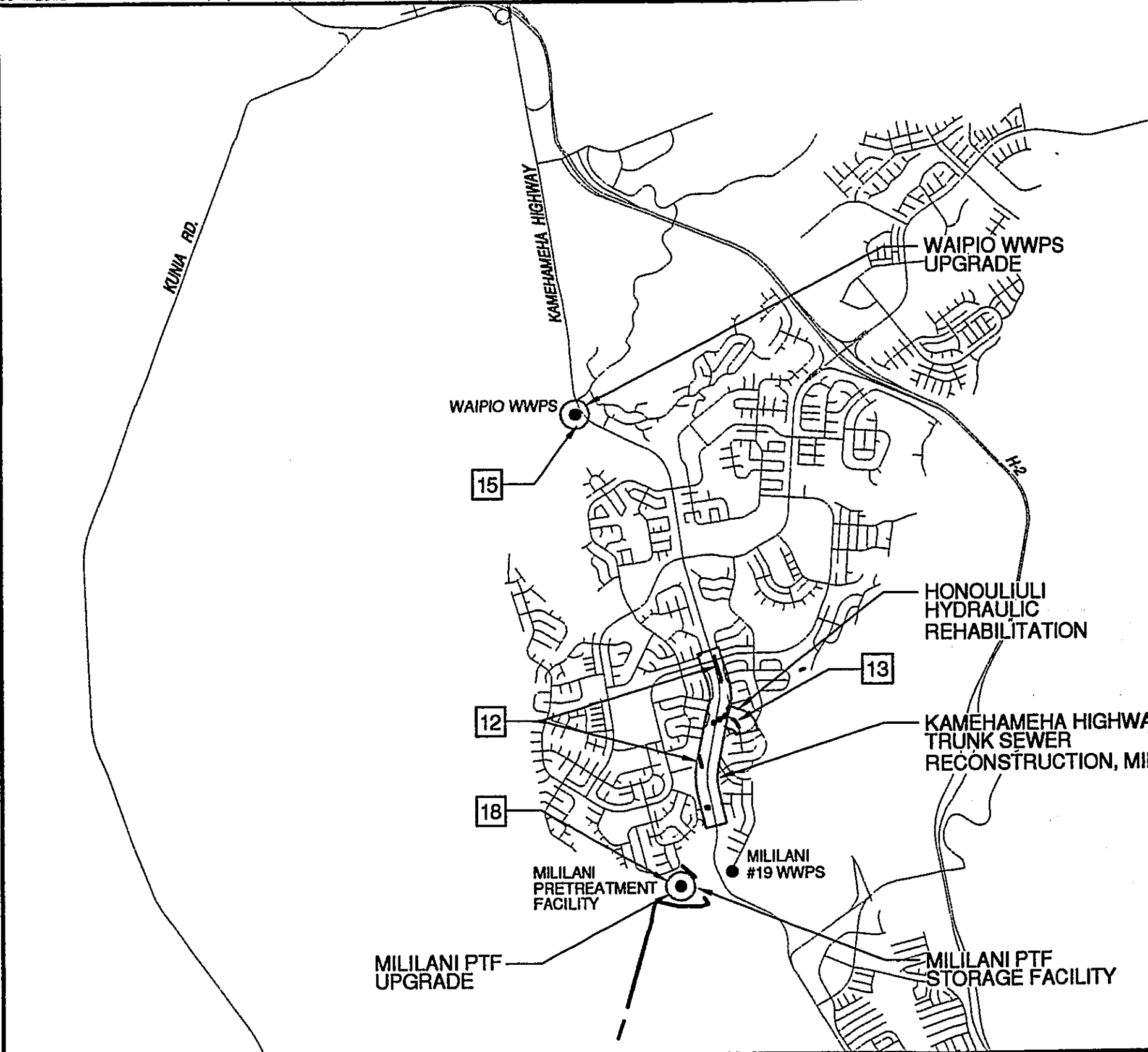
-  PRELIMINARY RECOMMENDATION*
-  DEFICIENCY ID*
*REFER TO TABLE 3-8
-  1995 INADEQUATE SEWER LINE
-  2020 INADEQUATE SEWER LINE
-  MANHOLE DEFICIENCY
-  STRUCTURAL DEFICIENCY
-  CORROSION DEFICIENCY



FACILITIES PLAN

PRELIMINARY RECOMMENDATIONS
MAP 2 OF 2 (MILILANI)

FIGURE
3-12



WEST MAMALA BAY FACILITIES PLAN



WILSON OKAMOTO & ASSOCIATES, INC.
ENGINEERS • PLANNERS

ISOLATED DEFICIENCIES AND PRELIMINARY RECO
WAIPAHU AREA - MAP 2 OF 2 (MILILANI)

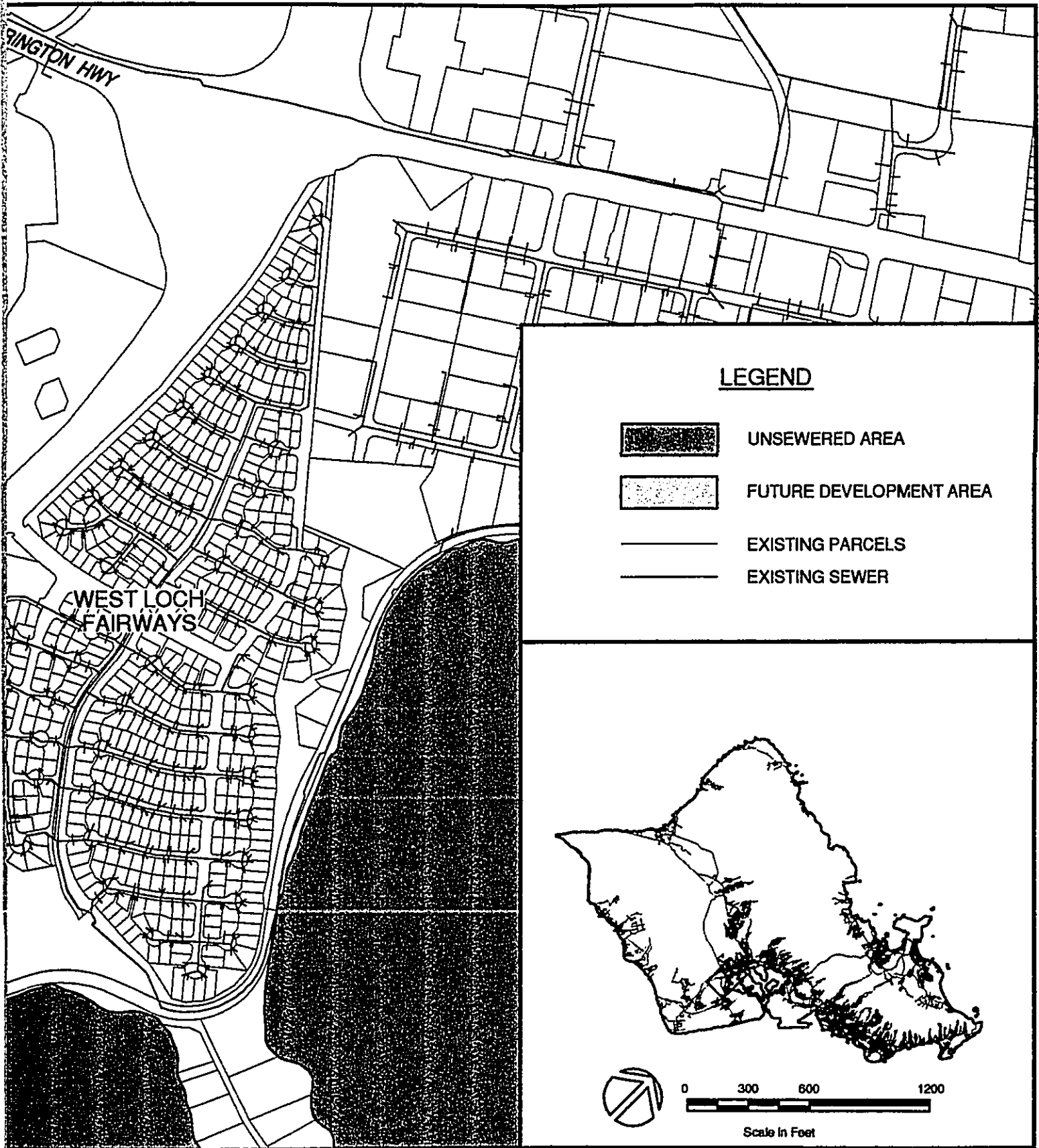
**Table 3-6
Isolated System Deficiencies and Preliminary Recommendations
Waipahu Area**

ID	Deficiency	Description	Preliminary Recommendations	Cost
11	Capacity and Structural	Existing structural and future capacity deficiencies in the 30- to 36-inch Milliani trunk sewer from Milliani PTF to Waipahu WWPS: HN-05-MI-0001 to HN-05-MI-0128	<u>Milliani PTF Storage Facility</u> This includes construction of an equalization facility at the Milliani PTF to alleviate the future downstream capacity problems.	Covered under Milliani PTF Storage Facility.
12	Structural	Existing structural deficiencies in the 18- to 30-inch lines along Kamehameha Highway Milliani, from Lanikuhana Ave. to Lanikuhana Pl.: HN-05-MI-0145 to HN-05-MI-0162	<u>Kamehameha Highway Trunk Sewer Reconstruction, Milliani</u> This project includes rehabilitation of the lines along Kamehameha Highway.	\$3.72 mil
13	Structural	Structural deficiencies in the 24- and 30-inch line along Kipapa Gulch and Kapuahi Street: HN-05-MI-0677 to HN-05-MI-0678 (24-inch) HN-05-MI-0657 to HN-05-MI-0658 (30-inch)	<u>Honouliuli Manhole and Pipe Rehabilitation</u> This project includes rehabilitation of deficient lines and manholes.	\$1.53 mil
14	Capacity	Existing and future capacity deficiencies in the 30-inch line along the railroad right-of-way near Kapakahi Stream HN-05-WP-0001 to HN-05-WP-0008	<u>Honouliuli Relief Sewers</u> This project includes construction of a parallel relief line or flow diversion line to relieve the capacity deficient lines.	\$2.34 mil
15	Capacity	Existing and future capacity deficiencies at the Waipio WWPS	<u>Waipio Upgrade WWPS</u> This project includes upgrading the existing Waipio WWPS to accommodate future flows.	\$4.56 mil

Continued

**Table 3-6 (continued)
Isolated System Deficiencies and Preliminary Recommendations
Waipahu Area**

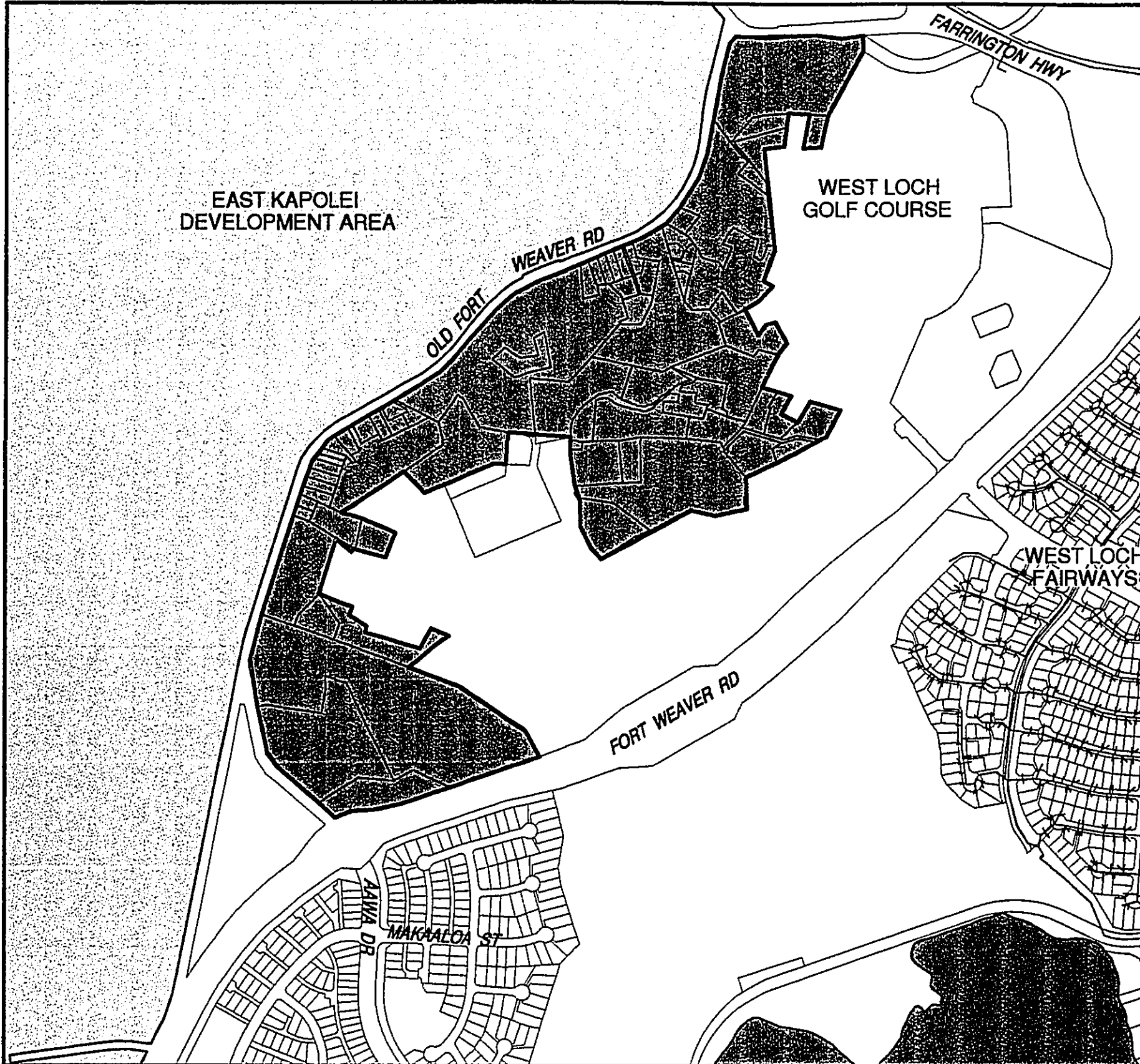
ID	Deficiency	Description	Preliminary Recommendations	Cost
16	Structural	Structural deficiencies in the 12-inch line along Waipahu St. near Waipahu Depot Rd. HN-05-WP-0168 to HN-05-WP-0172	<u>Honouliuli Hydraulic Rehabilitation</u> This project includes construction of a relief or flow diversion line to relieve the deficient lines.	Covered under Item 14.
17	Structural	Structural deficiencies in the 8-inch line along the drainage canal near Awamoku St.: HN-05-CR-0009 to HN-05-CR-0011 HN-05-CR-0015 to HN-05-CR-0016	<u>Honouliuli Manhole and Pipe Rehabilitation</u> This project includes rehabilitation of lines and manholes in the deficient lines.	Covered under Item 13.
18	Capacity	Existing and future capacity deficiencies at the Milliani PTF	<u>Milliani PTF Upgrade</u> This project includes upgrading the existing PTF to accommodate existing peak flows. <u>Milliani PTF Future Upgrade</u> This project includes upgrading the PTF to accommodate future peak flows.	\$2.25 mil \$560,000
Isolated Deficiencies For Waipahu Area Total Cost =				\$14.96 Million



FACILITIES PLAN

ULIULI
ED AREA

FIGURE
3-13



WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS

WEST MAMALA BAY FACILITIES PLAN




HONOULIULI
UNSEWERED AREA

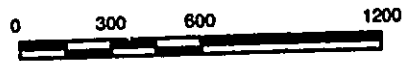
HAWAII PRINCE
GOLF COURSE

NEW EWA BEACH
GOLF CLUB

ARNING

LEGEND

-  UNSEWERED AREA
-  EXISTING PARCELS
-  EXISTING SEWER



Scale in Feet

FACILITIES PLAN

EACH
ED AREA

FIGURE

3-14

HAWAII PRINCE
GOLF COURSE

ILIMA INTERMEDIATE
SCHOOL

JAMES CAMPBELL
HIGH SCHOOL

POHAKEA
ELEMENTARY
SCHOOL

EWA BEACH
COMMUNITY
PARK

NORTH RD

KILAHU ST

TSUNAMI WARNING
CENTER

FORT WEAVER RD



WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS

WEST MAMALA BAY FACILITIES PLAN

EWA BEACH
UNSEWERED AREA

3.5 Treatment and Disposal

The preliminary recommendation for the Honouliuli WWTP to accommodate projected 2020 wastewater flows is the "Moderate Upgrade" scenario assessed in the Pre-Final Facilities Plan Report. This scenario provides a reasonably attainable level of beneficial use for both reclaimed water and biosolids that would meet the City's Consent Decree requirements. It consists of the following:

- An improved on-site laboratory and odor control program;
- Liquid Treatment- Based on ADWF, 51-mgd primary, 13-mgd secondary (existing), 13-mgd advanced reuse (Ewa Water Recycling Facility);
- Solids Treatment and Disposal- Anaerobic digestion/dewatering and biosolids reuse (replaces existing thermal conditioning); and
- Effluent Disposal/Reuse- 51-mgd ocean discharge, 13-mgd reclamation (Ewa Water Recycling Facility), a new effluent pump station to accommodate PWWF and plugging of the outfall diffuser ports to address low ADWF.

The process flow diagram of the recommended scenario is presented in Figures 3-15 and 3-16.

The treatment and disposal capacities of this preliminary recommendation may need to be adjusted in the final recommendation if flow equalization in the East Interceptor System is included in the final recommendation for the wastewater collection system. The treatment and disposal capacities in the preliminary recommendation are based on accommodating PWWF without equalization. If PWWF is reduced by equalization in the collection system, PWWF at the Honouliuli WWTP could also be reduced.

3.5.1 Odor Control Program

The preliminary recommendation for the odor control program includes the following:

- Reducing the amount of H₂S produced in the collection system. Chemical additions should be considered for long force mains;
- Acquisition of land adjacent to the plant site as an additional buffer zone. Although it may not be feasible, a buffer zone of 1,000 to 2,000 feet would be desirable; and

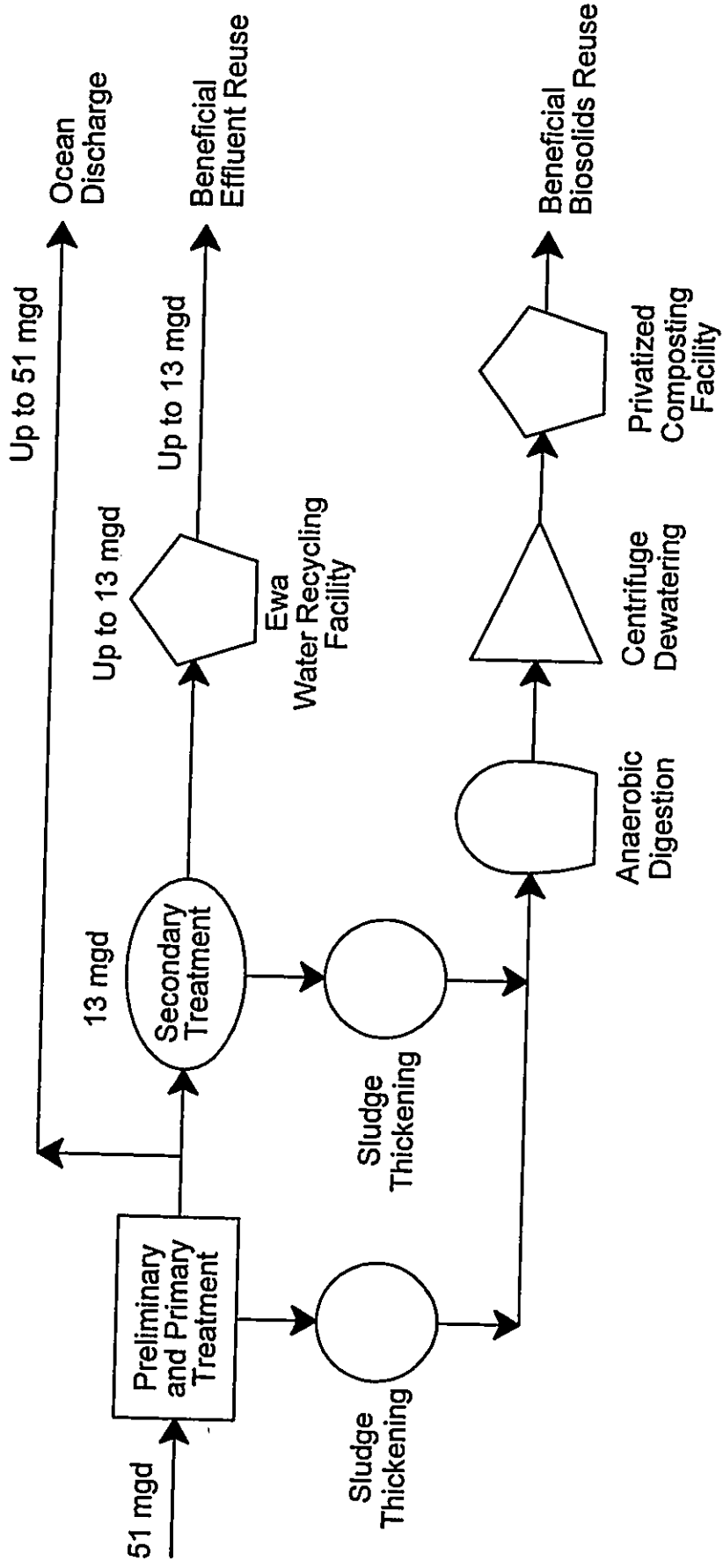
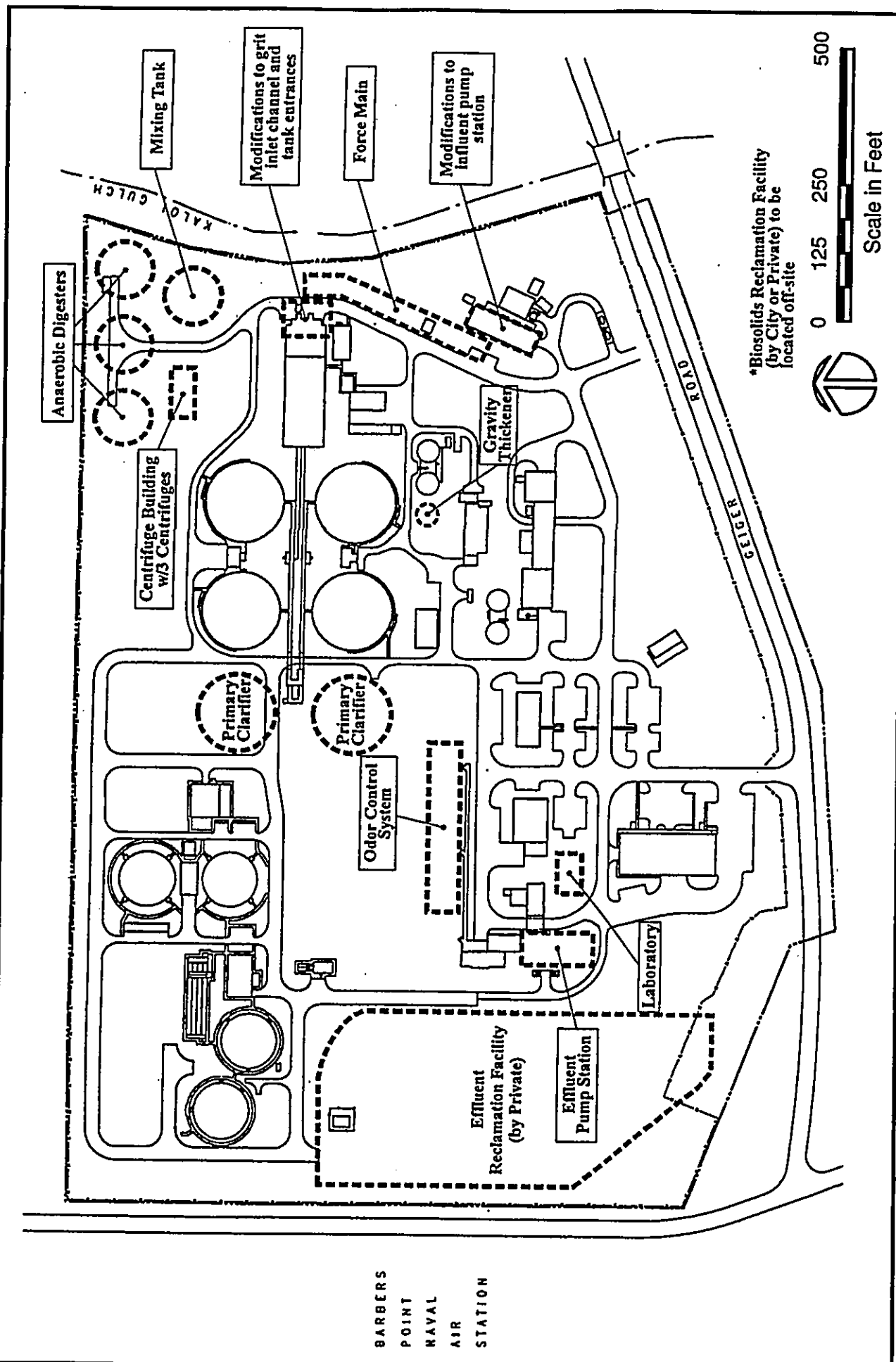


FIG-A&B 04/24/00 1:44PM L:\W0A\3152-01\GRAPHICS



BARBERS
POINT
NAVAL
AIR
STATION

**WILSON OKAMOTO
& ASSOCIATES, INC.**
ENGINEERS • PLANNERS

WEST MAMALA BAY FACILITIES PLAN
RECOMMENDED LAYOUT
FOR HONOULIULI WWTP

FIGURE
3-16

- Improvements in foul air containment, collection, and treatment. A preliminary recommendation is to consider odor treatment consisting of a two-stage process involving (1) a wet-scrubber, with pH adjustment to maximize H₂S, and (2) a bulk-media biofilter, consisting of bark, compost, soil, and/or other materials to maximize organic compound removal.

To confirm the appropriateness of this program, and to develop specific design and operating criteria, an odor analysis of the Honouliuli WWTP is recommended to identify the types of amounts of odorous material presently being produced.

3.5.2 Liquid Treatment

The preliminary recommendation to address deficiencies in plant capacity is plant expansion, since it is uncertain to what extent flow equalization within the collection system will be pursued and how it could address projected PWWF at the plant. For plant expansion, the capacity of the influent pump station, associated force mains, grit/preaeration inlet channel, primary clarifiers, and effluent discharge lines would be increased to meet the year 2020 PWWF. Adequate redundancy will also be incorporated to facilitate maintenance of unit processes, particularly at the grit/preaeration inlet channel.

The appropriate level of liquid treatment was also assessed. The preliminary recommendation is minimal action because the 301(h) waiver is expected to be renewed and the existing liquid treatment level will likely be sufficient to meet all anticipated requirements of the forthcoming NPDES permit.

3.5.3 Solids Treatment and Disposal

Although the solids treatment process should be determined after the City has decided upon a long-term disposal method, the preliminary recommendation is to replace the existing thermal conditioning process with anaerobic digestion, dewatering and reuse. This combination meets all anticipated permit and legal requirements and offers flexibility for various biosolids reuse applications. Moreover, anaerobic digestion offers lower operation and maintenance costs over the existing process and produces methane gas, which can be used to generate heat or electrical power for other plant operations.

3.5.4 Effluent Disposal and Reuse

An effluent pump station is recommended to be constructed as soon as possible to accommodate the modeled existing PWWF. The preliminary recommendation to address the existing low flow concern is to temporarily plug and install check valves on the diffuser ports until sufficient velocities in the outfall can be sustained. By 2020, velocities should be adequate to reopen all diffuser ports.

3.6 Summary of Costs for Preliminary Recommendations

Estimated capital costs for the recommended "Moderate Upgrade" alternative for the Honouliuli WWTP are presented in Table 3-7. Associated operation and maintenance costs are presented in Table 3-8.

Table 3-9 summarizes the preliminary recommendations and their respective estimated capital costs to address collection system deficiencies.

Item	Capital Cost (In \$1,000's) ^{a,b}
Common Elements	
Laboratory	1,080
Foul air treatment	3,310
Liquid Treatment	
Existing plant improvements	30,400
Secondary treatment	0
Solids Treatment and Disposal	
Anaerobic digestion/dewatering/reuse	39,100
Effluent Disposal/Reuse	
Effluent pump station	28,000
Effluent reuse, U. S. Filter (13 mgd)	0
Total capital cost	101,890
^a ENR CCI = 7700	
^b Includes 35 percent for contingency and engineering, legal, and administrative costs.	
Source: Brown and Caldwell Consultants	

Table 3-8 Annual Operation and Maintenance Cost for Scenario 2, Moderate Upgrade Honouliuli WWTP	
Item	Annual Cost (In \$1,000's) ^a
Common Elements	
Laboratory	110
Foul air treatment	450
Liquid Treatment	
Existing plant improvements	4,650
Secondary treatment	560
Solids Treatment and Disposal	
Anaerobic digestion/dewatering/reuse	2,010
Effluent Disposal/Reuse	
Effluent pump station	210
Effluent reuse, U. S. Filter (13 mgd)	0
Total capital cost	7,990
^a ENR CCI = 7700	
Source: Brown and Caldwell Consultants	

Table 3-8 Annual Operation and Maintenance Cost for Scenario 2, Moderate Upgrade Honouliuli WWTP	
Item	Annual Cost (In \$1,000's) ^a
Common Elements	
Laboratory	110
Foul air treatment	450
Liquid Treatment	
Existing plant improvements	4,650
Secondary treatment	560
Solids Treatment and Disposal	
Anaerobic digestion/dewatering/reuse	2,010
Effluent Disposal/Reuse	
Effluent pump station	210
Effluent reuse, U. S. Filter (13 mgd)	0
Total capital cost	7,990
^a ENR CCI = 7700	
Source: Brown and Caldwell Consultants	

**Table 3-9
Summary of Costs for Preliminary Recommendations
Collection System Deficiencies**

Deficiency Classification	Description	Cost	
West Interceptor System	1. Ko Olina Relief Interceptor	Financed by Developers	
	2. Kapolei Interceptor	Financed by Developers	
		System Upgrade Alternative	Flow Equalization Alternative
East Interceptor System	3. Waimalu Relief Sewer Tunnel	\$26,390,000	
	4. Pearl City Trunk Sewer Upgrade	\$5,790,000	
	5. Pearl City WWPS Relocation and Upgrade	\$34,510,000	
	6. Pearl City WWPS Future Upgrade	\$1,870,000	
	7. Waipahu WWPS Upgrade*	\$7,400,000	\$7,400,000
	8. Waipahu WWPS Future Upgrade	\$9,580,000	
	9. Honouliuli Interceptor Relief	\$19,210,000	
	10. Halawa WWPS Storage Facility		\$14,500,000
	11. Waimalu WWPS Storage Facility		\$15,150,000
	12. Pearl City WWPS Storage Facility		\$31,060,000
	13. Mililani PTF Storage Facility		\$19,230,000
	Subtotal	\$104,750,000	\$87,340,000
Isolated System Deficiencies Honouliuli Area	14. Fort Weaver Road Manhole and Pipe Rehabilitation	\$4,220,000	
	15. Ewa Beach Manhole and Pipe Rehabilitation*	\$11,570,000	
	16. Renton Road Manhole Rehabilitation	\$12,820,000	
	17. Ewa Beach WWPS Upgrade	\$5,870,000	
	18. West Loch Estates Future WWPS Upgrade	\$100,000	
Isolated System Deficiencies Pearl City Area	19. Pacific Palisades Diversion Sewer*	\$3,980,000	
	20. Waiawa Off-site Sewer	Financed by Developers	
	21. Honouliuli Sewer Rehabilitation	\$21,210,000	
Continued			

Table 3-9 (continued)
Summary of Costs for Preliminary Recommendations
Collection System Deficiencies

Deficiency Classification	Description	Cost	
Isolated System Deficiencies Waipahu Area	22. Kamehameha Highway Trunk Sewer Reconstruction, Mililani*	\$3,720,000	
	23. Honouliuli Manhole and Pipe Rehabilitation	\$1,530,000	
	24. Honouliuli Hydraulic Rehabilitation	\$2,340,000	
	25. Waipio WWPS Upgrade	\$4,560,000	
	26. Mililani PTF Upgrade	\$2,250,000	
Unsewered Areas	27. Mililani PTF Future Upgrade	\$560,000	
	28. Waimano Sewers Improvement District	\$1,100,000	
	29. Aiea Heights Improvement District*	\$1,344,000	
	30. Honouliuli Unsewered Area	\$1,000,000	
	Total Cost for Preliminary Recommendations of the West Mamala Bay Prefinal Facilities Plan	Assuming East Interceptor System Upgrade Alternative	Assuming East Interceptor System Flow Equalization Alternative
		\$190,924,000	\$173,514,000

*Currently identified and budgeted in the City's CIP project list

Chapter 4

Existing Environment, Impacts and Mitigation Measures

4. EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

4.1 Climate

The climate in the Study Area is considered subtropical with temperatures ranging from 60 to 85 degrees Fahrenheit. As shown in Figure 4-1, the mean annual rainfall averages from approximately 20 inches along the Ewa coastal areas to about 300 inches at the summit of the Koolau Range.

Northeasterly trade winds prevail during all months of the year on Oahu, except from November through March when the trades are sometimes interrupted by moderate to strong southerly Kona winds associated with cyclonic storm fronts. The tradewinds, which average 12-15 knots during the summer, bring mildly warm temperatures and humidity characteristic of air masses that have traveled great distances over the ocean. These winds also contribute to the small annual temperature range (*Atlas of Hawaii, Second Edition, Department of Geology, University of Hawaii, 1983*).

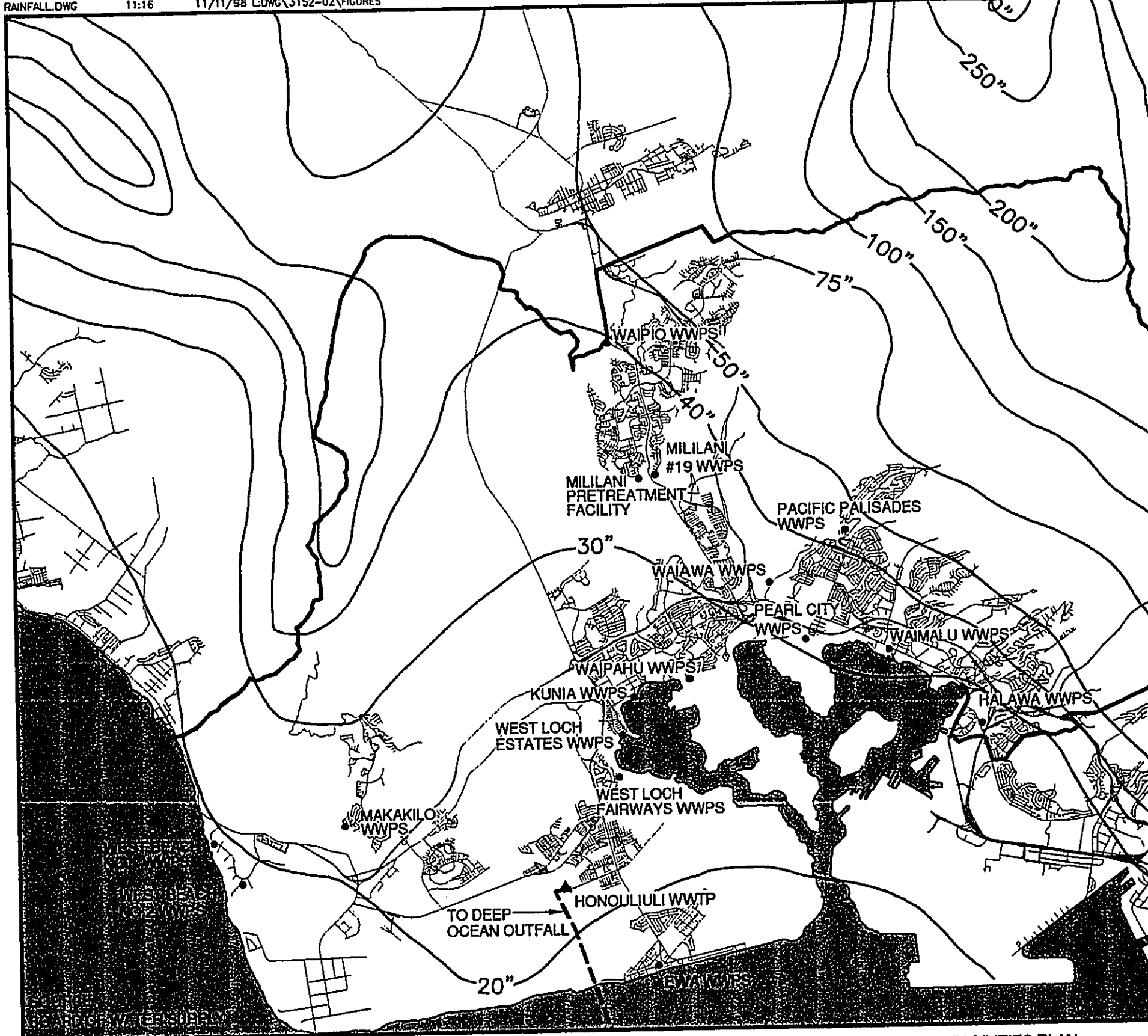
4.2 Physiography

4.2.1 Geology and Topography

Geology: The Study Area generally encompasses the southern slope of the Schofield Plateau, the coastal plain of Ewa and around Pearl Harbor, the eastern and southern flank of the Waianae Mountain Range and a leeward section of the Koolau Mountain Range as illustrated in Figure 4-2.

The gently sloping Schofield Plateau was formed as lava flows from the Koolau volcano banked against the already-eroded slope of the Waianae volcano, overlaying the soil-covered Waianae lavas. Urbanized areas on the Schofield Plateau include Mililani, Waipio/Crestview, and portions of Pearl City, Waimalu and Aiea.

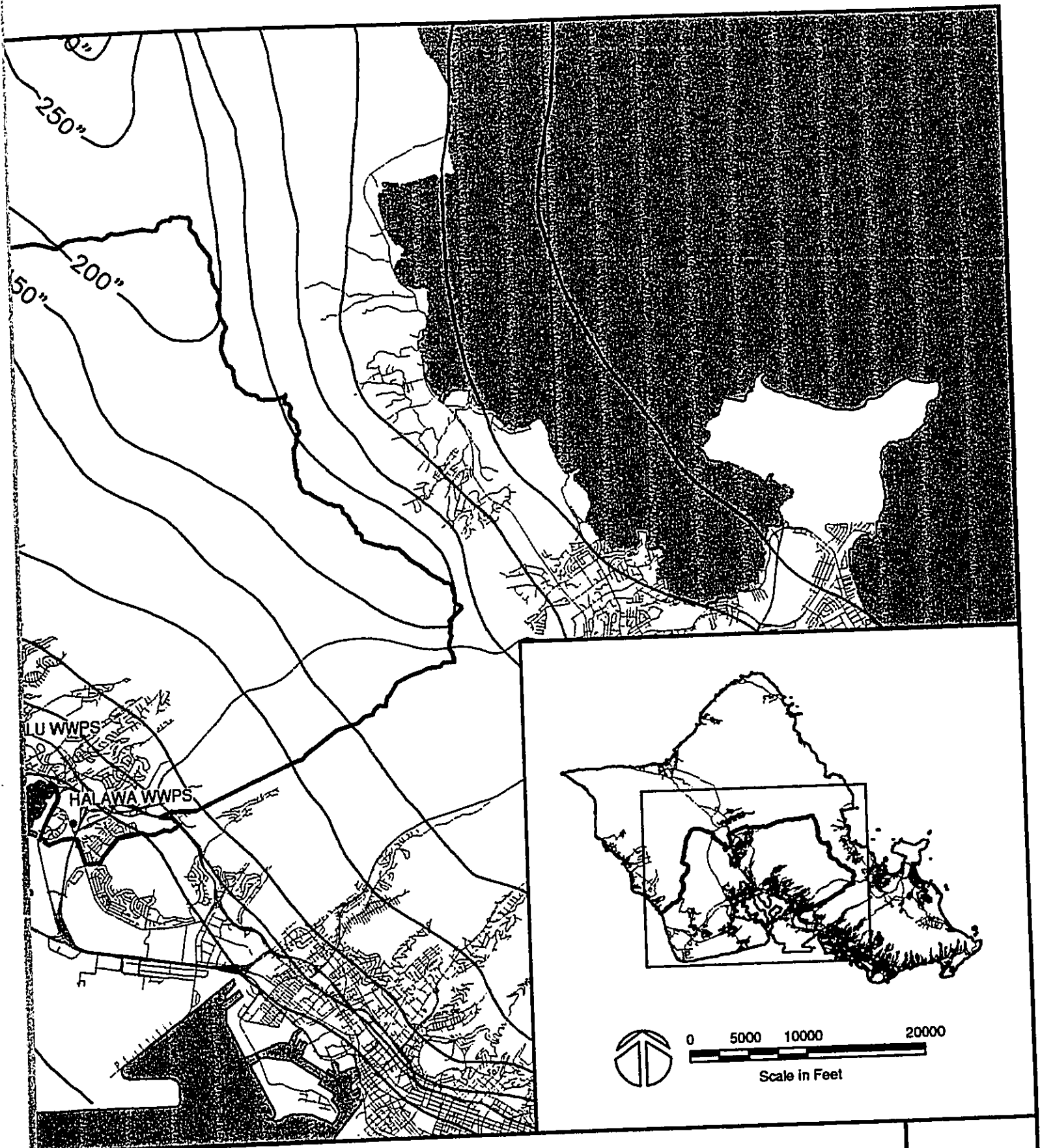
The coastal plain extends southward from the lower reaches of the Schofield Plateau and from the base of the Koolau and Waianae Ranges to the shoreline. The portion of the coastal plain within the Study Area includes the Ewa Plain and the area around Pearl Harbor. The coastal plain is composed chiefly of marine sediments deposited on Koolau lavas when the sea stood higher in the mid-Pleistocene era. The Ewa Plain west of Pearl Harbor is the most extensive feature. Urbanized areas on the Ewa Plain include Ewa Town, Kapolei, Ewa Beach, Iroquois Point, Kalaeloa Community Development District (formerly NASBP), Campbell Industrial Park and West Beach.



WEST MAMALA BAY FACILITIES PLAN
MEAN ANNUAL RAINFALL

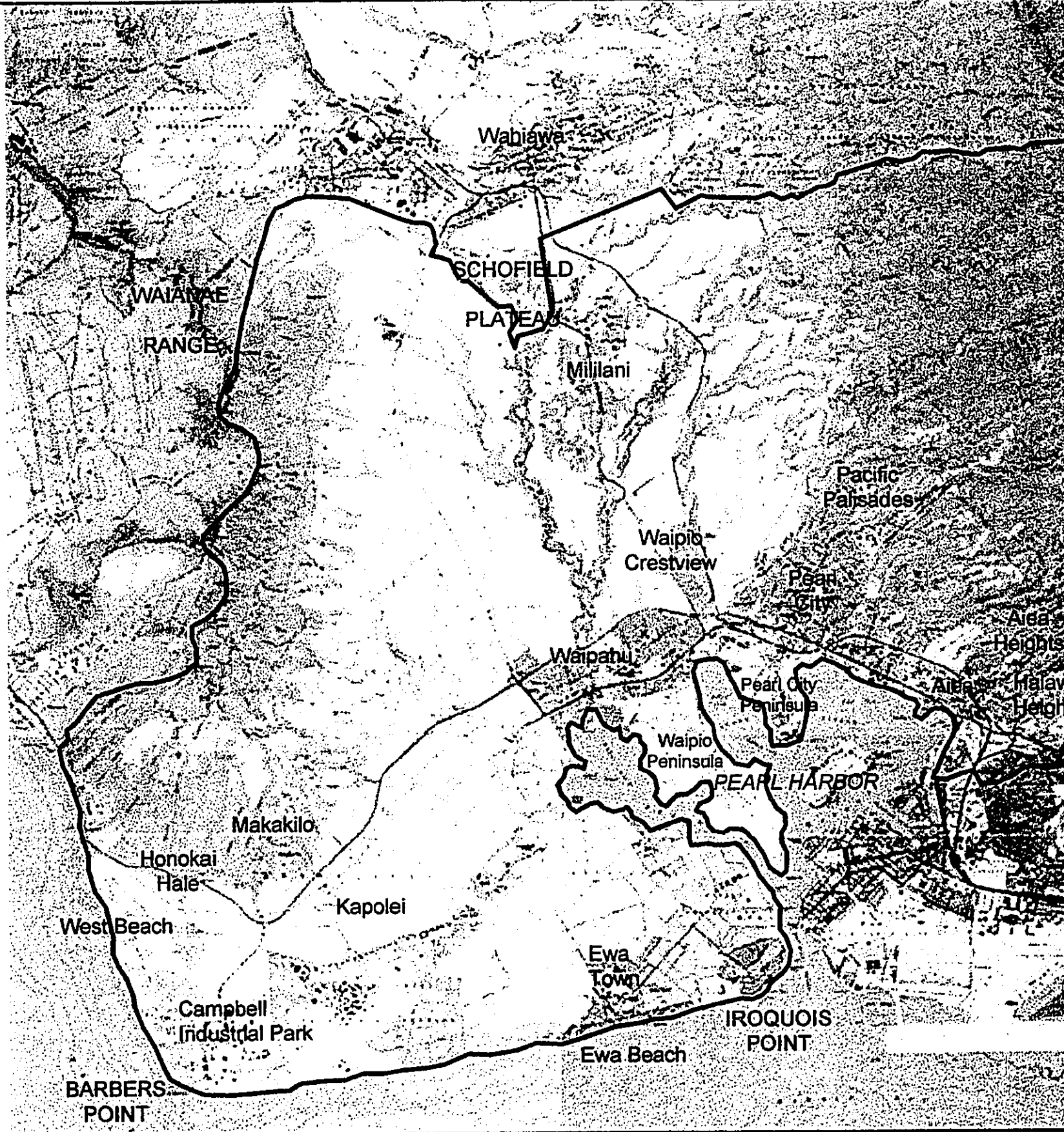


WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS



FACILITIES PLAN
 ANNUAL RAINFALL

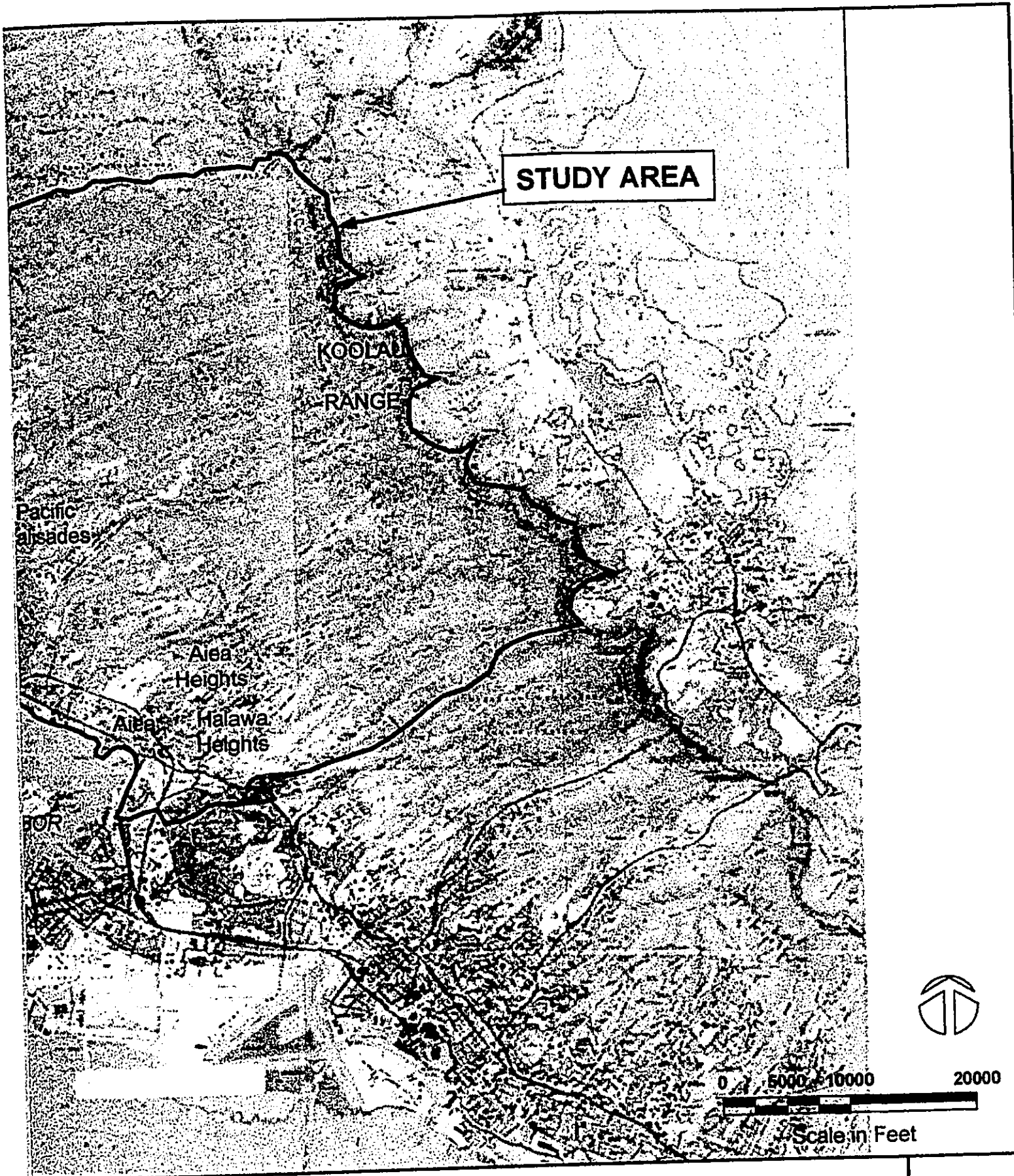
FIGURE
 4-1



**WILSON OKAMOTO
& ASSOCIATES, INC.**
ENGINEERS - PLANNERS

WEST MAMALA BAY FACILITIES PLAN

LOCATION MAP



BAY FACILITIES PLAN

LOCATION MAP

FIGURE

4-2

The Study Area includes the southern and most of the eastern flank of the Waianae Range. The Honokai Hale subdivision is located on alluvium at the southern base of the Range and the Makakilo development extends up a south-facing ridge comprised of eroded lava.

A portion of the southeastern slope of the Koolau Range lies within the Study Area, and includes urbanized areas of Halawa Heights, mauka portions of Aiea, Aiea Heights, mauka portions of Pearl City, and Pacific Palisades. Lower elevations, including valley floors and the bases of ridges, are comprised of alluvium while ridges are eroded lavas. (*Geology of the State of Hawaii, Second Edition, Harold T. Stearns, 1985 and Volcanoes in the Sea, The Geology of Hawaii, Gordon Macdonald, Agatin Abbott, and Frank Peterson, 1977*).

Topography: The topography of the Study Area varies from the relatively flat coastal plain to the gentle slopes of the Schofield Plateau to steep walls of deeply cut valleys in the Waianae and Koolau Ranges. The highest elevation in the Study Area, at 3,098 feet above mean sea level (msl) is Palikea along the ridgeline of the Waianae Range. The ridgeline of the Koolau Range within the Study Area peaks at 2,826 feet above the upper reaches of North Halawa Stream.

These extreme elevations, however, are distant from urbanized areas. The highest urban areas include Makakilo, which extends beyond 1,000-foot above msl on a ridge of the Waianae Range, while Pacific Palisades extends to just below 800 feet on the Koolau Range. Mililani extends up to the 720-foot elevation.

Urbanized areas at lower elevations include makai portions of Aiea, Pearl City and Waipahu which lie at 40 feet or less above msl. Developments in Ewa are at the 40- to 50-foot elevation while Kapolei is slightly higher at the 50- to 60-foot elevation. Much of Ewa Beach is located at the 10-foot elevation or less.

Direct Impacts and Mitigation Measures: No significant impacts on the geology or topography of the affected project sites are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Construction of the proposed and alternative wastewater facility improvements will involve grading, excavation and trenching of mostly developed areas within the affected project sites. All trenches and excavations for underground facilities will be restored to existing grade. The geological character of the affected project sites will not be altered.

Indirect Impacts: No indirect impacts to geology and topography are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: No cumulative impacts to geology and topography are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

4.2.2 Soils

4.2.2.1 Soil Associations

The U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) has identified the following five soil associations within the Study Area:

Helemano-Wahiawa association - The predominant soil association within the Schofield Plateau, this association consists of well-drained, moderately fine-textured and fine-textured soils on uplands. Formed in material weathered from basalt, these soils are nearly level to moderately sloping and occur in broad areas dissected by very steep gulches. Helemano soils are the most prevalent, making up about 40 percent of the association. The well-drained Wahiawa soils comprise 30 percent of the association, with the remaining areas comprised of Kunia, Lahaina, and Molokai soils.

Lolekaa-Waikane association - Found along the base of the Koolau Range east of the Schofield Plateau, this association consists of well-drained, fine-textured and moderately fine-textured soils occurring on uplands, fans, and terraces. Nearly level to very steep, these soils are formed in old alluvium and material weathered from basic igneous rock. Lolekaa soils comprise up to 20 percent of the association and Waikane soils comprise about 20 percent. Paumalu, Kemoo, Leilehua, Alaeloa, Kaneohe, Paaloo, Pohakupu, and Manana soils make up the rest.

Rough mountainous land - Kapaa association - Found at higher elevations (1,000 feet and greater) on the leeward slopes of the Koolau Mountain Range, this association consists of very steep land broken by numerous drainageways. The soil material is very shallow, very dark grayish-brown, smeary silty clay. Rough mountainous land predominates this association in the Study Area, comprising more than 80 percent while, Rock land and Rock outcrop make up the rest.

Tropohumults-Dystrandeps association - This soil association encompasses the mountainous areas and lower slopes of the Waianae Range. The soils are gently sloping to very steep, well-drained, and fine-textured to moderately fine-textured. About 55 percent of the association is made up of Tropohumults and Dystrandeps.

The remainder of the association is comprised of Mahana, Kolekole, Halawa, Helemano, and Alakai soils, and areas of Rock land, Rock outcrop, and Stony land.

Lualualei-Fill land-Ewa association - Found on the Ewa Coastal and Pearl Harbor Plains, this association consists of deep, nearly level to moderately sloping, well-drained soils that have a fine-textured or moderately fine-textured subsoil or underlying material; and areas of fill land. The soils are formed in alluvium and are nearly level to moderately sloping. Fill land consists of many kinds of fill material. Lualualei soils make up about 20 percent of the association, Fill land about 20 percent, and Ewa soils about 15 percent. Honouliuli, Jaucas, Kawaihapai, Makalapa, Mamala, and Pulehu soils make up the rest.

4.2.2.2 Agricultural Lands of Importance to the State of Hawaii

Within the Study Area are several areas designated as Agricultural Lands of Importance to the State of Hawaii (ALISH). According to the USDA-NRCS, and the University of Hawaii College of Tropical Agriculture, the following three agricultural land designations are found in the region:

Prime Agricultural Land is land which has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed according to modern farming methods. The majority of these lands are located throughout the Ewa Plain, Waipio, and Mililani area.

Unique Agricultural Land is land that was the special combination of soil quality, location, growing season, moisture supply, and is used to produce sustained high quality and/or high yields of a specific crop when treated and managed according to modern farming methods. Pockets of these agricultural lands are found in pockets along Middle and East Loch. These lands can also be found in the upper reaches of Waipio.

Other important Agricultural Land is land other than Prime or Unique Agricultural Land that is also of Statewide or local importance for agricultural use. These lands can be found on the Ewa Plain, Waipio Peninsula, and the upper reaches of Waiau and Waimalu.

Direct Impacts and Mitigation Measures: No significant impacts on soils are anticipated with the construction and operation of the proposed and alternative wastewater facility improvements.

Ground-disturbing activities associated with construction of the proposed and alternative wastewater facility improvements will potentially result in increased storm runoff and soil erosion where impervious surface area is increased at the existing Honouliuli WWTP. Construction activities related to the rehabilitation/replacement and installation of new sewer lines, as well as excavation associated with construction of flow equalization basins, will potentially result in the exposure of relatively large volumes of soil.

Excavation and grading activities associated with construction of the proposed improvements will be regulated by the City and County of Honolulu's grading ordinance and the National Pollutant Discharge Elimination System (NPDES) permit requirements administered by the State DOH, as may be required. The grading ordinance includes provisions related to reducing and minimizing the discharge of pollutants associated with soil-disturbing activities including grading, grubbing and stockpiling. A NPDES General Permit for Storm Water Associated with Construction Activity will be required to control storm water discharges should the area of soil disturbance from activities such as clearing and grubbing, grading and stockpiling be in excess of five acres. The permit requires compliance with a Best Management Practices (BMP) plan which, in turn, requires compliance with City ordinances pertaining to grading, grubbing, stockpiling, soil erosion and sedimentation. The BMP plan typically includes appropriate structural or non-structural mitigative methods such as containment berms and filtration/detention ponds that would control the discharge of storm water runoff resulting from construction activities. Other erosion and sediment control mitigative measures may include appropriately stockpiling materials on-site to prevent runoff, covering or stabilizing topsoil stockpiles, use of sediment basins and sediment traps, and establishing revegetation or landscaping as early as possible on completed areas.

For dewatering that may be required during excavation and construction of the proposed improvements below the water table, a NPDES General Permit for Construction Activity Dewatering would be required for discharging dewatered effluent into City drainage systems and waters of the United States. The permit will require BMP, erosion control and water quality monitoring plans.

Phased construction of the proposed and alternative wastewater facility improvements encompassing a larger area, such as the rehabilitation/replacement and installation of new sewer lines along lengthy corridors, will minimize the amount of soils exposed at a given time, thereby reducing the potential for increased soil erosion.

Subsurface construction associated with the proposed and alternative wastewater facility improvements will remove most of the existing soils near the surface of the affected areas. It will be the responsibility of the construction contractor(s) to dispose of any excess soils removed during construction of the facility improvements. Depending on its quality and availability, the excess soils could be used as fill at other projects or locations or disposed of in a landfill.

Following construction, exposed soils will be built over, paved over, or re-vegetated to control erosion.

Construction of the proposed and alternative wastewater facility improvements will have no significant impact on important agricultural lands.

Indirect Impacts and Mitigation Measures: During construction of the proposed and alternative wastewater facility improvements, storm runoff has the potential to carry increased amounts of sediment into nearby streams and drainage systems, potentially impacting the water quality of the streams. Such impacts will be mitigated by adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation, stockpiling, and dewatering (see aforementioned as well as Section 4.3.2).

The proposed and alternative wastewater facility improvements will have beneficial long-term water quality impacts on surface waters in the Study Area. The provision of flow equalization basins and collection system improvements to reduce infiltration and inflow will reduce the probability of spills and bypasses to streams and drainage systems during periods of heavy rainfall.

Cumulative Impacts and Mitigation Measures: During construction of the proposed and alternative wastewater facility improvements, storm runoff has the potential to carry increased amounts of sediment into the storm drain system and streams due to erosion from exposed soils. This runoff could potentially impact the water quality of nearshore coastal waters in the area. Such impacts will be mitigated by controlling sedimentation in surface flows and by adherence to State and City water quality regulations governing grading, excavation, stockpiling, and dewatering (see aforementioned as well as Section 4.3.2).

4.2.2.3 Soil Contamination

The former Pearl City WWTP is located on the northwestern side of the Pearl City Peninsula. The abandoned plant is bordered by the U.S. Navy's former Pearl City Peninsula Landfill to the north and the Navy's former Pearl City Peninsula Burn Area to the east. According to the *Site Summary Report Pearl City Peninsula Geographic Study Area (August 2000)* prepared by the Pacific Division Naval Facilities Engineering Command, these two sites are under the Navy's Installation Restoration (IR) Program. The sites have been identified as "Category 5" property, which are "facilities where hazardous substances have been released, disposed of, or migrated; response actions are underway, but not completed." These sites are recommended for closure and awaiting a "no further action" determination.

Direct Impacts and Mitigation Measures: No significant impacts are anticipated with the construction and operation of the Flow Equalization Within System Alternative for the Pearl City WWPS Storage Facility at the former Pearl City WWTP. If this alternative is pursued, the Navy will be consulted regarding the status of their response actions on the neighboring properties prior to construction. If any hazardous materials from neighboring Navy properties have contaminated soils at the former Pearl City WWTP as a result of migration, appropriate mitigation by the Navy will be pursued.

Indirect Impacts and Mitigation Measures: No significant impacts are anticipated with the construction and operation of the Flow Equalization Within System Alternative for the Pearl City WWPS Storage Facility at the former Pearl City WWTP. If this alternative is pursued, the Navy will be consulted regarding the status of their response actions on the neighboring properties prior to construction. If any hazardous materials from neighboring Navy properties have contaminated soils at the former Pearl City WWTP as a result of migration, appropriate mitigation by the Navy will be pursued.

Cumulative Impacts and Mitigation Measures: No significant impacts are anticipated with the construction and operation of the Flow Equalization Within System Alternative for the Pearl City WWPS Storage Facility at the former Pearl City WWTP. If this alternative is pursued, the Navy will be consulted regarding the status of their response actions on the neighboring properties prior to construction. If any hazardous materials from neighboring Navy properties have contaminated soils at the former Pearl City WWTP as a result of migration, appropriate mitigation by the Navy will be pursued.

4.3 Hydrology

4.3.1 Groundwater

The Study Area overlies the Pearl Harbor Aquifer Sector and a portion of the Wahiawa Aquifer System; the major aquifer in the Central Aquifer Sector. Encompassed are several types of groundwater resources, the most predominant of which is basal water formed where fresh groundwater floats on denser seawater within subsurface rock, creating a "basal fresh water lens." In the Pearl Harbor Aquifer, this type of groundwater occurs beneath the lower slopes of the Waianae Range and the leeward slope of the Koolau Range. Two of the four Aquifer Systems within the Pearl Harbor Sector, Waimalu and Waipahu-Waiawa, can be considered as one large system because the great basal lens of central and southern Oahu extends in unbroken continuity beneath them. The Ewa-Kunia System is separated from the Waipahu-Waiawa System by the unconformity between the underlying Waianae and the overlying Koolau volcanoes.

In the Ewa-Kunia and Waipahu-Waiawa Systems, a second groundwater type occurs in coastal areas where basal water is confined by "caprock" which is a relatively impermeable sediment sequence. This caprock barrier tends to restrict the seaward flow of freshwater, causing the thickness of the fresh water lens to be greater than if the barrier were not there. Caprock water is derived from local rainfall, return irrigation water and leakage of basal water bodies. The most extensive caprock source on Oahu occurs on the Ewa Plain.

The third type of groundwater is impounded behind impermeable dikes in mountains and is referred to as "dike water" or "high-level water." Dikes are formed when molten magma intrudes and solidifies in conduits within a volcano's rift zone. Typically, these dikes are nearly vertical slabs of dense, massive rock, generally a few feet thick and extending for considerable distances across old lava fields. Within the Wahiawa Aquifer System, high-level water is found beneath Central Oahu and in the Waianae Mountain Range. The resource is continuous from the wet Koolau to the drier Waianae mountains. Leakage from the high level aquifer helps sustain the large basal lenses in the Pearl Harbor Sector and the smaller ones in the North Sector (*Water Resources Protection Plan, Volume 1, George A. L. Yuen & Associates, Inc., 1992, and Oahu Groundwater Sectors and Aquifer Systems Map, Commission on Water Resource Management, 1990*).

Direct Impacts and Mitigation Measures: No significant impacts to groundwater underlying the proposed and alternative wastewater facility improvements are anticipated during construction.

Construction activities are not likely to introduce to, nor release from the soil any materials which could adversely affect groundwater, including groundwater sources for domestic use. Dewatering of excavated areas may be required where wastewater and transmission facilities will lie below the water table. As discussed in Section 4.3.2, a NPDES permit for dewatering activities will be required in conjunction with construction of the proposed facility improvements. The NPDES permit will also address the anticipated rate of dewatering.

Potential impacts to groundwater due to leakage or accidental breakage in the transmission system will be mitigated by proper design, construction and operation facilities. Standard procedures for detecting leaks and breaks and for shutting down and repairing the lines will minimize impacts.

The proposed and alternative wastewater facility improvements should have a beneficial impact on groundwater. The provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses that could impact underlying groundwater. Moreover, the proposed

connection of two unsewered areas to the collection system will eliminate cesspool discharges into groundwater.

Indirect Impacts: No indirect impacts on groundwater are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: The proposed and alternative wastewater facility improvements will have beneficial, cumulative impacts on groundwater. The proposed implementation of flow equalization facilities and collection system improvements will help to reduce cumulative impacts on groundwater from regional point and non-point source pollution.

4.3.2 Surface Water

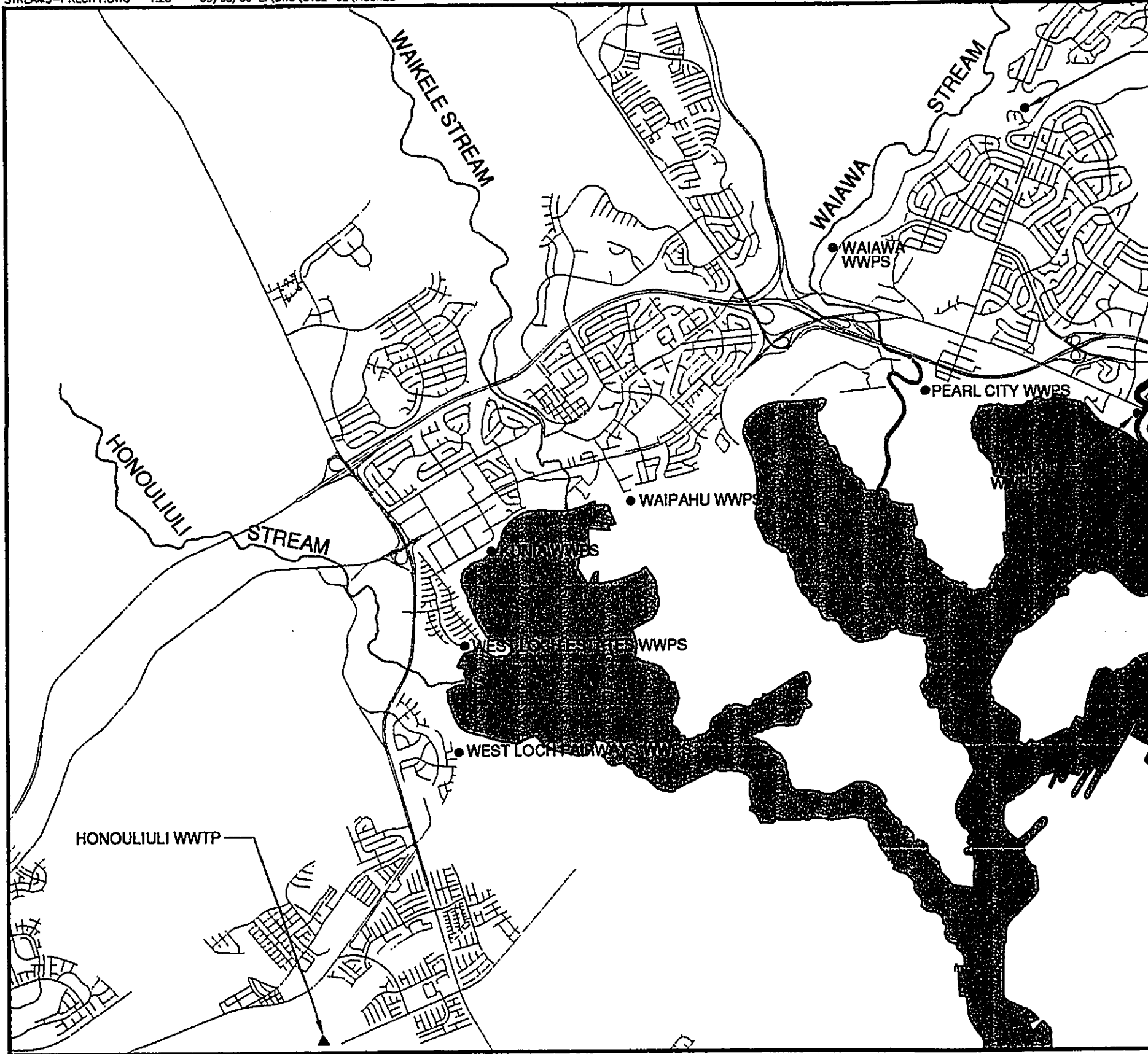
Comprising the leeward sloping portion of the saddle between the Koolau and Waianae Mountain Ranges, the Study Area includes seven perennial streams, all of which drain into Pearl Harbor. The perennial streams found within the Study Area include Halawa Stream, Aiea Stream, Kalauao Stream and Waimalu Stream, which enter the East Loch of Pearl Harbor; Waiawa Stream, which enters Middle Loch; and, Waikele and Honouliuli Streams, which enter West Loch (see Figure 4-3).

Halawa Stream is the most significant of the seven perennial streams found in the Study Area. Halawa Stream is rated as a "candidate stream for protection" by the *Hawaii Stream Assessment* due to outstanding cultural value.

The Waikele Drainage basin is the second largest drainage basin on Oahu, encompassing an area of approximately 48 square miles. Other drainage basins within the Study Area are Waiawa, Waimalu, Kalauao, Aiea, and Halawa.

Direct Impacts and Mitigation Measures: No significant impacts to streams or drainage systems in the vicinity of the proposed and alternative wastewater facility improvements are anticipated during construction. Potential impacts to the quality of surface waters in streams and drainage systems during construction of facility improvements will be mitigated by adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation, stockpiling, and dewatering. Following construction, exposed soils will either be paved over or re-vegetated to control erosion.

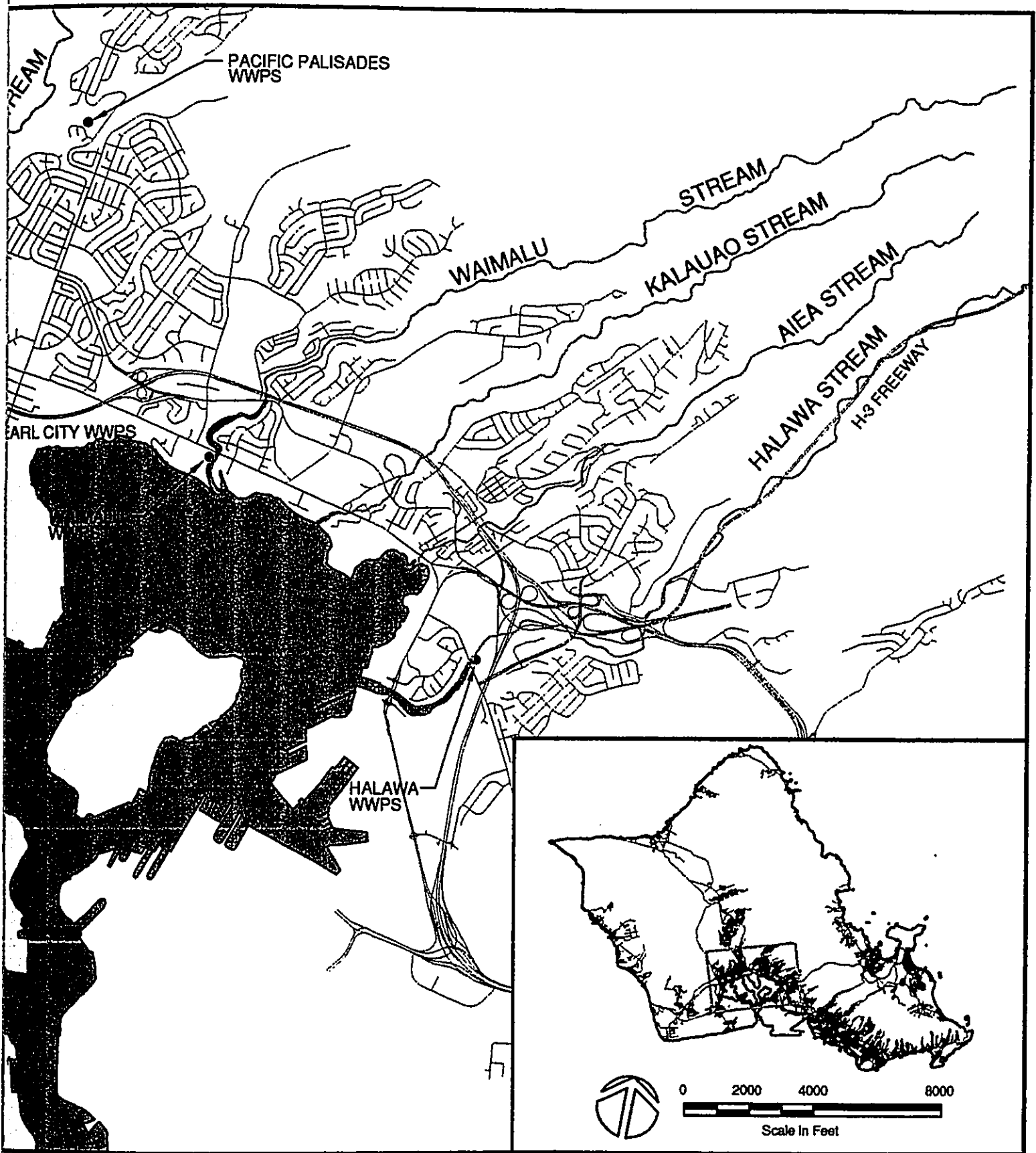
During construction of the proposed and alternative wastewater facility improvements, storm runoff has the potential to carry increased amounts of sediment into nearby streams and drainage systems, potentially impacting the water quality of the streams. Such impacts will be mitigated by adherence to



WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS

WEST MAMALA BAY FACILITIES PLAN

LOCATION OF WASTEWATER PUMP STA
AND MAJOR STREAMS



FACILITIES PLAN

WATER PUMP STATIONS
STREAMS

FIGURE
4-3

State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation, stockpiling, and dewatering (see Section 4.2.2).

Dewatering of excavated areas may be required where wastewater and transmission facilities will lie below the water table. Discharging dewatering effluent into the City's drainage systems and waters of the United States has the potential for increasing sediment loads in surface waters. A NPDES Permit for Discharges Associated with Construction Activity Dewatering will be required for discharging dewatering effluent into the City drainage systems and waters of the United States. In conjunction with the NPDES Permit, a dewatering plan is required to address the anticipated rate of dewatering and method of treatment and disposal.

The NPDES permit for dewatering activities will include BMP, erosion control and water quality monitoring plans, as may be required. A BMP plan establishes procedures for operating the dewatering system, including appropriate or applicable structural or non-structural methods that will be established and implemented to reduce and control discharge or effluent resulting from dewatering activities. Typically, specific procedures are provided for the maintenance of dewatering equipment, including disposal of sediments collected in settling containers; monitoring water quality of samples collected from designated points in the dewatering system; preventing storm runoff and erosion from surrounding areas from entering the excavated area; and, procedures for modifying or terminating dewatering activities if the system is failing to operate as intended. Water quality impacts, associated with the disposal of dewatering effluent are also addressed, including appropriate characterization of any potential pollutants such as sediments and nutrients in the effluent.

If it is determined that dewatering effluent will be discharged into a municipal drainage system, a permit from DPP will also be required. The municipal storm drains in the planning region discharge into area streams and canals and ultimately into West Mamala Bay.

Phased construction of the proposed and alternative wastewater facility improvements encompassing a larger area, such as the rehabilitation/replacement and installation of new sewer lines along lengthy corridors, will minimize the amount of soils exposed at a given time, thereby reducing the amount of storm runoff into nearby streams and drainage systems.

The proposed and alternative wastewater facility improvements will have beneficial long-term water quality impacts on surface waters on the Study

Area. The provision of flow equalization facilities to reduce peak flows and collection system improvements will reduce the probability of spills and bypasses to surface waters during periods of heavy rainfall, thereby improving the level of water quality.

Any potential for wastewater spills at the affected wastewater facilities impacting streams and drainage systems in the Study Area in the event of flow diversion or flooding will be mitigated by designing the proposed facilities with adequate capacities and flood protection. The provision of flow equalization facilities and collection system improvements will reduce the probability of spills and bypasses that have in the past entered surface waters, including Waimano Stream near the Pacific Palisades WWPS and Waiawa Stream near the Pearl City WWPS.

Indirect Impacts and Mitigation Measures: During construction of the proposed and alternative wastewater facility improvements, storm runoff may carry increased amounts of sediment into nearby streams and drainage systems, potentially impacting the water quality of the coastal waters. Potential impacts to the quality of surface waters will be mitigated by adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation, stockpiling, and dewatering (see Section 4.2.2).

The proposed and alternative wastewater facility improvements will have beneficial long-term water quality impacts on surface waters. The provision of flow equalization facilities and collection system improvements will reduce the probability of spills and bypasses, that in the past, have affected the quality of surface waters during periods of heavy rainfall.

Cumulative Impacts and Mitigation Measures: During construction of the proposed and alternative wastewater facility improvements, storm runoff has the potential to carry increased amounts of sediment into nearby surface and coastal receiving waters, potentially impacting the water quality. Potential water quality impacts to surface waters during construction will be mitigated by controlling sedimentation in surface waters by adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation, stockpiling, and dewatering (see Section 4.2.2). This will reduce the cumulative impacts on surface and coastal waters resulting from regional non-point source pollution.

The proposed and alternative wastewater facility improvements will reduce the probability of spills and bypasses to the surface and coastal waters. This will help to reduce the cumulative impacts on water quality resulting from regional non-point source pollution.

4.3.3 Coastal Waters

Coastal waters of the Study Area, which extend from Ko Olina along the southwest coast, around the Kalaheo Community Development District including West Mamala Bay to the entrance of Pearl Harbor, are classified as "A" marine waters. Class A marine waters are recognized by the State DOH with the objective that "their use for recreational purposes and aesthetic enjoyment be protected." This classification allows other uses that are compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. The objectives do not allow discharges that have not received the best degree of treatment or control compatible with the criteria established for this class Title 11, Section 54-03 (HAR).

Direct Impacts and Mitigation Measures: No significant impacts on coastal waters in the Study Area are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

During construction of the proposed and alternative wastewater facility improvements, storm runoff has the potential to carry increased amounts of sediment into storm drain systems and streams due to erosion of exposed soils. This runoff could potentially impact the water quality of nearshore coastal waters in the area. Potential water quality impacts to nearshore coastal water during construction of the proposed and alternative wastewater facility improvements will be mitigated by adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation and stockpiling (see Section 4.2.2 and 4.3.2).

For dewatering that may be required during excavation and construction of the proposed improvements, a NPDES General Permit for Construction Activity Dewatering would be required for discharging dewatered effluent into City drainage systems and waters of the United States. The permit will require BMP, erosion control and water quality monitoring plans.

Phased construction of the proposed and alternative wastewater facility improvements encompassing a larger area, such as the rehabilitation/replacement and installation of new sewer lines along lengthy corridors, will minimize the amount of soils exposed at a given time, thereby reducing the potential for increased soil erosion.

Potential water quality impacts to coastal receiving waters during construction of the proposed and alternative wastewater facility improvements will be mitigated by controlling sedimentation in surface flows as described in Section 4.2.2 and 4.3.2.

The proposed and alternative wastewater facility improvements will have beneficial water quality impacts on coastal receiving waters. The provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses to streams and coastal waters during storms. Flows that would otherwise potentially be overflows would receive at least primary treatment at the Honouliuli WWTP prior to disposal through the Barbers Point Deep Ocean Outfall. Moreover, at least 13 mgd of flows received at the plant would be treated to the secondary level and reused. The proposed connection of two unsewered areas to the collection system will reduce the probability of spills and overflows from failing individual wastewater systems and possibly improve coastal water quality by eliminating potential non-point sources of nutrients in coastal waters.

Indirect Impacts: No indirect impacts on coastal waters are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts and Mitigation Measures: During construction of the proposed and alternative wastewater facility improvements, storm runoff has the potential to carry increased amounts of sediment into nearshore coastal waters, potentially impacting water quality. Adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation, stockpiling, and dewatering during construction activities will control sedimentation in surface flows (see Section 4.2.2 and 4.3.2). This will reduce the cumulative impacts on coastal waters resulting from non-point source pollution.

Regardless of implementing the proposed and alternative wastewater facility improvements, the volume of wastewater received at the Honouliuli WWTP is projected to increase as a result of population growth in the service area. With the proposed collection system and treatment plant improvements, flows received and treated during storms would also increase. Although wastewater flows received at the plant are projected to increase, implementation of secondary treatment for 13 mgd of this flow will reduce the overall level of the various regulated wastewater constituents discharged into the ocean through the Barbers Point Deep Ocean Outfall. Moreover, planned reuse of reclaimed water would reduce this level even further. The resulting improvement in coastal water quality would beneficially impact aquatic ecosystems in the vicinity of the outfall.

4.3.4 Flood/Tsunami Hazard

Generally, areas prone to flooding in the Study Area are located along the coastline or adjacent to streams. Since WWPSs are located in low lying areas to collect and

elevate flows through forcemains, they can be exposed to flooding. The following four WWPSs are located near the coastline or streams:

- The Ewa WWPS, which is located approximately 600 feet mauka of the shoreline, lies within Zone A (see Figure 4-4). This designation indicates special flood hazard areas inundated by a 100-year flood where no base elevations have been determined (Community Panel Number 150001 0135 C);
- Located approximately 1,100 feet north of Honouliuli Stream, West Loch Estates WWPS lies within the Zone X designation (see Figure 4-5). The Zone X designation identifies areas determined to be outside the 500-year flood plain (Community Panel Number 150001 0110 D);
- The Pearl City WWPS, which is located adjacent to the Waiawa Stream, lies within Zone A. This designation indicates special flood hazard areas inundated by a 100-year flood where no base flood elevations have been determined (see Figure 4-6) (Community Panel Number 150001 0110 D); and
- The Waiawa WWPS, located adjacent to the Waiawa Stream, is situated partially within Zone A, and within the Zone X designation (see Figure 4-7) (Community Panel Number 150001 0080 A).

West Beach No.1 and Ewa WWPSs are located within the State Tsunami Evacuation Zone.

Direct Impacts and Mitigation Measures: The Pearl City WWPS is proposed to be relocated out of the Zone A designation into Zone X, where it would not be exposed to flooding. Development of the proposed and alternative wastewater facility improvements within respective flood hazard districts will comply with regulations set forth in Section 21-9.10 Flood Hazard Districts of the City and County of Honolulu's Land Use Ordinance (LUO). The regulations were enacted pursuant to the U.S. National Flood Disaster Protection Act of 1973 (Public Law 93-234), as amended. If required, the studies will be conducted to ensure that any proposed encroachment of facilities in the floodway will not result in any increase in the regulatory flood elevations during occurrence of the regulatory flood. The studies will identify a certified flood elevation and evaluate flooding impacts, including the potential impact of proposed structures on flood elevations.

LEGEND

Zone A: Special flood hazard areas inundated by 100-year flood.
No base flood elevations determined.

Zone AE: Special flood hazard areas inundated by 100-year flood.
Base flood elevations determined.

Zone D: Areas in which flood hazards are undetermined.



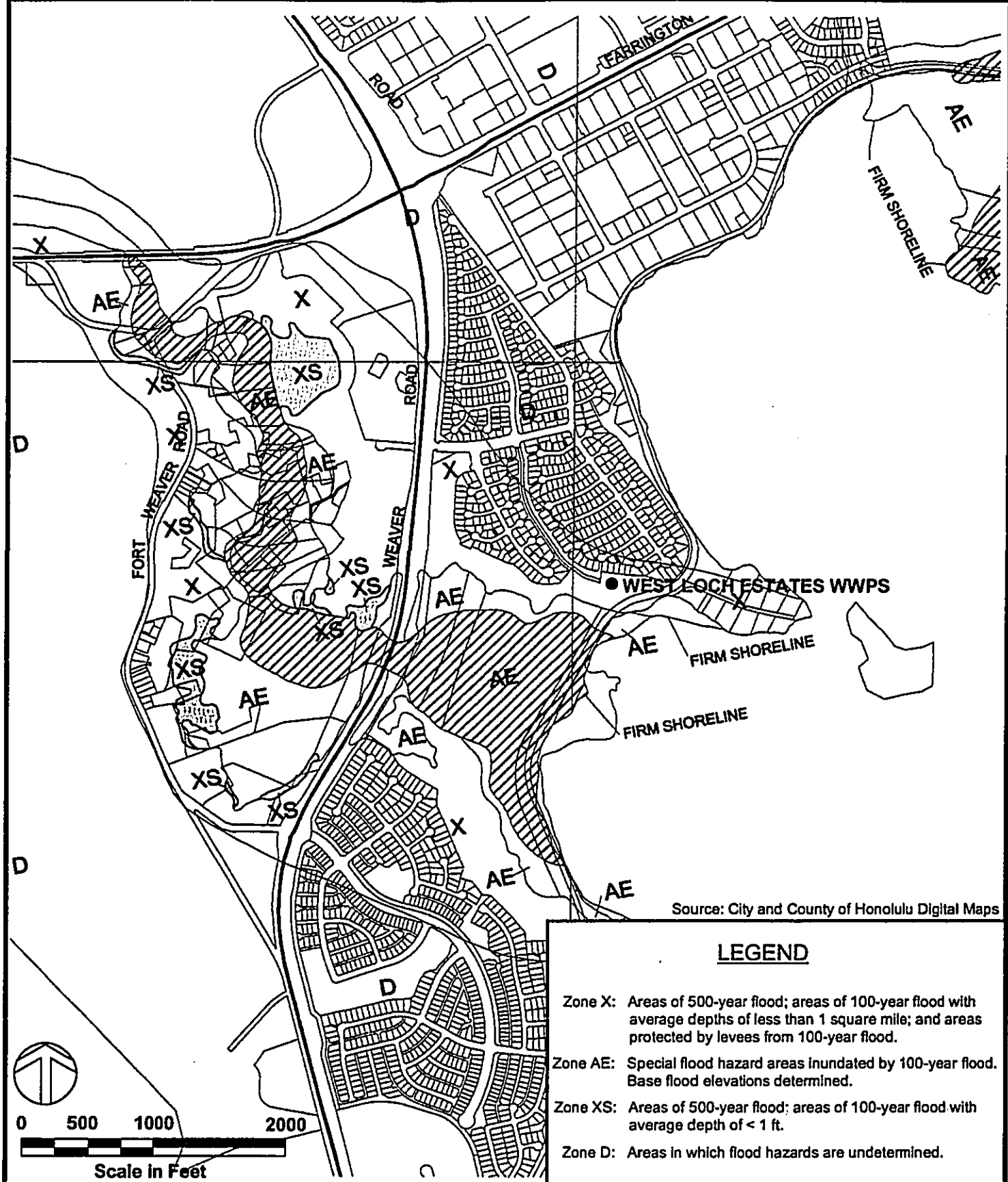
Source: City and County of Honolulu Digital Maps



WEST MAMALA BAY FACILITIES PLAN

EWA WWPS FLOOD MAP

**FIGURE
4-4**



Source: City and County of Honolulu Digital Maps

LEGEND

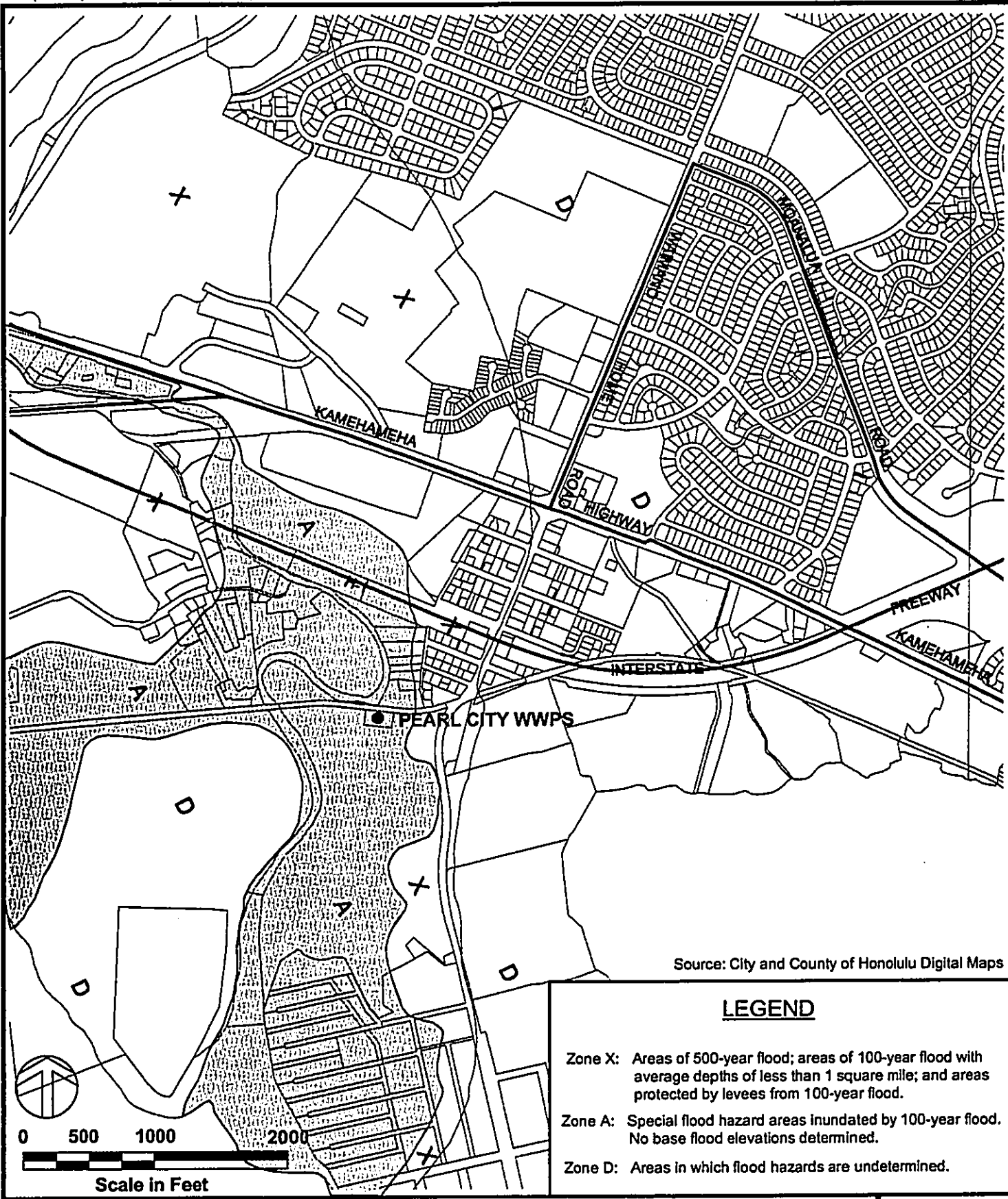
- Zone X: Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 square mile; and areas protected by levees from 100-year flood.
- Zone AE: Special flood hazard areas inundated by 100-year flood. Base flood elevations determined.
- Zone XS: Areas of 500-year flood: areas of 100-year flood with average depth of < 1 ft.
- Zone D: Areas in which flood hazards are undetermined.

**WILSON OKAMOTO
& ASSOCIATES, INC.**
ENGINEERS • PLANNERS

WEST MAMALA BAY FACILITIES PLAN

**WEST LOCH ESTATES WWPS
FLOOD MAP**

FIGURE
4-5



Source: City and County of Honolulu Digital Maps

LEGEND

- Zone X: Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 square mile; and areas protected by levees from 100-year flood.
- Zone A: Special flood hazard areas inundated by 100-year flood. No base flood elevations determined.
- Zone D: Areas in which flood hazards are undetermined.


**WILSON OKAMOTO
& ASSOCIATES, INC.**
ENGINEERS - PLANNERS

WEST MAMALA BAY FACILITIES PLAN

**PEARL CITY WWPS
FLOOD MAP**

**FIGURE
4-6**



LEGEND

- Zone X: Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 square mile; and areas protected by levees from 100-year flood.
- Zone A: Special flood hazard areas inundated by 100-year flood. No base flood elevations determined.
- Zone D: Areas in which flood hazards are undetermined.


**WILSON OKAMOTO
& ASSOCIATES, INC.**
ENGINEERS - PLANNERS

WEST MAMALA BAY FACILITIES PLAN

**WAIAWA WWPS
FLOOD MAP**

**FIGURE
4-7**

Any potential for operational disruptions or wastewater spills from proposed and alternative wastewater facility improvements in the event of flooding will be mitigated by designing the facilities with adequate capacities and flood protection. For example, specific measures for WWPSs may include protective facility design, placing sensitive instruments and control panels above anticipated flood elevations, and use of submersible pumps.

For facility improvements located within the tsunami evacuation zone, any potential for disruptions or spills in the event of a tsunami will be mitigated by designing these improvements in accordance with the City and County of Honolulu's Uniform Building Code (UBC), Subsection (f) Coastal Floodwater Design.

Indirect Impacts: No indirect impacts associated with flood/tsunami hazards are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: No cumulative impacts associated with flood/tsunami hazards are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

4.3.5 Earthquake/Seismic Hazards

Most earthquakes that occur near Oahu are not strong and cause little or no damage. The most recent occurred in 1978 off the North Shore coastline, causing little or no damage. Generally, the risk of earthquake hazard to Oahu is moderate.

Direct Impacts and Mitigation Measures: No significant impacts associated with earthquake/seismic hazards are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements as such hazards on Oahu are minimal. All proposed structures will be designed to meet Zone 2A and applicable UBC requirements.

Indirect Impacts: No indirect impacts associated with earthquake/seismic hazards are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: No cumulative impacts associated with earthquake/seismic hazards are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

4.4 Natural Environment

4.4.1 Flora

The botanical characterization of the Study Area is generally that of developed urbanized areas flanked by forest reserves. Developed areas are often landscaped with plants typically found in urban areas. Natural vegetation found in the undeveloped lower elevations include kiawe, koa haole, finger grass, and pili grass. At higher elevations are scrub forest vegetation such as guava, koa haole, lantana, Spanish clover and Bermuda grass. (*Atlas of Hawaii, Second Edition, Department of Geology, University of Hawaii, 1983*).

Direct Impacts and Mitigation Measures: As the affected project sites do not provide unique habitat, no significant impacts on flora species are anticipated from the construction and operation of the proposed and alternative wastewater facility improvements. No candidate, proposed or listed, threatened or endangered species will be disturbed.

As the majority of the proposed rehabilitation/replacement and sewer line installation projects will occur within existing street right-of-ways which are mostly paved, little or no vegetation will be impacted. Following trenching for sewerline improvements in unpaved areas, natural roadside vegetation will be allowed to regrow.

Indirect Impacts: No indirect impacts on flora are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: No cumulative impacts on flora are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

4.4.2 Fauna

Characteristic of developed urbanized areas and surrounding forest reserves, feral mammals found in the Study Area include mongoose, mice, rats, wild pigs, dogs, and cats.

The Study Area provides a habitat for a multitude of native and introduced bird species. Lower elevations provide natural habitat and feeding areas for many introduced exotic birds such as cardinals, doves, mynas, ricebirds, sparrows, and white-eyes. The migratory golden plover, a common winter resident, can be found foraging in lawns and golf courses in urbanized areas.

Wetland areas (described in Section 4.4.3) may provide a habitat for four species of endangered endemic waterfowl. These species include the Hawaiian stilt or ae`o (*Himantopus mexicanus knudsenii*), Hawaiian coot or alae ke`oke`o (*Fulica americana alai*), Hawaiian gallinule or alae `ula (*Gallinula chloropus sandvicensis*), and the Hawaiian duck or koloa maoli (*Anas wyvilliana*). In addition, the blackcrowned night heron or auku`u (*Nycticorax nycticorax hoactli*), and a variety of seasonal migratory waterfowl, and introduced urban and forest birds are prevalent in wetland areas. (*Atlas of Hawaii, Second Edition, Department of Geology, University of Hawaii, 1983*).

Direct Impacts and Mitigation Measures: No adverse impacts to threatened or endangered faunal species or their habitats are anticipated from the construction and operation of the proposed and alternative wastewater facility improvements (see Section 4.4.3 regarding impacts on Wetlands). The existing, proposed and alternative wastewater facility project sites are located in highly disturbed areas which were previously or are currently encumbered by facilities. Unencumbered areas such as Blaisdell Park or open areas adjacent to WWPSs are maintained as open lawns and landscaped with introduced vegetation. Construction and operation of the proposed and alternative wastewater facility improvements will not adversely affect any candidate, proposed, or listed threatened or endangered faunal species or their habitat.

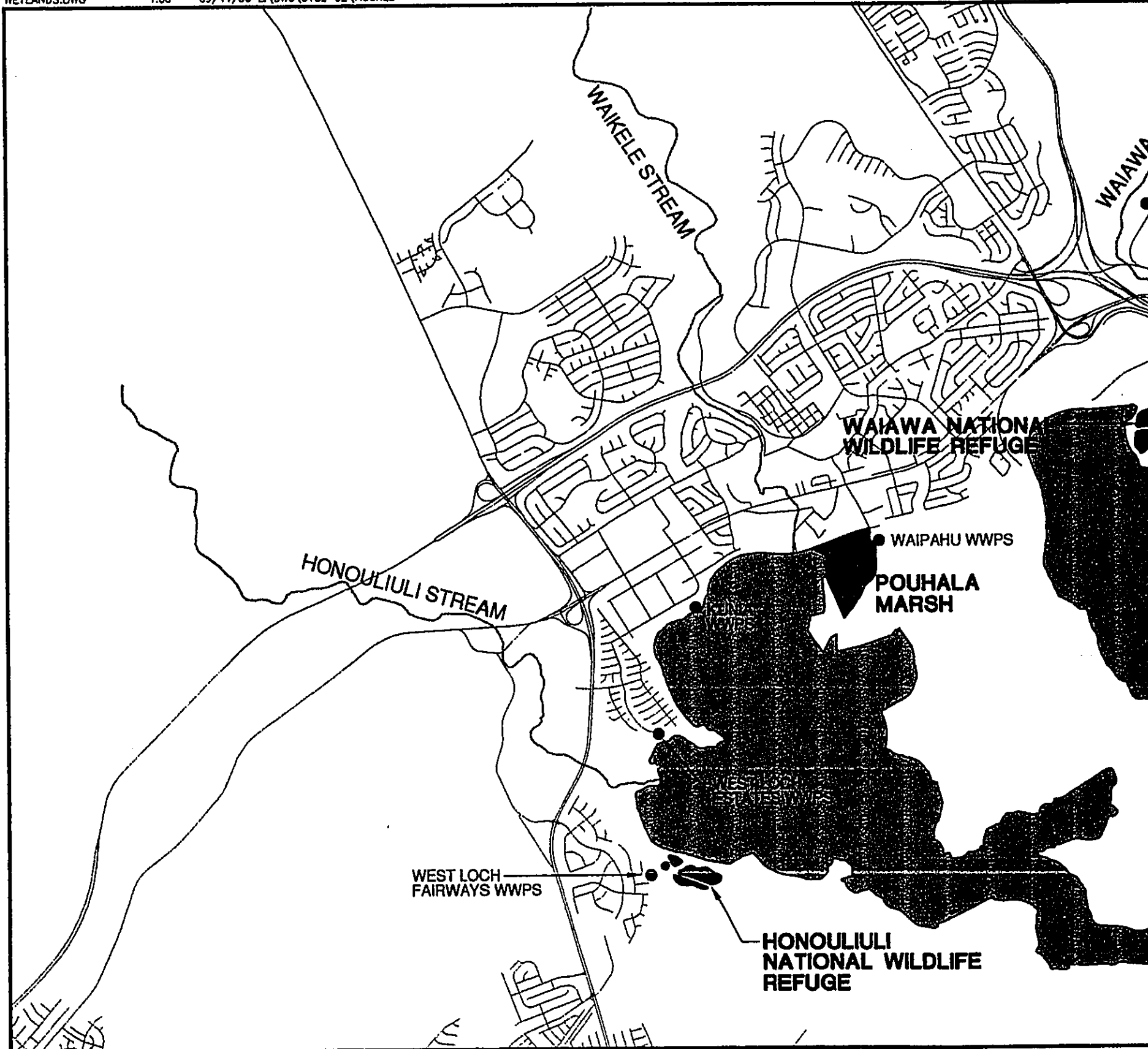
As the majority of the proposed rehabilitation/replacement and sewer line installation projects will occur within existing street right-of-ways which are mostly paved, there will be no impact on faunal species habitat.

Indirect Impacts: No indirect adverse impacts to threatened or endangered faunal species or their habitats are anticipated from the construction and operation of the proposed and alternative wastewater facility improvements (see Section 4.4.3 regarding impacts on Wetlands).

Cumulative Impacts: No cumulative adverse impacts to threatened or endangered faunal species or their habitats are anticipated from the construction and operation of the proposed and alternative wastewater facility improvements (see Section 4.4.3 regarding impacts on Wetlands).

4.4.3 Wetlands

Much of Pearl Harbor's coastline consists of various ponds, marshes, mudflats, and settling basins. The most extensive wetlands are found on the perimeter of West and Middle Lochs, including Pearl Harbor National Wildlife Refuge (NWR) and Pouhala Marsh (see Figure 4-8). These areas provide important habitat for the Hawaiian Stilt, Hawaiian Coot, Hawaiian Gallinule, Hawaiian Duck, migratory shorebirds and waterfowl.

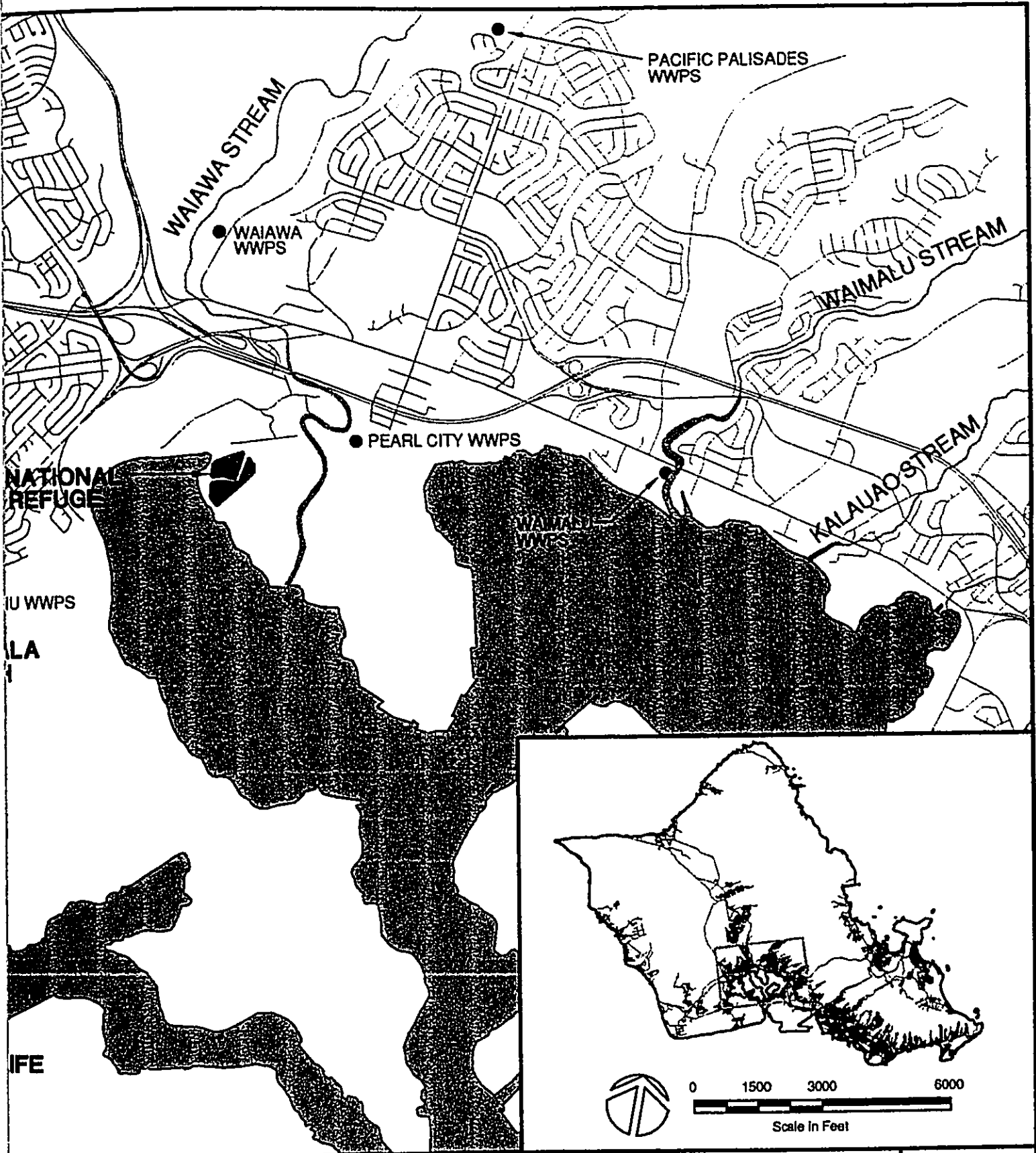


WEST MAMALA BAY FACILITIES PLAN

WETLANDS MAP



**WILSON OKAMOTO
& ASSOCIATES, INC.**
ENGINEERS • PLANNERS



FACILITIES PLAN

DS MAP

FIGURE
4-8

Pearl Harbor NWR is comprised of two units of man-made wetlands: the 37-acre Honouliuli Unit which borders West Loch; and the 25-acre Waiawa Unit which borders Middle Loch of Pearl Harbor. Honouliuli, also a fresh water wetland is extensively managed for a variety of waterbirds, including Hawaii's endangered waterbirds and migratory waterfowl. The area is characterized by mangroves, pickleweed and mudflats. Waiawa is composed of two ponds which is primarily managed for the Hawaiian Stilt. The Pearl Harbor NWR was established for the endangered Hawaiian moorhen, Hawaiian coot, and the Hawaiian stilt although Koloa (Hawaiian duck) and black-crowned night herons also inhabit the area.

Pouhala Marsh encompasses 70 acres adjacent to the sanitary landfill near Pearl Harbor's West Loch. It is comprised of a remnant fishpond and coastal marsh. The Hawaiian Stilt, Hawaiian Moorhen and Hawaiian Duck have been observed at the marsh. The majority of this marsh consists of pickleweed and bulrush marsh.

Direct Impacts and Mitigation Measures: No significant impacts on wetlands within the Study Area are anticipated during construction or operation of the proposed and alternative wastewater facility improvements. Only the Pearl City WWPS equalization facility alternative would be in the vicinity of the Waiawa unit of the Pearl Harbor NWR. The proposed site is at the former Pearl City WWTP, approximately one-third of a mile south of the refuge. The U.S. Fish and Wildlife Service and State Department of Land and Natural Resources will be consulted regarding the presence of wetland resources in the Study Area. Further assessment of potential impacts on wetland areas in proximity to specific improvements will be required as these projects are designed.

Ground-disturbing activities associated with construction of the proposed and alternative wastewater facility improvements may result in increased storm runoff and soil erosion into nearby wetlands. The potential impacts of soil erosion and sedimentation into wetlands during construction activities will be mitigated by controlling sedimentation in surface flows as described in Sections 4.2.2 and 4.3.2.

In the long-term, the proposed and alternative wastewater facility improvements will have a beneficial impact to wetlands in the Study Area. The provision of flow equalization facilities to reduce peak flows and collection system improvements, will reduce the probability of spills and bypasses to wetlands during periods of heavy rainfall. Any potential for wastewater spills at the proposed facilities, which could affect wetlands will be mitigated by designing the facilities with adequate capacities and flood protection (see Section 4.3.4).

Indirect Impacts: No indirect impacts on wetlands are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts and Mitigation Measures: During construction of the proposed and alternative wastewater facility improvements, storm runoff may carry increased amounts of sediment which may impact wetlands. Adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation, stockpiling, and dewatering during construction activities will control sedimentation in surface flows (see Section 4.2.2). This will reduce the cumulative impacts on wetlands resulting from regional non-point source pollution.

The proposed and alternative facility improvements will have beneficial, cumulative long-term impacts on wetlands. The provision of flow equalization facilities and collection system improvements will reduce the probability of spills; and bypasses will help to reduce the cumulative impacts to wetlands resulting from regional non-point source pollution.

4.5 Solid Waste

Solid waste in the Study Area is collected by the City and County of Honolulu, Department of Environmental Services' Refuse Collection and Disposal Division. Refuse for high-rise buildings, military facilities, and commercial establishments are provided by licensed commercial haulers. Other agencies in the City including the Department of Transportation Services and Department of Parks and Recreation also collect trash.

Solid waste from the region is disposed of at the Honolulu Program of Waste Energy Recovery (H-POWER) facility at Campbell Industrial Park where refuse is converted to electricity.

Direct Impacts and Mitigation Measures: No significant impacts to the municipal solid waste collection and disposal system are anticipated during construction and operation of the proposed and alternative wastewater facility improvements.

Construction of the proposed and alternative wastewater facility improvements will require grading and excavation activities for the collection system lines and flow equalization basins, which may produce excess soil. It will be the responsibility of the construction contractor(s) to dispose of any excess soil removed during construction. Depending on its quality and usefulness, the excess soil would be used as fill at other projects or locations or disposed of in a landfill.

In the long-term, proposed reuse of biosolids generated at the Honouliuli WWTP will reduce landfill disposal need.

Indirect Impacts: No indirect impacts on solid wastes are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts and Mitigation Measures: No adverse cumulative impacts on the existing solid waste collection and disposal system are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements. The project improvements are proposed to accommodate the projected wastewater flows based on DPP's population projections for the Study Area. Therefore, the proposed improvements are not anticipated to induce unplanned development in the region which would otherwise potentially have a cumulative impact on the existing solid waste system.

4.6 Air Quality

Within the Study Area, air quality is principally affected by vehicular emissions generated from traffic along the major roadways. Air quality during peak travel periods is typically worse than during off-peak periods due to the increase in traffic congestion. Roadways affected by construction are indicated in Figures 3-1 to 3-3 and 3-9 to 3-12 as well as Tables 3-1 to 3-2, 3-4 to 3-6. Although historic air quality data is not consistently available along these roadways, violations of State or National Air Quality Standards along these roadways is unlikely. Such violations, particularly the State standard for carbon monoxide, may occur at major intersections in densely built areas of Honolulu during periods of extremely calm wind conditions.

Concern regarding odor generated at the Honouliuli WWTP continues to grow with the progressive urbanization of former agricultural sugar surrounding the plant. A H₂S limit of 25 ppbv or 35 micrograms per cubic meter (hourly average) at all plant property lines was stipulated in the Covered Source Permit (amended May 7, 1998) issued by the State DOH to the City for the Honouliuli WWTP. Weekly fence line monitoring has been conducted since the Permit went into effect on January 10, 1998. Since then, the limit for H₂S concentration has only been exceeded a few times for brief periods when odor control units were off-line or malfunctioning. Nevertheless, H₂S emissions can be detected as an odor at concentrations below the established limit.

In addition to H₂S, odors emanating from the Zimpro thermal conditioning unit are also a concern, although there are no specific concentration limits associated with this facility.

There are four main odor control systems for various treatment components at the Honouliuli WWTP, including a headworks system consisting of activated carbon towers, a central system consisting of a caustic scrubbing tower in series with activated carbon beds, a secondary system consisting of catalytic scrubbing towers in series with activated carbon beds, and a solids system consisting of a wet scrubber, activated carbon towers, and combustion in a boiler.

Direct Impacts and Mitigation Measures:

Construction: During construction of the proposed and alternative wastewater facility improvements, two potential types of air pollution emissions will likely occur, resulting in air quality impacts: 1) airborne dust from vehicle movement and soil excavation; and 2) carbon monoxide and nitrogen oxide emissions from on-site construction equipment and from construction worker's vehicles and equipment traveling to and from project work sites. The properties which are anticipated to be most affected by air quality impacts during construction are the residences and businesses located adjacent to and along the proposed and alternative wastewater facility improvements.

Potential air quality impacts during construction of the proposed and alternative improvements will be mitigated by complying with State DOH Administrative Rules, Title 11, Chapter 60, Air Pollution Control. The construction contractor(s) is responsible for complying with State DOH regulations which prohibit visible dust emissions at property boundaries. Compliance with State regulations will require adequate measures to control airborne dust by methods such as water spraying and sprinkling of loose or exposed soil or ground surface areas and dust-generating equipment during construction. As may be deemed appropriate, paving and/or reestablishment of vegetated areas early in the construction schedule will also help to control dust. Nevertheless, the presence of nearby residences and buildings in the vicinity of most of the affected project sites suggest that open-air areas and naturally ventilated structures could be impacted by dust in spite of compliance with these regulations. Exhaust emissions from construction vehicles are anticipated to have negligible impact on air quality in the project vicinities as the emissions would be relatively small and readily dissipated.

No significant impacts on air quality resulting from vehicular traffic associated with the operations of the proposed and alternative wastewater facility improvements are anticipated. There is anticipated to be no significant increase in traffic associated with the proposed and alternative wastewater facility improvements.

Odor: With regard to odor emanating from proposed and alternative collection system improvements, odors are anticipated to be typically minimal along sewerlines and forcemains. The potential for odor at WWPSs would be

associated with malfunctions, overflows and spillages, particularly during extended periods of rainfall. The proposed and alternative wastewater facility improvements will have a beneficial impact on odor control as the provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses during storms.

Odors associated with the alternative for developing flow equalization facilities would be insignificant for underground facilities. Such facilities would provide complete containment and include remotely controlled internal cleaning equipment. The facilities are anticipated to be required for storage a few times a year, at most, and would contain highly diluted wastewater. Stored wastewater would be discharged within 24 hours, after which the facility would be cleaned and remain idle until needed again. Venting would be provided by elevated stacks to facilitate dilution of any odors. Above ground open basins are only being considered for the equalization facilities at the former Pearl City WWTP and the Mililani PTF. Odors would be associated with their infrequent use to store highly diluted wastewater during extended periods of rainfall. The basins would be emptied within 24 hours, then cleaned. The City's I/I Plan examines the potential for odor impacts associated with storage facilities at the Mililani PTF.

Odor mitigation will be provided for all proposed improvements at the Honouliuli WWTP. A major improvement in odor control will be achieved by replacing the Zimpro thermal conditioning unit with an anaerobic digestion/dewatering/reuse solids treatment and disposal system. With regard to the existing odor concerns at the plant, The Pre-Final Facilities Plan Report preliminary recommendation for an odor control program includes the following:

- Reduction in the amount of H₂S produced in the collection system; Chemical additions should be considered for long force mains;
- Acquisition of land adjacent to the plant site as an additional buffer zone. Although it may not be feasible, a buffer zone of 1,000 to 2,000 feet would be desirable; and
- Odor analysis of the Honouliuli WWTP to identify the types and amounts of odorous material being produced, and to develop specific design and operating criteria.

Islandwide, the Odor Control Assessment Program scheduled to begin in Fiscal Year (FY) 2000 will involve the preparation of a study to address the effectiveness of all City-owned and operated existing odor control units, as

well as address odor control requirements. The study will provide a master plan to control odors from the collection system, WWPSs and WWTPs.

Indirect Impacts: No indirect impacts on air quality are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: No cumulative impacts on air quality are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

4.7 Noise

Noise in the vicinities of the proposed and alternative wastewater facility improvements is predominantly attributable to vehicular travel along the adjacent roadways.

Noise levels from the Honouliuli WWTP and WWPSs in the Study Area are primarily associated with equipment used in the collection and treatment process. The sources of noise at the treatment plant are typically motors, pumps, fans, and other equipment. Alarms are also an occasional source. All noise producing equipment are housed within structures. Blowers and compressors are equipped with intake and exhaust silencers and mufflers. The distance between the plant and adjacent residential communities has helped to minimize noise complaints.

Direct Impacts and Mitigation Measures: During construction of the proposed and alternative wastewater facility improvements, construction noise will be unavoidable during the duration of the respective project construction period. Operation of construction equipment such as backhoes, trucks, compactors, pumps, generators, pile drivers, and pavers will raise ambient noise levels in the project vicinity, impacting nearby residents, businesses, and occupants of public facilities. Noise generated by construction activity which may occur on a 24-hour basis or at night to avoid traffic disruption will adversely impact any nearby residences and businesses located adjacent to and along the proposed and alternative wastewater facility improvements. In this case, a noise variance would need to be obtained. The variance allows construction to be performed during "off-peak" hours.

Construction noise impacts will be partially mitigated somewhat by compliance with the provisions of the State DOH Administrative Rules, Title 11, Chapter 46, "Community Noise Control". These rules require a noise permit or noise variance (depending on the construction periods) if the noise levels from construction activities are expected to exceed the allowable levels set forth in the Chapter 46 rules. It is the contractor's responsibility to minimize noise by properly maintaining noise mufflers and other noise-

attenuating equipment, and to maintain noise levels within allowable regulatory limits. Also, the guidelines for the hours of heavy equipment operation and noise curfew times as set forth by the State DOH noise control regulations must be adhered to. The properties which are anticipated to experience the highest noise levels during construction are those residences and businesses located adjacent to and along the proposed and alternative wastewater facility improvements.

No significant impacts on noise resulting from vehicular traffic associated with the operations of the proposed and alternative wastewater facility improvements are anticipated. No significant increase in traffic associated with the proposed and alternative wastewater facility improvements is anticipated.

Construction associated with the rehabilitation/replacement and installation of new sewer lines along lengthy corridors will likely occur in separate work zones. Therefore, the specific location where construction activity will be occurring will change such that the actual length of exposure to construction noise from any particular receptor location will likely be less than the total construction time for the particular project.

Noise mitigation at the Honouliuli WWTP and the various WWPSs will be achieved through measures required for compliance with State DOH standards for stationary noise sources.

Indirect Impacts: No indirect noise impacts are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: No cumulative noise impacts are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

4.8 Traffic

The construction and operation of the West Interceptor will extend from Kalaeloa Boulevard to Fort Barrette Road (see Figure 3-1).

Improvements to the East Interceptor in the Upgrade Improvements Alternative include construction of the Waimalu Sewer Relief Tunnel, which is aligned with Interstate H-1 from Halawa to the relocated Pearl City WWPS at Lehua Avenue. Other roadways may be affected as indicated in Figures 3-2 and 3-3 and Tables 3-1 and 3-2.

Construction of the storage facilities along the East Interceptor and at the Mililani PTF under the Flow Equalization Alternative will have minimal impact on traffic because the improvements are within existing facilities and away from roadway areas (see Figure 3-3 and Tables 3-2 and 3-4 to 3-6).

In addition to the proposed and alternative wastewater facility improvements along the West and East Interceptor Systems, other collection system improvements for major lines are along roadways that may be affected (see Figures 3-10 to 3-14 and Tables 3-4 to 3-6).

Direct Impacts and Mitigation Measures: During construction, traffic along the respective corridors proposed for rehabilitation/replacement or installation of new sewer lines will be disrupted for the period of the construction activity. Residents and businesses in the immediate work area may be inconvenienced by restriction to driveway access and street frontage usage. It may be necessary for the contractor to use portions of the public right-of-way for the temporary staging of construction vehicles and equipment and parking. The potential closure of traffic lanes and temporary restriction or elimination of on-street parking during construction activities may cause inconveniences to motorists as well as residents and businesses in the affected vicinity. The temporary shortage of stalls could increase competition for street parking in the vicinity and affect businesses in the immediate area during construction. Temporary traffic congestion that could result from the movement of construction-related vehicles may inconvenience motorists in the vicinity. The proposed rehabilitation/replacement or installation of sewerlines may also require the temporary closure of sidewalks along the affected street right-of-ways for pedestrian safety. Designated bikeways within the affected corridors may also be temporarily disrupted, requiring cyclists to use an alternate route during construction. Emerging "trenchless" technologies such as microtunneling (use of subsurface boring machine for pipe installation) may also be used to minimize disruption to residences and businesses.

As specific improvements are designed, consultation with the City Department of Transportation Services and the State Department of Transportation, Highways Division, as appropriate, will be initiated regarding temporary impacts on traffic during construction. As necessary, traffic impacts will be assessed in detail and mitigation measures developed for implementation by the construction contractor during construction.

Construction-related traffic impacts at the WWTP, WWPSs, and flow equalization facilities will largely be confined to the respective adjacent streets. Effects on local traffic should be primarily limited to the slight increase in construction vehicles accessing the respective sites during

construction. This increase of construction vehicles on adjacent roadways is not expected to adversely affect traffic as it is anticipated to be negligible.

As appropriate, construction contractors will be required to mitigate potential vehicular and pedestrian traffic impacts through appropriate traffic control measures and safety devices. Examples of measures that may be employed include:

- Publishing newspaper notices to alert the public of construction projects;
- Apprising of the affected residents, businesses and Neighborhood Boards of the project(s) and its traffic impacts prior to commencement of construction;
- Coordinating temporary closure of access to private driveways prior to construction;
- Consulting with affected businesses to address construction phase traffic-related concerns;
- Providing emergency access and full access during non-working hours for residential and business driveways;
- Providing advance signage and other warnings to alert approaching motorists and pedestrians to construction activities ahead;
- Providing barriers, cones, signage, lighting, non-skid covering over trenches, adequate and safe sidewalk widths, adequate intersection visibility, and other provisions to promote safe passage of vehicles and pedestrians through the construction zone;
- Restricting transport of construction vehicles during the peak traffic hours. To the extent possible, require construction vehicles to use available main routes/roads as alternate routes to the project site rather than local streets, to minimize the projects impact on area residents;
- Providing flaggers and/or police officers, when necessary, to control the traffic and pedestrian flow;
- Notifying providers of emergency services (fire, ambulance and police, including Police Districts 2 (Wahiawa), 3 (Pearl City) and 8 (Kapolei)) prior to implementation of any required detours or street closures;

- Notifying the City Department of Transportation Services to allow the City to alert Oahu Transit Services of the construction activity, as well as State DOT (if the affected roadway is under State jurisdiction);
- Maintaining fire apparatus access throughout the project sites for the duration of construction of the proposed and alternative wastewater facility improvements. Notifying the Fire Communication Center of any interruption in the existing fire hydrant system during construction of the proposed project; and
- Provisioning appropriate barriers as necessary to deter the public from unauthorized entry into restricted or hazardous construction zones during working and non-working hours.

No significant impacts on vehicular traffic associated with the operation of the proposed and alternative wastewater facility improvements are anticipated.

Indirect Impacts: No indirect traffic impacts are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: No cumulative traffic impacts are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements. The project improvements are proposed to accommodate the projected wastewater flows based on DPP's population projections for the region. Therefore, the proposed improvements are not anticipated to induce increased development in the region which would otherwise potentially have a cumulative impact on traffic.

4.9 Infrastructure and Utilities

4.9.1 Water System

Located within the WWTP, WWPS sites and along the transmission pipeline corridors are a number of existing City and County of Honolulu's Board of Water Supply (BWS) waterlines.

Direct Impacts and Mitigation Measures: No significant impacts are anticipated on the existing water system as a result of the construction and operation of the proposed and alternative wastewater facility improvements. During design and construction of improvements that may affect the existing water system facilities, close coordination will be maintained with BWS to ensure that the water system will not be adversely impacted and to minimize potential service interruption to adjacent areas.

Operation of the proposed and alternative wastewater facility improvements will result in a slight increase in water consumption demand. No upgrading of the potable water distribution system is anticipated.

Construction and operation of the proposed and alternative wastewater facility improvements are anticipated to have no impact on BWS's deep water wells and tunnels in the planning region.

Indirect Impacts: No indirect impacts on the existing water system are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: No cumulative impacts on the existing water system are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements. The project improvements are proposed to accommodate the projected wastewater flows based on DPP's population projections for the region. Therefore, the proposed improvements are not anticipated to induce unplanned development in the region which would otherwise potentially have a cumulative impact on the existing water system.

4.9.2 Drainage System

Drainage in the Study Area follows a basic mauka (mountain) to makai (sea) flow. Water is channeled through streams that flow from the valleys in the Koolau and Waianae Ranges to the ocean. Other factors that affect drainage patterns include area topography and natural and manmade barriers to waterflow. Surface water runoff is collected in various catchbasins and transported by the storm drainage system. Most storm mains empty into area streams or canals. All of the streams and canals in the Study Area empty into Pearl Harbor (East, Middle, and West Lochs).

Located within the WWTP and WWPS sites and along the transmission pipeline corridors are a number of existing City drainage lines.

Direct Impacts and Mitigation Measures: No significant impacts are anticipated on the existing drainage system as a result of the construction and operation of the proposed and alternative wastewater facility improvements. During design and construction of improvements that may affect the existing drainage system, close coordination will be maintained with DPP to ensure that the drainage system will not be adversely impacted.

No significant impacts to streams or drainage systems in the vicinity of the proposed and alternative wastewater facility improvements are anticipated during construction. Storm runoff has the potential to carry increased

amounts of sediment into nearby streams and drainage systems, potentially impacting the water quality of the streams. Potential impacts to the quality of surface waters in streams and drainage systems during construction of facility improvements will be mitigated by adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation, stockpiling, and dewatering. Following construction, exposed soils will either be paved over or re-vegetated to control erosion (see Sections 4.2.2 and 4.3.2).

Dewatering of excavated areas may be required where wastewater and transmission facilities will lie below the water table. Discharging dewatering effluent into the City's drainage systems and waters of the United States has the potential for increasing sediment loads in surface waters. A NPDES Permit for Discharges Associated with Construction Activity Dewatering will be required for discharging dewatering effluent into the City drainage systems and waters of the United States. In conjunction with the NPDES Permit, a dewatering plan is required to address the anticipated rate of dewatering and method of treatment and disposal.

The NPDES permit for dewatering activities will include BMP, erosion control and water quality monitoring plans, as may be required. A BMP plan establishes procedures for operating the dewatering system, including appropriate or applicable structural or non-structural methods that will be established and implemented to reduce and control discharge or effluent resulting from dewatering activities. Typically, specific procedures are provided for the maintenance of dewatering equipment, including disposal of sediments collected in settling containers; monitoring water quality of samples collected from designated points in the dewatering system; preventing storm runoff and erosion from surrounding areas from entering the excavated area; and, procedures for modifying or terminating dewatering activities if the system fails to operate as intended. Water quality impacts, associated with the disposal of dewatering effluent are also addressed, including appropriate characterization of any potential pollutants such as sediments and nutrients in the effluent.

If it is determined that dewatering effluent will be discharged into a municipal drainage system, a permit from DPP will also be required. The municipal storm drains in the planning region discharge into area streams and canals and ultimately into Pearl Harbor.

Phased construction of the proposed and alternative wastewater facility improvements encompassing a larger area, such as the rehabilitation/replacement and installation of new sewer lines along lengthy corridors, will minimize the amount of soils exposed at a given time, thereby

reducing the amount of storm runoff into nearby streams and drainage systems.

The proposed and alternative wastewater facility improvements will have beneficial long-term water quality impacts on surface waters on the Study Area. The provision of flow equalization facilities to reduce peak flows and collection system improvements will reduce the probability of spills and bypasses to surface waters during periods of heavy rainfall, thereby improving water quality.

Any potential for wastewater spills at the affected wastewater facilities impacting streams and drainage systems in the Study Area in the event of flow diversion or flooding will be mitigated by designing the proposed facilities with adequate capacities and flood protection (see Sections 4.3.2 and 4.3.4). The provision of flow equalization facilities and collection system improvements will reduce the probability of spills and bypasses that have in the past entered surface waters, including Waimano Stream near the Pacific Palisades WWPS and Waiawa Stream near the Pearl City WWPS.

Indirect Impacts and Mitigation Measures: During construction of the proposed and alternative wastewater facility improvements, storm runoff may carry increased amounts of sediment into nearby streams and drainage systems, potentially impacting the water quality of the coastal waters. Potential impacts to the quality of surface waters will be mitigated by adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation, stockpiling, and dewatering (see Sections 4.2.2 and 4.3.2).

The proposed and alternative wastewater facility improvements will have beneficial long-term water quality impacts on surface waters. The provision of flow equalization facilities and collection system improvements will reduce the probability of spills and bypasses, that in the past, have affected the quality of surface waters during periods of heavy rainfall.

Cumulative Impacts and Mitigation Measures: During construction of the proposed and alternative wastewater facility improvements, storm runoff has the potential to carry increased amounts of sediment into nearby surface and coastal receiving waters, potentially impacting the water quality. Potential water quality impacts to surface waters during construction will be mitigated by controlling sedimentation in surface waters by adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation, stockpiling, and dewatering (see Sections 4.2.2 and 4.3.2). This will reduce the cumulative impacts on surface and coastal waters resulting from regional non-point source pollution.

The proposed and alternative wastewater facility improvements will reduce the probability of spills and bypasses to the surface and coastal waters. This will help to reduce the cumulative impacts on the water quality resulting from regional point and non-point source pollution.

4.9.3 Electrical System

Electrical service in the Study Area is provided by Hawaiian Electric Company, Inc. (HECO) through a network of underground ductlines and aerial powerlines. There are substations located in Pearl City along Kamehameha Highway; Kapolei along Farrington Highway; and three in Campbell Industrial Park, two along Kalaeloa Boulevard and one along Hanua Street. Extending from the substations are aerial and underground transmission lines that run throughout the Study Area.

Direct Impacts and Mitigation Measures: No significant impacts are anticipated on the existing electrical system as a result of the construction and operation of the proposed and alternative wastewater facility improvements. During design and construction of the proposed improvements which may affect existing underground and aerial power lines and utility poles, close coordination will be maintained with HECO to ensure that electrical utilities will not be adversely impacted and to minimize potential service interruption to adjacent areas.

Operation of the new wastewater facilities will increase demand in energy consumption. As the proposed modifications are made to the existing wastewater facilities, however, energy consumption could be reduced. The projected energy consumption and adequacy of electrical power distribution to the affected facility improvements will be determined in consultation with HECO.

Indirect Impacts: No indirect impacts on the existing electrical system are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: No cumulative impacts on the existing electrical system are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements. The project improvements are proposed to accommodate the projected wastewater flows based on the DPP's population projections for the region. Therefore, the proposed improvements are not anticipated to induce unplanned development in the region which would otherwise potentially have a cumulative impact on the existing electrical system.

4.9.4 Communication System

Telephone service in the Study Area is provided by Verizon Hawaii (formerly GTE Hawaiian Telephone Company). Existing underground and aerial telephone lines are located throughout the Study Area, serving private, residential and commercial properties.

Cable service in the Study Area is provided by Oceanic Cable. Existing underground and aerial cable lines are located throughout the planning region, serving private, residential and commercial properties.

Direct Impacts and Mitigation Measures: No significant impacts are anticipated on the existing telephone and cable systems as a result of the construction and operation of the proposed and alternative wastewater facility improvements. During design and construction of the proposed improvements, which may potentially affect existing underground and aerial cables and utility poles, close coordination will be maintained with Verizon Hawaii and Oceanic Cable to ensure that the respective utility lines will not be adversely impacted and to minimize potential service interruption to adjacent areas. Operation of the proposed wastewater facility improvements will not require any modification to of the telephone system or cable system improvements.

Indirect Impacts: No indirect impacts on the existing telephone and cable systems are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: No cumulative impacts on the existing telephone and cable systems are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements. The project improvements are proposed to accommodate the projected wastewater flows based on DPP's population projections for the region. Therefore, the proposed improvements are not anticipated to induce increased development in the region which would otherwise potentially have a cumulative impact on the existing communication system.

4.9.5 Gas System

Gas service throughout the Study Area is provided by The Gas Company.

Direct Impacts and Mitigation Measures: No significant impacts are anticipated on the existing gas system as a result of the construction and operation of the proposed and alternative wastewater facility improvements. During design and construction of the proposed improvements which may affect existing underground gas lines, close coordination will be maintained

with The Gas Company to ensure that the gas lines will not be adversely impacted and to minimize potential service interruption to adjacent areas. Operation of the proposed and alternative wastewater facility improvements will not require gas system improvements.

Indirect Impacts: No indirect impacts on the existing gas system are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Cumulative Impacts: No cumulative impacts on the existing gas system are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements. The project improvements are proposed to accommodate the projected wastewater flows based on the DPP's population projections for the region. Therefore, the proposed improvements are not anticipated to induce unplanned development in the region which would otherwise potentially have a cumulative impact on the existing gas system.

4.10 Historic and Archaeological Sites

Historic and archaeological areas of concern in the Study Area are mainly in the vicinity of undeveloped areas such as wetlands. Table 4-1 lists the number of eligible and registered historical and archaeological sites in the study area.

Direct Impacts and Mitigation Measures: None of the preliminary recommendations involve construction activities in the immediate vicinity of an eligible or registered historical or archaeological site. Potential impacts to any archaeological, cultural or historic resources that may be encountered during construction of the proposed improvements will be mitigated by complying with Chapter 6E, Hawaii Revised Statutes, Historic Preservation. While it is unlikely that construction of the proposed and alternative wastewater facility improvements will have any impact on archaeological, cultural (including burials) or historic sites within the project sites, the State Department of Land and Natural Resources State Historical Preservation Division (DLNR SHPD) will be consulted regarding the disposition of such resources within the Study Area as specific projects are proposed for implementation.

Majority of the construction will be along or near existing roadway corridors. Construction will require excavation of the affected areas to a sufficient width and depth which may potentially encounter subsurface archaeological or historic sites, especially in previously undeveloped areas.

Table 4-1 Eligible and Registered Historical and Archaeological Sites In the Study Area				
Site Number	Site Name	Registered Status	Placed on Register	National Register Eligible
80-09-107	Keaiwa Heiau	National Hawaii	11-09-72 02-20-79	
80-09-1345	Wakamiya Inari Shrine	National Hawaii	01-08-80 08-31-79	
80-09-1375	Tsoong Nyee Society Cook House	Hawaii	11-26-86	
80-09-9777	Kipapa School Building B	Hawaii	10-31-94	
80-09-9786	Honolulu Plantation Company Aiea Sugar Mill- DEMOLISHED	National Hawaii	01-11-96 09-09-95 Removed 08-29-98	
80-09-9802	Honolulu Plantation Manager's Residence	Hawaii	07-19-97	
80-12-2722	Beach Midden Site	Hawaii	07-25-81	
80-12-2873	Oneula Archaeological District	National		9-29-86
80-12-2888	Barbers Point Harbor Archaeological District	National		6-10-77
	Boundary Revision			12-28-79
80-12-9714	Oahu Railway & Land Company Right of Way	National		12-01-75
continued				

Table 4-1 (continued) Eligible and Registered Historical and Archaeological Sites In the Study Area				
Site Number	Site Name	Registered Status	Placed on Register	National Register Eligible
80-12-9786	Ewa Plantation Villages	Hawaii		02-24-96
80-13-143	Okiokiolepe Pond	National		03-14-73
80-13-1356	U.S.S. Bowfin	National Hawaii	11-16-82 01-04-86 NHL	07-30-82
80-13-1376	Hickam Air Force Base	National	09-16-85 NHL	
80-13-1384	CINCPAC Headquarters	National	05-28-87 09-07-87 NHL	
80-13-9817	U.S.S. Missouri	National	05-14-71	
80-13-9992	Pearl Harbor Naval Base	National	01-29-64 1966 NHL	
Source: Hawaii/National Register of Historic Places, 1988 and The Hawaii Register of Historic Places, Volume II, 1974				

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

As specific plans for individual projects are developed, archaeological assessments will be prepared and mitigation measures determined in consultation with DLNR SHPD.

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

As specific plans for individual projects are developed, archaeological assessments will be prepared and mitigation measures determined in consultation with DLNR SHPD.

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

As specific plans for individual projects are developed, archaeological assessments will be prepared and mitigation measures determined in consultation with DLNR SHPD.

4.11 Socio-Economic Characteristics

The Study Area encompasses the City and County of Honolulu's entire Ewa Development (DP) Area, as well as the southern portion of the Central Oahu DP area (excluding Wahiawa), and the western edge of the Primary Urban Center DP area (from Halawa to Pearl City).

The Study Area had a 1995 residential population of 336,448 persons. This represents about 38.1 percent of the 882,509 total population on the island of Oahu. Based on projections by DPP for the year 2020, the Study Area will have a population of 509,136 a projected increase of 172,688 persons or 51 percent from 1995.

Direct Impacts and Mitigation Measures: The proposed project will have both temporary beneficial and adverse social and economic impacts in the Study Area.

In the short-term, the project will confer some positive benefits in the local area. Direct economic benefits will result from construction expenditures both through the purchase of materials from local suppliers and through the employment of local labor, thereby stimulating that sector of the economy.

Construction activities associated with the proposed project will create some adverse impacts such as temporary disruption of traffic and on-street parking, unavoidable noise impacts in the vicinity of the project sites, and air pollution emissions from soil excavation and construction vehicles and equipment. The properties which are anticipated to be most affected by construction activity impacts are those residences and businesses located adjacent to and along the proposed and alternative wastewater facility improvements. Construction contractor(s) will be required to mitigate potential vehicular and pedestrian traffic impacts through appropriate traffic control measures and safety devices. Unavoidable construction noise impacts on nearby land uses in the immediate vicinity of the proposed and alternative wastewater facility improvements will be mitigated to some degree by compliance with the provisions of the State DOH Administrative Rules, Title 11, Chapter 46, "Community Noise Control" (see Section 4.7). Potential air quality impacts during construction of the proposed project will be mitigated by compliance with the State DOH Administrative Rules, Title 11, Chapter 60, "Air Pollution Control" (see Section 4.6). The degree of impact resulting from construction activities along major roadways will be mitigated by phasing sewer line projects into zones, thereby minimizing traffic, noise, and air quality impacts

to residents and businesses at any given time. Emerging "trenchless" technologies such as microtunneling (use of subsurface boring machine for pipe installation) may also be used to minimize disruption to residences and businesses.

Indirect Impacts and Mitigation Measures: In the short-term, positive indirect economic impacts may include benefits to local retail businesses resulting from construction. Construction activities associated with the proposed project will create some adverse impacts such as minor disruptions of traffic, potentially affecting motorists, residents and businesses near the activity sites, and increased noise nuisances in the immediate vicinity of the affected project sites.

Cumulative Impacts and Mitigation Measures: The project improvements are proposed to accommodate the projected wastewater flows based on DPP's population projections for the planning region. Any cumulative impacts resulting from increased population and subsequent development would be more appropriately attributed to land use planning policies rather than the proposed project. Therefore, the proposed and alternative wastewater facility improvements are not anticipated to induce increased development in the region which would otherwise have a cumulative impact on the existing infrastructure, public services and facilities, public utilities, and traffic in the region. In the long-term, the proposed and alternative wastewater facility improvements will accommodate projected flows up to the year 2020 and will provide adequate wastewater systems to support anticipated population and economic growth in the West Mamala Bay region.

4.12 Recreational Resources

The Study Area includes numerous shoreline and inland recreational facilities. The major coastal and inland recreational facilities are shown in Table 4-2. All of the recreation facilities dispose of their wastewater through the existing collection, treatment and disposal system.

Direct Impacts and Mitigation Measures: A portion of Neal S. Blaisdell Park and the Aloha Stadium parking lot will be inaccessible during construction and will be re-landscaped and/or repaved to existing conditions following construction. No significant impacts on other recreation resources in the Study Area are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Table 4-2 Existing, Future and Proposed Recreational and Open Space Resources in the Study Area		
Recreational and Open Space Resources	Location	Acreage
Golf Courses		
Ewa Villages Golf Course	Ewa	240.00
New Ewa Beach Golf Club	Ewa Beach	150.00
Ted Makalena Golf Course	Waipahu	150.76
West Loch Golf Course	Ewa Beach	187.00
Hawaii Country Club	Kunia	135.00
Hawaii Prince Golf Club	Ewa Beach	265.00
Royal Kunia Course	Kunia	Unable to obtain.
Waikele Golf Course	Waikele	140.00
Kapolei Golf Course	Kapolei	550.00
Beach Parks		
Barbers Point Beach Park	Ewa	7.39
Ko Olina Beach Park (Future)	Kapolei	18.00
Oneula Beach Park	Ewa Beach	30.00
Ewa Beach Park	Ewa Beach	4.88
West Loch Shoreline Park	Waipahu	6.36
Regional and District Parks		
Kalaeloa Regional Park (Future)	Ewa Beach	486.00
Kapolei Regional Park	Kapolei	69.39
Ewa Mahiko District Park (Future)	Ewa	25.00
Ewa District Park (Future)	Ewa	20.00
Waipahu District Park	Waipahu	13.83
Mililani District Park	Mililani	21.23
Mililani Mauka District Park (Future)	Mililani	16.00
Pearl City District Park	Pearl City	9.95
Waiau District Park	Pearl City	31.43
Aiea District Park	Aiea	8.82
Halawa District Park	Halawa	20.17
Ewa Beach Community Park	Ewa Beach	13.25
Ewa Makahiko Community Park	Ewa Beach	6.33
Laulani Community Park (Proposed)	Ewa	15.60
Geiger Community Park	Ewa	10.00
Kapolei Community Park	Kapolei	12.00
Kamokila Community Park	Ewa Beach	5.89

continued

Table 4-2 (continued)		
Existing, Future, and Proposed Recreational and Open Space Resources in the Study Area		
Recreational and Open Space Resources	Location	Acreage
Makakilo Community Park	Ewa Beach	8.50
Hoaeae Community Park	Waipahu	10.10
Waikele Community Park	Waipio	12.84
Makaunalau Community Park	Mililani	16.09
Mililani Mauka Community Park (Proposed)	Mililani	12.00
Crestview Community Park	Waipio	8.14
Waiawa Community Park #1 (Proposed)	Waipio	20.00
Waiawa Community Park #2 (Proposed)	Waipio	10.00
Lehua Community Park	Pearl City	6.67
Pacific Palisades Community Park	Pearl City	8.42
Pearl Ridge Community Park	Aiea	9.12
Neighborhood Parks		
Puuloa Neighborhood Park	Ewa Beach	4.34
Ewa Mahiko Neighborhood Park	Ewa	6.32
Makakilo Neighborhood Park	Makakilo	4.01
Mauka Lani Neighborhood Park	Makakilo	4.40
Makakilo Heights Neighborhood Park (Future)	Makakilo	5.00
Honowai Neighborhood Park	Waipahu	6.31
Kunia Neighborhood Park	Kunia	5.53
Waipahu Uka Neighborhood Park	Waipahu	4.00
Hans L'orange Neighborhood Park	Waipahu	6.93
Kealohi Neighborhood Park	Mililani	4.02
Holaniaii Neighborhood Park	Mililani	4.00
Kamaio Neighborhood Park	Mililani	4.01
Hokuahiahi Neighborhood Park	Mililani	4.01
Melemanu Neighborhood Park	Mililani	4.04
Kipapa Neighborhood Park	Mililani	5.00
Koamaaiku Neighborhood Park	Mililani	12.38
Waikele Neighborhood Park	Waipio	5.00
Waipio Neighborhood Park	Waipio	12.30
Mililani Neighborhood Park	Mililani	5.00
Kamaio Neighborhood Park	Mililani	4.01
continued		

Recreational and Open Space Resources	Location	Acreage
Kaonohi Neighborhood Park	Aiea	4.30
Makalapa Neighborhood Park	Aiea	5.97
Mililani Waena Neighborhood Park	Mililani	7.00
Mililani Town Center Neighborhood Park	Mililani	7.79
Noholoa Neighborhood Park	Mililani	7.26
Kuahelani Neighborhood Park	Mililani	4.00
Waipio Neighborhood Park	Waipahu	12.30
Waiawa Neighborhood Park (Proposed)	Waiawa	6.00
Waiawa Neighborhood Park #2 (Proposed)	Waiawa	20.00
Pacheco Neighborhood Park	Pearl City	4.59
Waimalu Neighborhood Park	Aiea	2.14
Manana Kai Neighborhood Park	Pearl City	4.35
Manana Neighborhood Park	Pearl City	4.02
Waiau Neighborhood Park	Pearl City	4.57
Nahele Neighborhood Park	Aiea	4.00
Newtown Neighborhood Park	Aiea	8.08
Kaahale Neighborhood Park	Aiea	4.16
Waimalu Neighborhood Park	Aiea	
Kaonohi Neighborhood Park	Aiea	4.30
Napuanani Neighborhood Park	Aiea	4.43
Makalapa Neighborhood Park	Pearl City	5.97
Other		
Aloha Stadium	Halawa	104.00
Pupuole Street Mini Park	Waipahu	7.93
Waipio Peninsula Sports Complex (Proposed)	Pearl City	130.00
Waipahu Cultural Garden Park	Waipahu	48.88
Ieie Mini Park	Aiea	0.11
Neal S. Blaisdell Park	Aiea	25.89
Waiau Gardens Mini Park	Pearl City	2.35
Pacific Palisades Entrance Park (Urban Park)	Pearl City	3.91
Source: City and County of Honolulu GIS Maps, 1997; and City and County Index of Oahu Parks and Facilities, 1997.		

During construction of the proposed and alternative wastewater facility improvements, storm runoff may carry increased amounts of sediment into the storm drain system and streams due to erosion from exposed soils, potentially impacting the water quality of coastal recreational waters in the area. Potential water quality impacts during construction of the proposed facility improvements will be mitigated by adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation and stockpiling (see Section 4.2.2).

Dewatering that may be required during excavation and construction of the proposed improvements, a NPDES General Permit for Construction Activity Dewatering will be required for discharging dewatered effluent into City drainage systems and waters of the United States. The permit will require a BMP, erosion control plan and water quality monitoring plan (see Section 4.2.2).

Phased construction of the proposed and alternative wastewater facility improvements encompassing a larger area, such as the rehabilitation/replacement and installation of new sewer lines along lengthy corridors, will minimize the amount of soils exposed at a given time, thereby reducing the amount of storm runoff into recreational coastal waters.

The proposed and alternative wastewater facility improvements will have beneficial long-term water quality impacts on recreational coastal waters. The provision of flow equalization facilities and collection system improvements will reduce the probability of spills and bypasses to the coastal waters during rainstorms.

Presently available public access to shorelines and beaches will be maintained to the extent possible, in consideration of public safety, during the construction of the proposed alternative wastewater facility improvements. In the long term, public access to shorelines will not be restricted as a result of operating the proposed and alternative wastewater facility improvements.

Indirect Impacts: No indirect impacts on recreational resources are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements. Potential impacts to recreational coastal waters due to leakage or accidental breakage in the transmission system will be mitigated by proper design, construction and operation of facilities. Standard procedures for detecting leaks and breaks and for shutting down and repairing the lines will mitigate risks of public contact with the wastewater.

Any potential for wastewater spills at the affected wastewater facilities which may impact coastal recreational waters in the event of flow diversion or flooding system will be mitigated by proper design, construction and operation of facilities (see Sections 4.3.3 and 4.3.4). Standard procedures for detecting leaks and breaks and for shutting down and repairing the lines will minimize impacts. Appropriate measures will be mitigated by designing the proposed facilities with adequate capacities and flood protection (see Section 4.3.4).

No indirect impacts on public access to shorelines and beaches are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

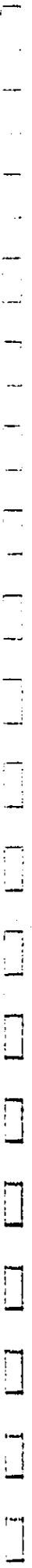
Cumulative Impacts and Mitigation Measures: No cumulative impacts on recreational resources are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements. During construction of the proposed and alternative wastewater facility improvements, storm runoff may carry increased amounts of sediment into recreational coastal waters, potentially impacting water quality. Adherence to State of Hawaii and City and County of Honolulu water quality regulations governing grading, excavation, stockpiling, and dewatering during construction activities will control sedimentation in surface flows (see Sections 4.2.2 and 4.3.2). This will reduce the cumulative impacts on recreational coastal waters resulting from non-point source pollution.

The proposed and alternative wastewater facility improvements will have beneficial, cumulative water quality impacts on recreational coastal waters. The provision of flow equalization facilities and collection system improvements to reduce infiltration and inflow will reduce the probability of spills and bypasses to the coastal waters during rain storms. The proposed and alternative wastewater facility improvements will reduce the probability of spills and overflows from failing individual wastewater systems to recreational coastal waters and further contribute to the beneficial impact on water quality. The reduction of spills and bypasses to recreational coastal waters will help to reduce the cumulative impacts on the water quality resulting from regional non-point source pollution.

No cumulative impacts on public access to shorelines and beaches are anticipated as a result of the construction and operation of the proposed and alternative wastewater facility improvements.

Chapter 5

Relationship to Plans, Policies and Controls



5. RELATIONSHIP TO PLANS, POLICIES AND CONTROLS

This section discusses the State of Hawaii and City and County of Honolulu plans, policies and controls that affect the proposed project.

5.1 Hawaii State Plan

The Hawaii State Plan, embodied in Chapter 226, Hawaii Revised Statutes (HRS), serves as a guide for goals, objectives, policies, and priorities for the State. The State Plan provides a basis for determining priorities, allocating limited resources, and improving coordination of State and County plans, policies, programs, projects, and regulatory activities. The proposed project is consistent with the following State Plan objectives, policies and priority guidelines:

Section 226-11 Objectives and policies for the physical environment - land based, shoreline, and marine resources.

- (a) (1) *Prudent use of Hawaii's land-based, shoreline, and marine resources.*
- (a) (2) *Effective protection of Hawaii's unique and fragile environmental resources.*
- (b) (2) *Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.*
- (b) (3) *Take into account the physical attributes of areas when planning and designing activities and facilities.*
- (b) (8) *Pursue compatible relationships among activities, facilities, and natural resources.*

Comment:

The proposed and alternative wastewater facility improvements will have beneficial water quality impacts. The provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses to streams and coastal waters during storms. Flows that would otherwise potentially be overflows would receive at least primary treatment at the Honouliuli WWTP prior to disposal through the Barbers Point Deep Ocean Outfall. Moreover, at least 13 mgd of flows received at the plant would be treated to the secondary level and reused. The proposed connection of two unsewered areas to the collection system will reduce the probability of spills and overflows from failing individual wastewater systems and potentially improve coastal water quality by eliminating potential non-point sources of nutrients in coastal waters.

Regardless of implementing the proposed and/or alternative wastewater improvements, the volume of wastewater received at the Honouliuli WWTP is projected to increase as a result of population growth in the service area. With the proposed collection system and treatment plant improvements, PWWF would increase. Although wastewater flows received at the plant are projected to increase, implementation of secondary treatment for 13 mgd of this flow will reduce the overall level of the various regulated wastewater constituents discharged into the ocean through the Barbers Point Deep Ocean Outfall. Moreover, planned reuse of reclaimed water would reduce this level even further.

Section 226-13 Objectives and policies for the physical environment - land, air, and water quality.

- (a) (1) *Maintenance and pursuit of improved quality in Hawaii's land, air and water resources.*
- (b) (3) *Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.*
- (b) (4) *Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.*

Comment:

The proposed and alternative wastewater facility improvements will have beneficial water quality impacts. The provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses to streams and coastal waters during storms. Flows that would otherwise potentially be overflows would minimally receive primary treatment at the Honouliuli WWTP prior to disposal through the Barbers Point Deep Ocean Outfall. Moreover, at least 13 mgd of flows received at the plant would be treated to the secondary level and reused. The proposed connection of two unsewered areas to the collection system will reduce the probability of spills and overflows from failing individual wastewater systems and potentially improve coastal water quality by eliminating potential non-point sources of nutrients in coastal waters.

Regardless of implementing the proposed and/or alternative improvements, the volume of wastewater received at the Honouliuli WWTP is projected to increase as a result of population growth in the service area. With the proposed collection system and treatment plant improvements, flows received and treated during storms would increase. Although wastewater flows received at the plant are projected to increase, implementation of secondary treatment for 13 mgd of this flow will reduce the overall level of the various regulated wastewater constituents discharged into the ocean through the Barbers Point Deep Ocean Outfall. Moreover, planned reuse of reclaimed water would reduce this level even further.

Proposed improvements at the Honouliuli WWTP will include odor-control measures. Proposed changes in treatment processes, particularly for solids, will also reduce odor generation.

Noise mitigation at the Honouliuli WWTP and the various WWPSs will be achieved through measures required for compliance with State DOH standards for stationary noise sources.

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

- (b) (1) *Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.*
- (b) (2) *Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.*
- (b) (3) *Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.*

Comment:

The West Mamala Bay Facilities Plan is a 20-year plan that recommends improvements needed to address existing and future needs related to the wastewater collection, treatment and disposal in the West Mamala Bay Sewerage Subdistrict, which is served by the Honouliuli WWTP. Preparation of the West Mamala Bay Facilities Plan was prompted by the City and County of Honolulu General Plan (1992) objective and policy encouraging development in this subdistrict. Specifically, the General Plan states the following:

"Kapolei, Ewa and the high-growth areas of Central Oahu, including Mililani, are within the West Mamala Bay Subdistrict."

The West Mamala Bay Facilities Plan examines a range of alternatives for addressing the wastewater collection, treatment and disposal needs of the service area and makes overall recommendations for facility improvements. These recommendations provide ample flexibility for subsequent design, development and phasing of facilities to address the prudent use of resources and to accommodate changing public demands and priorities.

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

- (a) (1) *Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.*
- (a) (2) *Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.*
- (b) (1) *Encourage the adequate development of sewerage facilities that complement planned growth.*
- (b) (2) *Promote re-use and recycling to reduce solid and liquid wastes and employ conservation ethic.*

Comment:

The West Mamala Bay Facilities Plan was prepared in accordance with various Federal, State and City and County of Honolulu laws, ordinances, rules, regulations and programs. The West Mamala Bay Facilities Plan is a 20-year plan that recommends improvements needed to address existing and future needs related to the wastewater collection, treatment and disposal in the West Mamala Bay Sewerage Subdistrict, which is served by the Honouliuli WWTP. These recommendations are based on current population data and population projections prepared by DPP. The population projections extend through 2020 and, thus, establish the planning horizon for the West Mamala Bay Facilities Plan.

The recommended improvements at Honouliuli WWTP are based on the City's commitment to meet requirements for beneficial effluent reuse as well as beneficial biosolids reuse established by the 309 Consent Decree.

Section 226-16 Objective and policies for facility systems - water.

- (b) (3) *Reclaim and encourage the productive use of runoff water and wastewater discharges.*

Comment:

The recommended improvements at Honouliuli WWTP are based on the City's commitment to meet requirements for beneficial effluent reuse as well as beneficial biosolids reuse established by the 309 Consent Decree.

Section 226-104 Population growth and land resources priority guidelines.

- (a) (3) *Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.*

Comment:

The West Mamala Bay Facilities Plan is a 20-year plan that recommends improvements needed to address existing and future needs related to the wastewater collection, treatment and disposal in the West Mamala Bay Sewerage Subdistrict, which is served by the Honouliuli WWTP. Preparation of West Mamala Bay Facilities Plan was prompted by City and County of Honolulu General Plan (1992) objective and policy encouraging development in this subdistrict. Specifically, the General Plan states the following:

"Kapolei, Ewa and the high-growth areas of Central Oahu, including Milliani, are within the West Mamala Bay Subdistrict."

Existing and future needs related to the wastewater collection, treatment and disposal system for the Honouliuli WWTP were assessed as the basis for facilities planning. These assessments were based on current population data and population projections prepared by DPP. The population projections extend through 2020 and, thus, establish the planning horizon for the West Mamala Bay Facilities Plan.

5.2 State Functional Plans

The Statewide planning system requires the development of State Functional Plans which are approved by the Governor of Hawaii. The State Functional Plans guide the implementation of State and County actions in the areas of agriculture, conservation lands, education, energy, health, higher education, historic preservation, housing, recreation, tourism, water resources development, transportation, employment, and human services. The proposed project is consistent with the objectives, policies and implementing actions of the State Recreational Functional Plan.

5.2.1 State Recreation Functional Plan

Objective IV-B: Prevent degradation of the marine environment.

Policy IV B(1): Enhance water quality to provide high-quality ocean recreation opportunities.

Implementing Action IV-B(1)a: Regularly monitor water quality at key ocean recreation sites.

The proposed and alternative wastewater facility improvements will have beneficial water quality impacts on recreational coastal waters. The provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses to streams and coastal waters during storms. Flows that would otherwise potentially be overflows would minimally receive primary treatment at the Honouliuli WWTP prior to disposal through the Barbers Point Deep Ocean Outfall. Moreover, at least 13 mgd of flows received at the plant would be treated to the secondary level and reused. The proposed connection of two unsewered areas to the collection system will reduce the probability of spills and overflows from failing individual wastewater systems and potentially improve coastal water quality by eliminating potential non-point sources of nutrients in coastal waters.

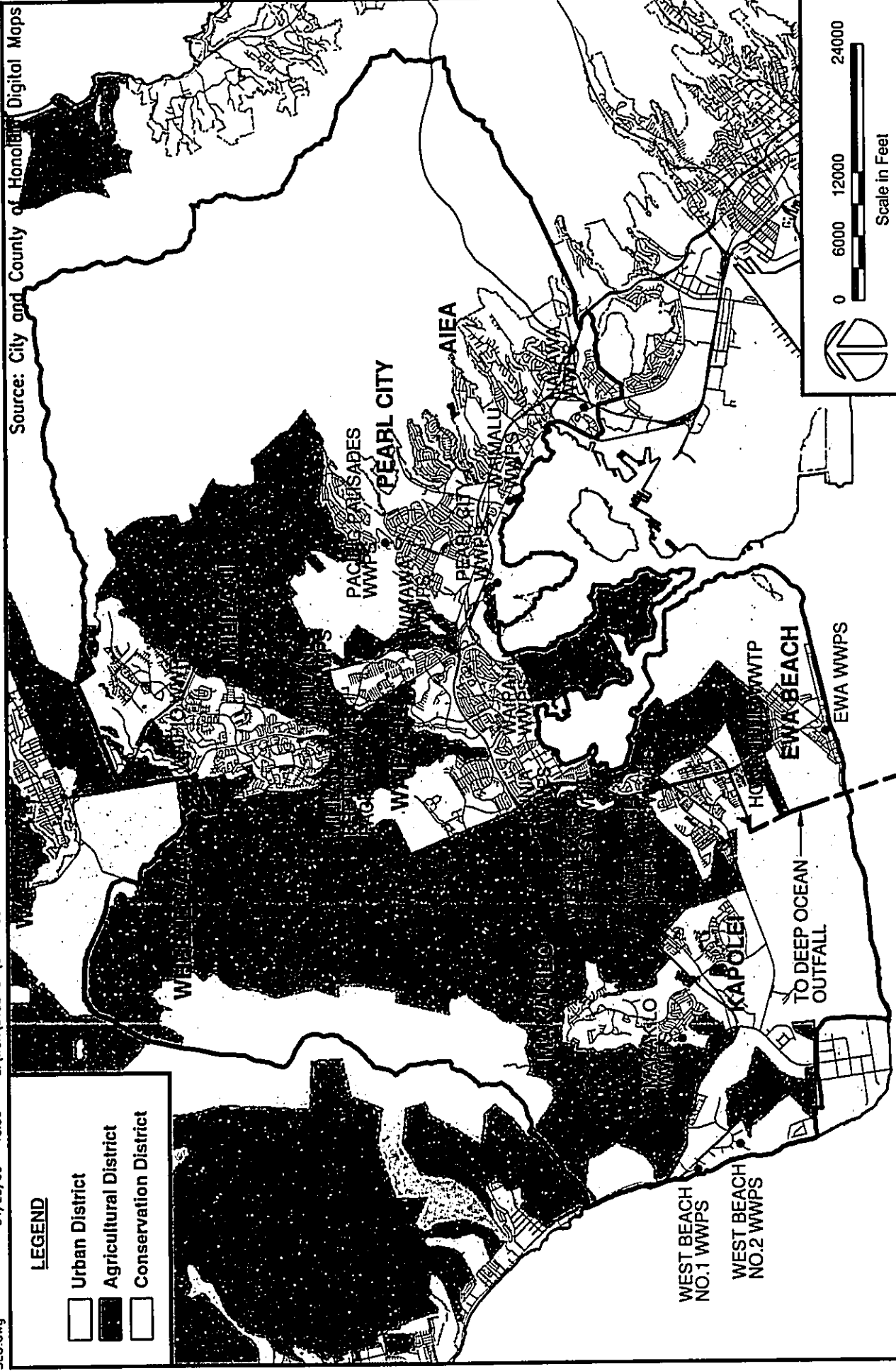
As part of the NDPES permit which the Honouliuli WWTP operates under, the City is required to regularly monitor shoreline, nearshore and offshore stations to ensure that nutrient levels do not exceed water quality standards established by the permit.

5.3 State Land Use District

The State Land Use Law, Chapter 205, HRS, is intended to preserve, protect and encourage the development of lands in the State for uses which are best suited to the public health and welfare for Hawaii's people. All lands in the State are classified into four land use districts by the State Land Use Commission: Urban, Agricultural, Conservation, and Rural.

Two land use districts are found in the Study Area: Urban and Agricultural (see Figure 5-1). Conservation lands are mostly found along the coasts, consisting of fishponds and wetlands.

The Honouliuli WWTP is located within the Urban District. Most of the proposed improvements are located within the Urban District, while a minority is located in the Agricultural district. State land use designations are summarized in Table 5-1 for the proposed improvements. The existing and proposed and alternative wastewater facility improvements are consistent with the respective Urban and Agricultural District classifications.



LEGEND

-  Urban District
-  Agricultural District
-  Conservation District

WEST MAMALA BAY FACILITIES PLAN

STATE LAND USE

FIGURE

5-1

**Table 5-1
State Land Use, Zoning, Development Plan and SMA Designations
By Proposed Improvement**

	Proposed Improvement	State Land Use District	Zoning	DP Land Use	Within SMA
West Interceptor System		Agriculture Urban	R-5, F-1, AG-1, I-2	N/A (Ewa DP)	No
East Interceptor System	Replace System Alternative				
	1. Waimalu Relief Sewer Tunnel	Urban	R-5, R-7.5	Residential	Yes
	2. Pearl City Trunk Sewer Upgrade	Urban	R-5	Residential	Yes
	3. Pearl City WWPS Relocation and Upgrade Pearl City WWPS Future Upgrade	Urban	R-5	Public Fac.	Yes
	4. Waipahu WWPS Upgrade Waipahu WWPS Future Upgrade	Agric., Urban	P-1, P-2	Public Fac.	Yes
	5. Honouliuli Interceptor Relief	Agric., Urban	P-2, R-5, A-1, B-1, F-1, I-1	N/A (Ewa DP)	Yes
	Flow Equalization w/in System Alternative				
	1. Halawa WWPS Storage Facility	Urban	R-5, A-1	Res., LD Apt.	No
	2. Waimalu WWPS Storage Facility	Urban	P-2	Park	Yes
	3. Pearl City Storage Facility	Urban	AG-2	Public Fac.	Yes
	4. Waipahu WWPS Upgrade Milliani PTF Storage Facility	Agric., Urban Agriculture	P-1, P-2 AG-1	Public Fac. Public Fac.	Yes No
Isolated System Deficiencies	Honouliuli Area				
	1. Ft. Weaver Rd. Manhole and Pipe Rehabilitation	Agriculture	P-2, R-5, A-1	N/A Ewa DP	No
	2. Ewa Beach Manhole and Pipe Rehabilitation	Urban	R-5, A-1, A-2, F-1	N/A (Ewa DP)	Yes
	3. Renton Rd. Manhole Rehabilitation	Agric., Urban	P-2, AG-1, R-1, A-1, B-1, F-1	N/A Ewa DP	No
	4. Ewa Beach WWPS Upgrade	Urban	R-5	N/A (Ewa DP)	Yes
	5. West Loch Estates Future WWPS Upgrade	Urban	R-5	N/A (Ewa DP)	Yes
	Pearl City Area				
	6. Pacific Palisades Diversion Sewer	Urban	P-2, F-1, I-1	Industrial	No
	7. Waiawa Off-Site Sewer	Agric., Urban	AG-1, AG-2, F-1	Pres, Park, Res., Agr., MD Apt, Comm.	Yes
	8. Honouliuli Sewer Rehabilitation	Urban	R-5, R-7.5	Res., Ind., Agric., comm.	No
	9. Pacific Palisades Diversion Sewer	Urban	P-1, F-1, I-1	Industrial	Yes
	10. Halawa Relief Sewer	Urban	R-5, A-1	N/A (Ewa DP)	No

(Continued)

Table 5-1

State Land Use, Zoning, Development Plan and SMA Designations
By Proposed Improvement

Isolated System Deficiencies (continued)	Proposed Improvement	State Land Use District	Zoning	DP Land Use	Within SMA
	Waipahu Area				
	11. Milliani PTF Storage Facility	Agriculture	AG-1	Public Fac.	No
	12. Kamehameha Highway Trunk Sewer Reconstruction, Milliani	Urban	P-2, R-5	Residential, Public Fac., R. Emph. MU	No
	13. Honouliuli Manhole and Pipe Rehabilitation	Urban	R-5	Res. R. Emph. MU	No
	14. Honouliuli Hydraulic Rehabilitation	Urban	P-1, R-7.5	Preservation, Residential	Yes
	15. Waipio Upgrade WWPS	Agric., Urban	P-2, AG-1, R-5, PF	Public Fac.	No
	16. Honouliuli Hydraulic Rehabilitation	Urban	P-2, R-5, R-7.5, B-1, B-2, I-1, I-2,	Pres., Park, Residential, Commercial, Industrial	Yes
	17. Honouliuli Manhole and Pipe Rehabilitation	Urban	P-2, R-5, A-2, B-2	Park, Residential, MD Apt., Commercial	Yes
	18. Milliani PTF Upgrade	Agricultural	AG-1	Public Fac.	No
	Milliani PTF Future Upgrade	Agricultural	AG-1	Public Fac.	No
Unsewered Areas	Honouliuli	Agric., Urban	R-5, AG-1, AG-2	N/A (Ewa DP)	No
	Ewa Beach	Urban	R-5, P-2	N/A (Ewa DP)	No
<p>Legend for Zoning: P-1 – Restricted, P-2 – General, AG-1 – Restricted, AG-2 – Restricted, R-5 – Residential, R-7 – Residential, B-1, Neighborhood Business, B-2 Community Business, I-1, Limited, I-2 General, F-1 Military and Federal</p>					
<p>Source: City and County of Honolulu, Department of Planning and Permitting, GIS Data and IDS Digital Maps</p>					

5.4 State Coastal Zone Management Program

Hawaii's Coastal Zone Management (CZM) Program, established pursuant to Chapter 205A, HRS, as amended, is administered by the State Office of Planning (OP) and provides for the beneficial use, protection and development of the State's coastal zone. The objectives and policies of the Hawaii CZM program encompass broad concerns such as impact on recreational resources, historic and archaeological resources, coastal scenic resources and open space, coastal ecosystems, coastal hazards, and the management of development. The applicability of the CZM objectives and policies to the West Mamala Bay Facilities Plan is as follows:

1. Recreational Resources

Objective: Provide coastal recreational opportunities accessible to the public.

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

- (vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters.*

Comment:

The proposed and alternative wastewater facility improvements will have beneficial water quality impacts on recreational coastal waters. The provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses to streams and coastal waters during storms. Flows that would otherwise potentially be overflows would minimally receive primary treatment at the Honouliuli WWTP prior to disposal through the Barbers Point Deep Ocean Outfall. Moreover, at least 13 mgd of flows received at the plant would be treated to the secondary level and reused. The proposed connection of two unsewered areas to the collection system will reduce the probability of spills and overflows from failing individual wastewater systems and potentially improve coastal water quality by eliminating potential non-point sources of nutrients in coastal waters.

4. Coastal Ecosystems

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

Policy C: Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

Policy D: Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.

Comment:

The proposed and alternative wastewater facility improvements will have beneficial water quality impacts on coastal aquatic ecosystems. The provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses to streams and coastal waters during storms. Flows that would otherwise potentially be overflows would minimally receive primary treatment at the Honouliuli WWTP prior to disposal through the Barbers Point Deep Ocean Outfall. Moreover, at least 13 mgd of flows received at the plant would be treated to the secondary level and reused. The proposed connection of two unsewered areas to the collection system will reduce the probability of spills and overflows from failing individual wastewater systems and potentially improve coastal water quality by eliminating potential non-point sources of nutrients in coastal waters.

Regardless of implementing the proposed and/or alternative improvements, the volume of wastewater received at the Honouliuli WWTP is projected to increase as a result of population growth in the service area. With the proposed collection system and treatment plant improvements, flows received and treated during storms would increase. Although wastewater flows received at the plant are projected to increase, implementation of secondary treatment for 13 mgd of this flow will reduce the overall level of the various regulated wastewater constituents discharged into the ocean through the Barbers Point Deep Ocean Outfall. Moreover, planned reuse of reclaimed water would reduce this level even further. The resulting improvement coastal water quality would beneficially impact aquatic ecosystems in the vicinity of the outfall.

Any potential for wastewater spills at the proposed and alternative wastewater facilities which may affect aquatic resources in coastal waters will be mitigated by designing the facilities with adequate capacities and flood protection.

5. Coastal Hazards

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

Policy C: Ensure that developments comply with requirements of the Federal Flood Insurance Program.

Comment:

Development of the proposed and alternative wastewater facility improvements and/or alternatives within designated flood hazard districts will be in accordance with regulations set forth in Section 21-9.10 Flood Hazard Districts of the City and County of Honolulu's LUO, and subject to the preparation of flood studies pursuant to the Section, as may be required. Construction of the proposed and alternative wastewater facility improvements will be mitigated by designing the facilities to minimize adverse effects on flood heights, as well as minimize operational disruptions and facilities damage during a major flood event. For facility improvements located within the tsunami inundation zone, any potential for disruptions or spills in the event of a tsunami will be mitigated by designing these improvements in accordance with the City and County of Honolulu's UBC, Subsection (f) Coastal Floodwater Design.

5.5 City and County of Honolulu General Plan

The General Plan for the City and County of Honolulu, initially adopted in 1977, is a statement of the long-range social, economic, environmental, and design objectives for the general welfare and prosperity of the people of Oahu. The Plan is also a statement of broad policies which facilitate the attainment of the objectives of the Plan. Eleven subject areas provide the framework for the City's expression of public policy concerning the needs of the people and functions of government. These areas include population; economic activity; the natural environment; housing; transportation and utilities; energy; physical development and urban design; public safety, health and education; culture and recreation; and, government operations and fiscal management. The relationship of the proposed project improvements to the relevant objectives and policies of the General Plan are as follows:

I. Population

Objective B: To Plan for future population growth.

Policy 1:

Allocate efficiently the money and resources of the City and County in order to meet the needs of Oahu's anticipated future population.

Comment:

The West Mamala Bay Facilities Plan is a 20-year plan that recommends improvements needed to address existing and future needs related to the wastewater collection, treatment and disposal in the West Mamala Bay Sewerage Subdistrict, which is served by the Honouliuli WWTP. The existing and future needs of the Subdistrict related to the wastewater collection, treatment and disposal system

were assessed as the basis for facilities planning using current population data and population projections prepared by DPP. The population projections extend through 2020 and, thus, establish the planning horizon for the West Mamala Bay Facilities Plan.

DPP's population projections are subject to periodic updating and specific recommendations will be evaluated based on the latest available projections as they are considered for implementation.

Objective C:

To establish a pattern of population distribution that will allow the people of Oahu to live and work in harmony.

Policy 2:

Encourage development within the secondary urban center at Kapolei and the Ewa and Central Oahu urban-fringe areas to relieve developmental pressures in the remaining urban-fringe and rural areas and to meet housing needs not readily provided in the primary urban center.

Comment:

Preparation of West Mamala Bay Facilities Plan was prompted by this objective and policy encouraging development in the West Mamala Bay Sewerage Subdistrict, which is served by the Honouliuli WWTP. Kapolei, Ewa and the high-growth areas of Central Oahu, including Mililani, are within the West Mamala Bay Subdistrict. The existing and future needs of the Subdistrict related to the wastewater collection, treatment and disposal system were assessed as the basis for facilities planning using current population data and population projections prepared by DPP. The population projections extend through 2020 and, thus, establish the planning horizon for the West Mamala Bay Facilities Plan.

III. Natural Environment

Objective A: *To protect and preserve the natural environment.*

Policy 7: *Protect the natural environment from damaging levels of air, water, and noise pollution.*

Comment:

The proposed and alternative wastewater facility improvements will have beneficial water quality impacts. The provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses to streams and coastal waters during storms. Flows that would otherwise potentially be overflows would minimally receive primary treatment at the Honouliuli WWTP prior to disposal through the Barbers Point Deep Ocean Outfall. Moreover, at least 13 mgd

of flows received at the plant would be treated to the secondary level and reused. The proposed connection of two unsewered areas to the collection system will reduce the probability of spills and overflows from failing individual wastewater systems and potentially improve coastal water quality by eliminating potential non-point sources of nutrients in coastal waters.

Regardless of implementing the proposed and/or alternative improvements, the volume of wastewater received at the Honouliuli WWTP is projected to increase as a result of population growth in the service area. With the proposed collection system and treatment plant improvements, flows received and treated during storms would increase. Although wastewater flows received at the plant are projected to increase, implementation of secondary treatment for 13 mgd of this flow will reduce the overall level of the various regulated wastewater constituents discharged into the ocean through the Barbers Point Deep Ocean Outfall. Moreover, planned reuse of reclaimed water would reduce this level even further.

Proposed improvements at the Honouliuli WWTP will include odor-control measures. Proposed changes in treatment processes, particularly for solids, will also reduce odor generation.

Noise mitigation at the Honouliuli WWTP and the various WWPSs will be achieved through measures required for compliance with State DOH standards for stationary noise sources.

V. Transportation and Utilities

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

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

Policy 6: Support programs to recover resources from solid-waste and recycle wastewater.

Comment:

The proposed and alternative wastewater facility improvements will have beneficial water quality impacts. The provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses to streams and coastal waters during storms. Flows that would otherwise potentially be overflows would receive at least primary treatment at the Honouliuli WWTP prior to disposal through the Barbers Point Deep Ocean Outfall. Moreover, at least 13 mgd of flows received at the plant would be treated to the secondary level and reused. The proposed connection of two unsewered areas to the collection system will

reduce the probability of spills and overflows from failing individual wastewater systems and potentially improve coastal water quality by eliminating potential non-point sources of nutrients in coastal waters.

Any potential for wastewater spills at the proposed and alternative wastewater facilities which may affect aquatic resources in coastal waters will be mitigated by designing the facilities with adequate capacities and flood protection.

The recommended improvements at Honouliuli WWTP are based on the City's commitment to meet requirements for beneficial effluent reuse as well as beneficial biosolids reuse established by the 309 Consent Decree at the plant.

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

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

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

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

Comment:

The West Mamala Bay Facilities Plan is a 20-year plan that recommends improvements needed to address existing and future needs related to the wastewater collection, treatment and disposal in the West Mamala Bay Sewerage Subdistrict, which is served by the Honouliuli WWTP. The existing and future needs of the Subdistrict related to the wastewater collection, treatment and disposal system were assessed as the basis for facilities planning using current population data and population projections prepared by DPP. The population projections extend through 2020 and, thus, establish the planning horizon for the West Mamala Bay Facilities Plan.

The West Mamala Bay Facilities Plan examines a range of alternatives for addressing the wastewater collection, treatment and disposal needs of the service area and makes overall recommendations for facility improvements. These recommendations provide ample flexibility for subsequent design, development and phasing facilities to address the prudent use of resources and to accommodate changing public demands and priorities.

5.6 City and County of Honolulu Development Plan

The City and County of Honolulu's Development Plan (DP) program provides a framework for implementing the objectives and policies of the General Plan on an island basis. Eight DPs have been adopted covering the entire island. In 1993, the DPP initiated a program to revise each of the development plans to bring them into

conformance with the 1992 City Charter amendment which specifies that the development plans are to provide "conceptual" schemes for development, rather than "relatively detailed" plans. The Study Area encompasses the entire Ewa Development Plan area and portions of the Central Oahu and Primary Urban Center Development Plan areas. A revised development plan has been adopted for the Ewa region. The Central Oahu and Primary Urban Center Development Plans are currently undergoing revision.

5.6.1 Ewa Development Plan

The Ewa DP was revised by the City and adopted in August 1997. Major components of the new Ewa DP include the vision for Ewa's development and land use and infrastructure policies (see Figure 5-2) future. The Ewa DP sets forth the following general policies relating to wastewater treatment:

4.3 WASTEWATER TREATMENT

The Department of Environmental Services estimates treatment/disposal capacity at the Honouliuli WWTP will need to be increased from existing capacity for primary treatment of 38 mgd to almost 51 mgd by 2020 to meet projected population and economic growth in Ewa and Central Oahu resulting from implementation of the revised DPs. In addition, the capacity of specific sewer lines and pump stations will need to be increased.

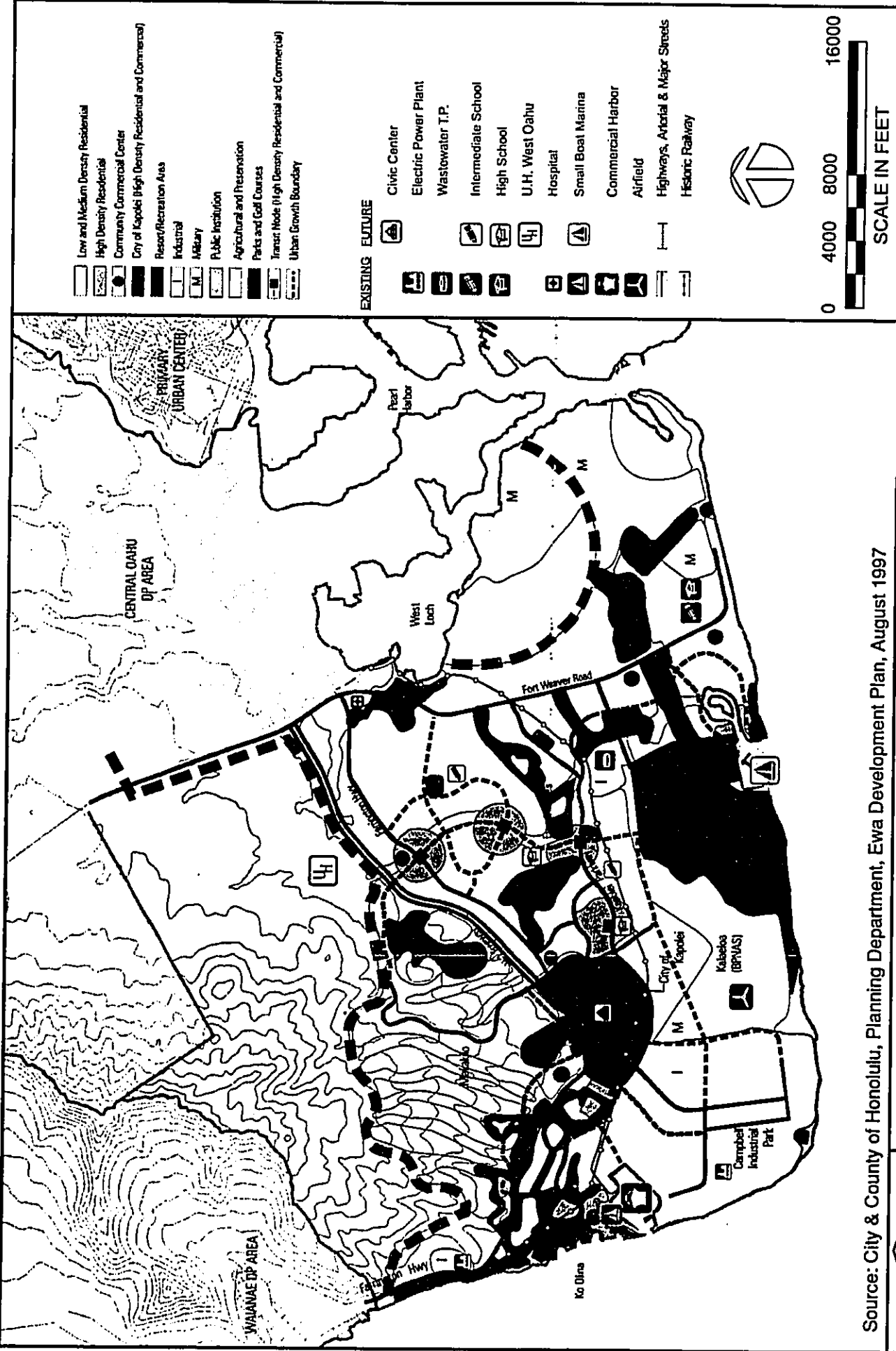
4.3.1 GENERAL POLICIES

All wastewater produced by new developments in Ewa should be connected to a regional or municipal sewer service system.

Where feasible, effluent should be treated and used as a source of nonpotable water for irrigation and other uses below the Underground Injection Control line of the State Department of Health and the "No-Pass" Line of the Board of Water Supply. As noted above, the Department of Environmental Services has made a commitment to the U.S. Environmental Protection Agency and the State Department of Health to reclaim and use up to 10 million gallons a day (mgd) of wastewater islandwide by 2001.

Wastewater treatment plants should generally be located in areas shown as planned for industrial use and away from residential areas shown on the Urban Land Use Map in Appendix A. Existing treatment plants are shown on the Urban Land Use Map and the Public Facilities Map in Appendix A. A city review and approval process, such as the Plan Review Use process, which provides adequate public notice and input, complete technical analysis of the

3152FIG-HORZ.dpt L:\DWG\3152-02\FIGURES



Source: City & County of Honolulu, Planning Department, Ewa Development Plan, August 1997

WEST MAMALA BAY FACILITIES PLAN
EWA DEVELOPMENT PLAN
URBAN LAND USE MAP

WILSON OKAMOTO & ASSOCIATES, INC.
ENGINEERS - PLANNERS

FIGURE 5-2

project, and approval by the City Council, shall be required for any major new private wastewater treatment plant. Other system elements, such as pump stations and mains, should not require such comprehensive review and policy approval.

Comment:

The West Mamala Bay Facilities Plan provides for the connection of all new development in the Study Area to the Honouliuli WWTP. In addition, unsewered areas within the Ewa DP area at Ewa Beach and Honouliuli are recommended to be served by the Honouliuli WWTP. The preliminary recommendation for the unsewered area in Ewa Beach is to construct a new gravity collection system which would connect them to the existing wastewater system. The preliminary recommendation for unsewered area in Honouliuli is to defer action since master plans are being developed for the East Kapolei area. The master plans include new wastewater collection systems that could accommodate the unsewered area.

The City awarded a contract to U.S. Filter Corporation to design, construct, and operate a reclamation facility that would satisfy the effluent reuse requirements of the 309 Consent Decree. In August 2000, the City Board of Water Supply purchased the reclamation facility. U.S. Filter will continue to oversee the operation of the facility. The facility will take 13 mgd of secondary treated effluent and produce two high-quality grades of reclaimed water which will be used for irrigation and by users at Campbell Industrial Park. If additional demand is identified in the future and the City feels it is in their interest to meet the demand, a treatment facility using upflow, continuously-backwashed filters and UV disinfection is recommended to produce R-1 quality reclaimed water.

No new treatment plants are proposed within the Ewa DP area. Upgrades at the Honouliuli WWTP should be sufficient to accommodate the wastewater treatment needs for the Study Area through the year 2020.

5.6.2 Development Plan Common Provisions

Although no longer applicable to the Ewa DP area, the DP Common Provisions, codified in the Revised Ordinances of Honolulu Chapter 24, Article 1, remain in force and effect for the Primary Urban Center and Central Oahu Development Plan areas.

Section 24-1.8(b)(2)(A) of the Common Provisions provides the following policies for wastewater facilities:

- (A) Wastewater Collection and Disposal System. The wastewater system consists of treatment facilities, ocean outfalls, force mains, interceptors, trunk sewers, and pump stations. Collection sewers which provide service to individual properties are not shown on the public facilities map.*

Adequate screening and/or a buffer zone of compatible uses shall be provided around wastewater treatment facilities.

Section 24-1.9(b) of the Common Provisions provides that priority shall be given to those projects that:

- (1) (A) Will improve or replace existing public facilities in unsound condition;*
- (1) (B) Will correct public facility needs identified in each development plan area;*
- (1) (C) Will correct recognized but previously unmet facility needs;*
- (2) (A) Are consistent with the needs that will be generated by development planned in accordance with the land use designations in each development plan;*
- (2) (B) Are consistent with the general plan pattern of population distribution for each development plan area;*

Comment:

The only wastewater treatment facility within the Study Area is the Honouliuli WWTP. Since the Honouliuli WWTP is located in the Ewa DP area, Section 24-1.8(2)(A) of the Common Provisions do not apply. However, the Facilities Plan does propose improvements to the odor control system at the Honouliuli WWTP to minimize adverse effects on surrounding properties. Acquisition of adjacent land to provide a buffer is also proposed.

The objectives of the West Mamala Bay Facilities Plan are to identify and correct deficiencies in the wastewater system within the Study Area, including portions of the Primary Urban Center and the Central Oahu DP areas, and to propose improvements to accommodate projected wastewater flows through the year 2020. Proposed improvements include various collection system improvements and alternatives to accommodate projected wastewater flows, connecting unsewered areas to the wastewater collection system, and upgrading the treatment and disposal system.

The improvements are consistent with the General Plan policies and objectives relating to population distribution which provide that growth should be directed to the Primary Urban Center, Ewa, and Central Oahu DP areas to relieve developmental pressures in the remaining urban-fringe and rural areas.

5.6.3 Development Plan Special Provisions

The DP Special Provisions for the Primary Urban Center and Central Oahu, codified as Revised Ordinances of Honolulu, Chapter 24, Articles 2 and 5, respectively, establish development principles and controls specific to each Development Plan area. The following sections are applicable to the West Mamala Bay Facilities Plan:

Section 24-5.3 The planning, funding, and construction of public projects in Central Oahu shall be guided by the policies set forth in Section 24-1.9 of the development plan common provisions. In addition, public plans and programs in Central Oahu shall provide for projects in the priority shown:

(a) *Public facilities , i.e., wastewater management, transportation, and potable water.*

(c) *Improvement of infrastructure to encourage redevelopment of Waipahu and Wahiawa.*

Comment:

Portions of the existing wastewater system are already operating near design capacity. The proposed and alternative wastewater facility improvements are necessary to support projected growth and redevelopment in the region.

5.6.4 Development Plan Land Use Map

The DP Land Use Maps for the Primary Urban Center and Central Oahu depict land use patterns that are consistent with the objectives and policies of the General Plan. The Land Use Map presents land use classifications for both existing built-up areas, as well as projected development areas, and public and quasi-public facilities. All major and minor roadways are considered "undesigned" on the DP Land Use Map. The inclusion of projected development areas on the Land Use Map provides the mechanism by which the DP is able to allocate population densities recommended in the General Plan.

The predominant DP land use designation for urbanized areas within the Study Area is Residential. Pockets of lands designated for apartment, commercial, industrial, and public facility use are also scattered throughout the urbanized areas. The mountainous inland areas are predominately designated Preservation and large tracts of Agricultural designated lands are located north of the communities of Waipahu and Crestview and the planned Waiawa development. Lands in Waipio Peninsula and Kipapa and Waikele Gulch are designated Military (see Figures 5-3 through 5-5).








The DP Land Use map designations for the proposed and alternative wastewater facilities are described in Table 5-1. The proposed improvements are consistent with the respective DP Land Use Map designations.

5.6.5 Development Plan Public Facilities Map









The DP Public Facilities Map shows the general location of proposed major public facilities. Major public facilities include those which (1) significantly increase system capacity; (2) expand service areas; (3) change the function of an existing facility; (4) involve the replacement of or renovations to existing facilities which would permit significant new development or redevelopment; (5) have a significant impact on surrounding land uses; or (6) cost over \$1,000,000. However improvement districts,

Source: City & County of Honolulu Digital Maps

LEGEND

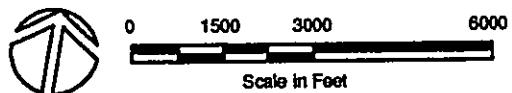
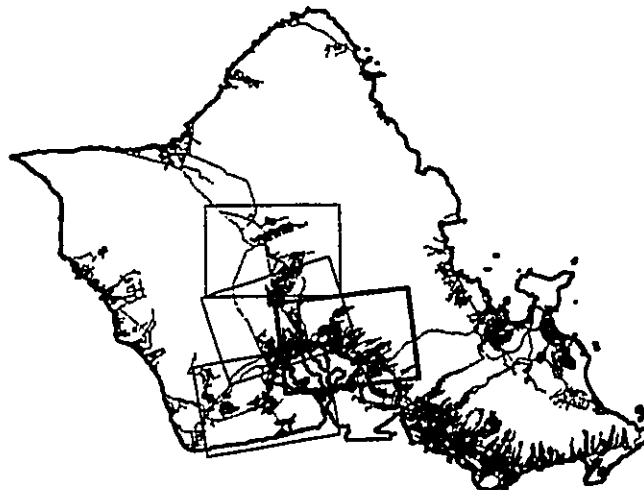
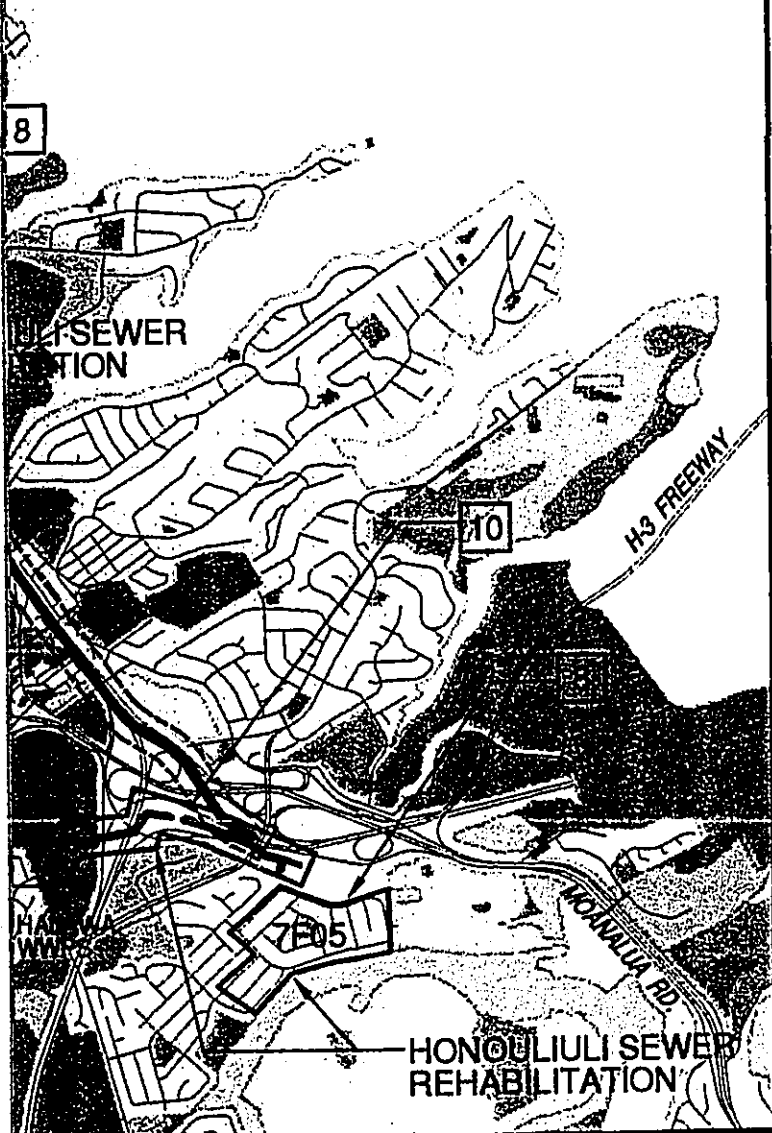
-  PRELIMINARY RECOMMENDATION*
-  DEFICIENCY ID*
*REFER TO TABLE 3-5
-  1995 INADEQUATE SEWER LINE
-  2020 INADEQUATE SEWER LINE
-  MANHOLE DEFICIENCY
-  STRUCTURAL DEFICIENCY
-  CORROSION DEFICIENCY

DP LAND USE LEGEND

-  RESIDENTIAL
-  LOW DENSITY APARTMENT
-  MEDIUM DENSITY APARTMENT
-  COMMERCIAL
-  INDUSTRIAL
-  COMMERCIAL/INDUSTRIAL
-  AGRICULTURE
-  PRESERVATION
-  PUBLIC FACILITIES
-  MILITARY
-  PARKS & RECREATION
-  GOLF COURSE

Upgrade System Alternative
PEARL CITY TRUNK SEWER UPGRADE

Upgrade System Alternative
VAIMALU RELIEF SEWER TUNNEL



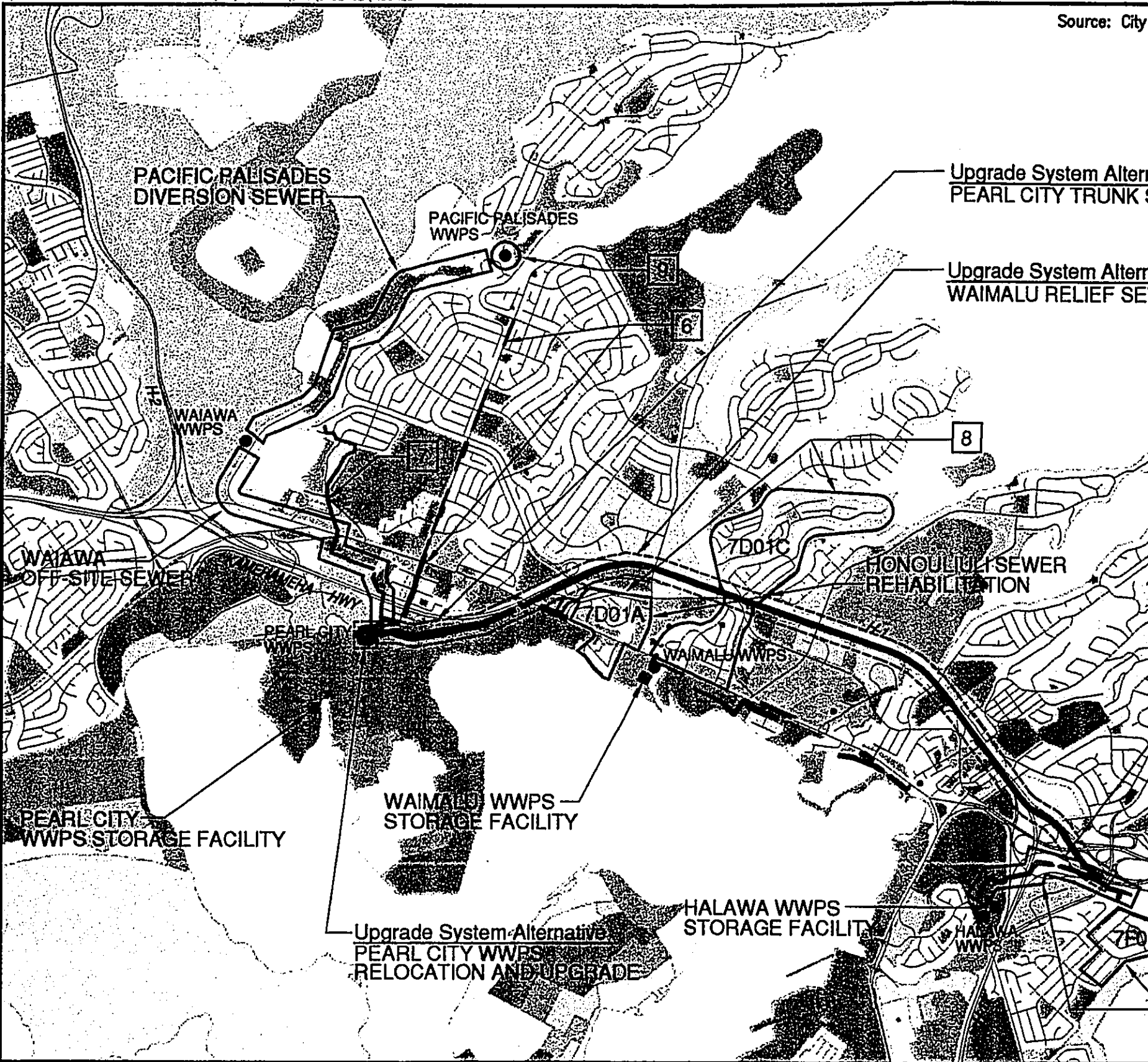
FACILITIES PLAN

IN LAND USE MAP
TY AREA

FIGURE

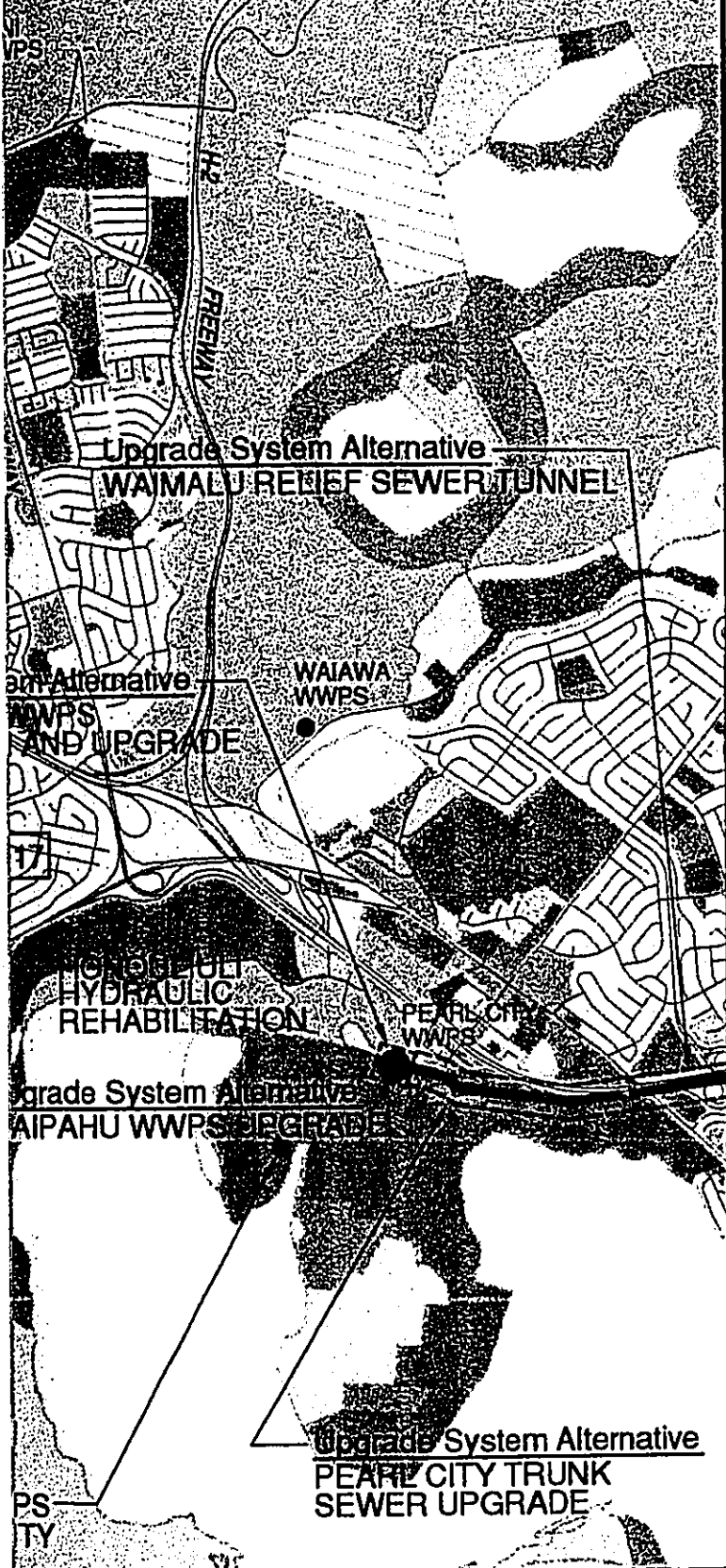
5-3

Source: City



WEST MAMALA BAY FACILITIES PLAN
DEVELOPMENT PLAN LAND USE MA
PEARL CITY AREA

Source: City & County of Honolulu Digital Maps

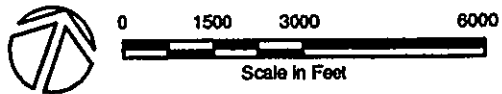
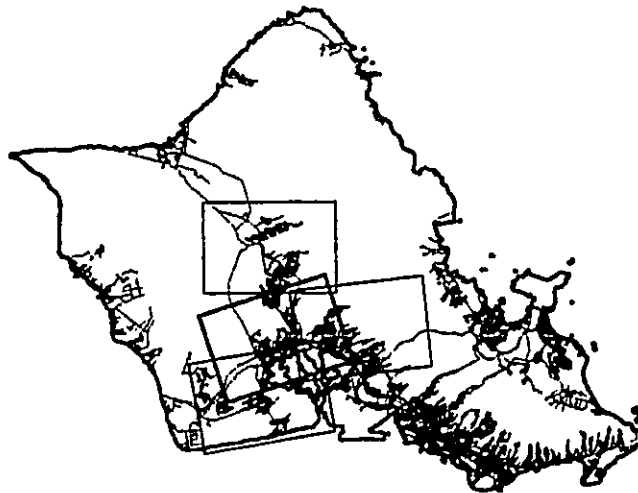


LEGEND

- PRELIMINARY RECOMMENDATION*
- DEFICIENCY ID*
*REFER TO TABLE 3-6
- 1995 INADEQUATE SEWER LINE
- 2020 INADEQUATE SEWER LINE
- MANHOLE DEFICIENCY
- STRUCTURAL DEFICIENCY
- CORROSION DEFICIENCY

DP LAND USE LEGEND

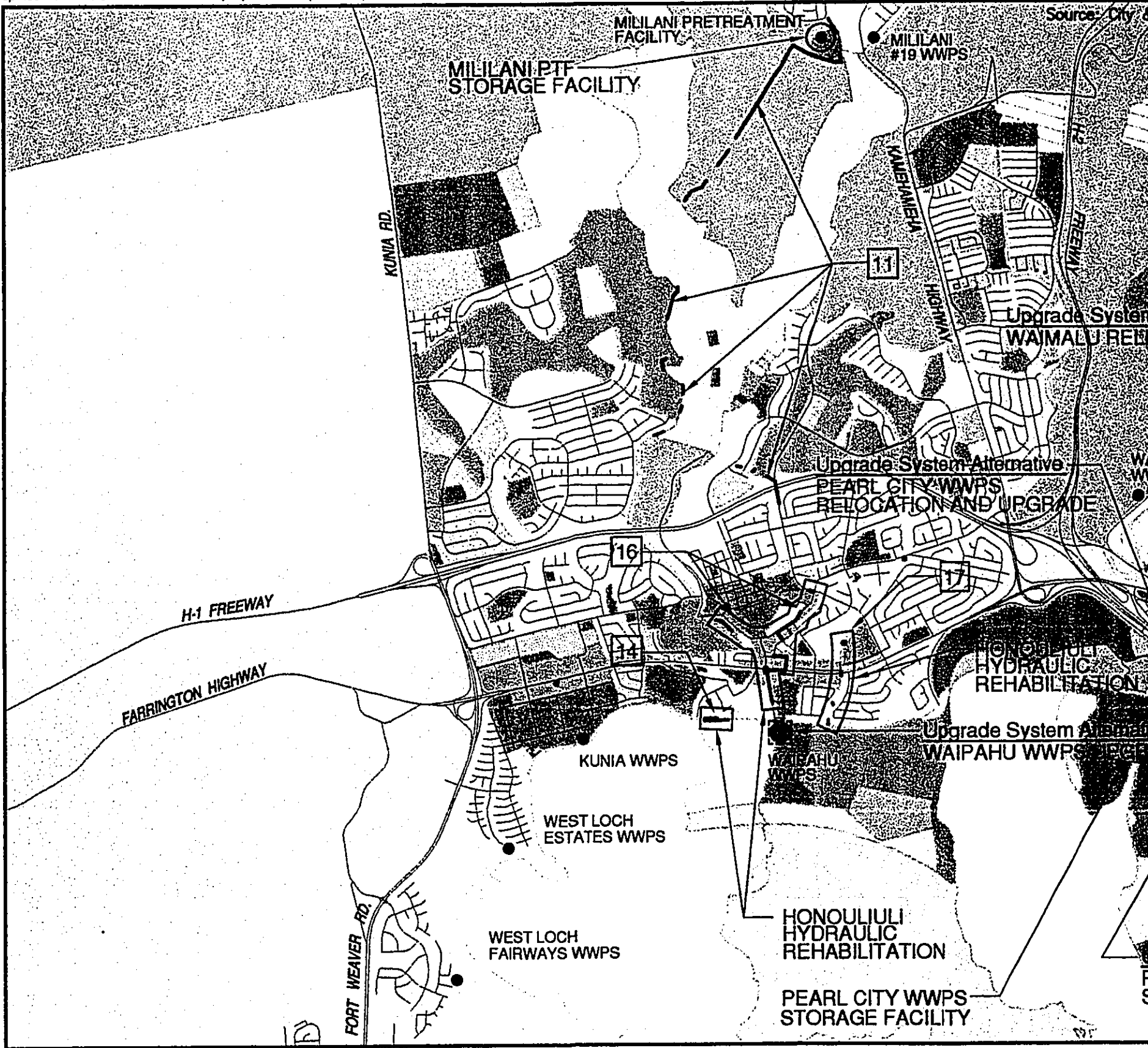
- RESIDENTIAL
- LOW DENSITY APARTMENT
- MEDIUM DENSITY APARTMENT
- COMMERCIAL
- INDUSTRIAL
- COMMERCIAL/INDUSTRIAL
- AGRICULTURE
- PRESERVATION
- PUBLIC FACILITIES
- MILITARY
- PARKS & RECREATION
- GOLF COURSE



FACILITIES PLAN

AN LAND USE MAP
(WAIPIIO, KUNIA, WAIKELE, AND WAIPIO)

FIGURE
5-4

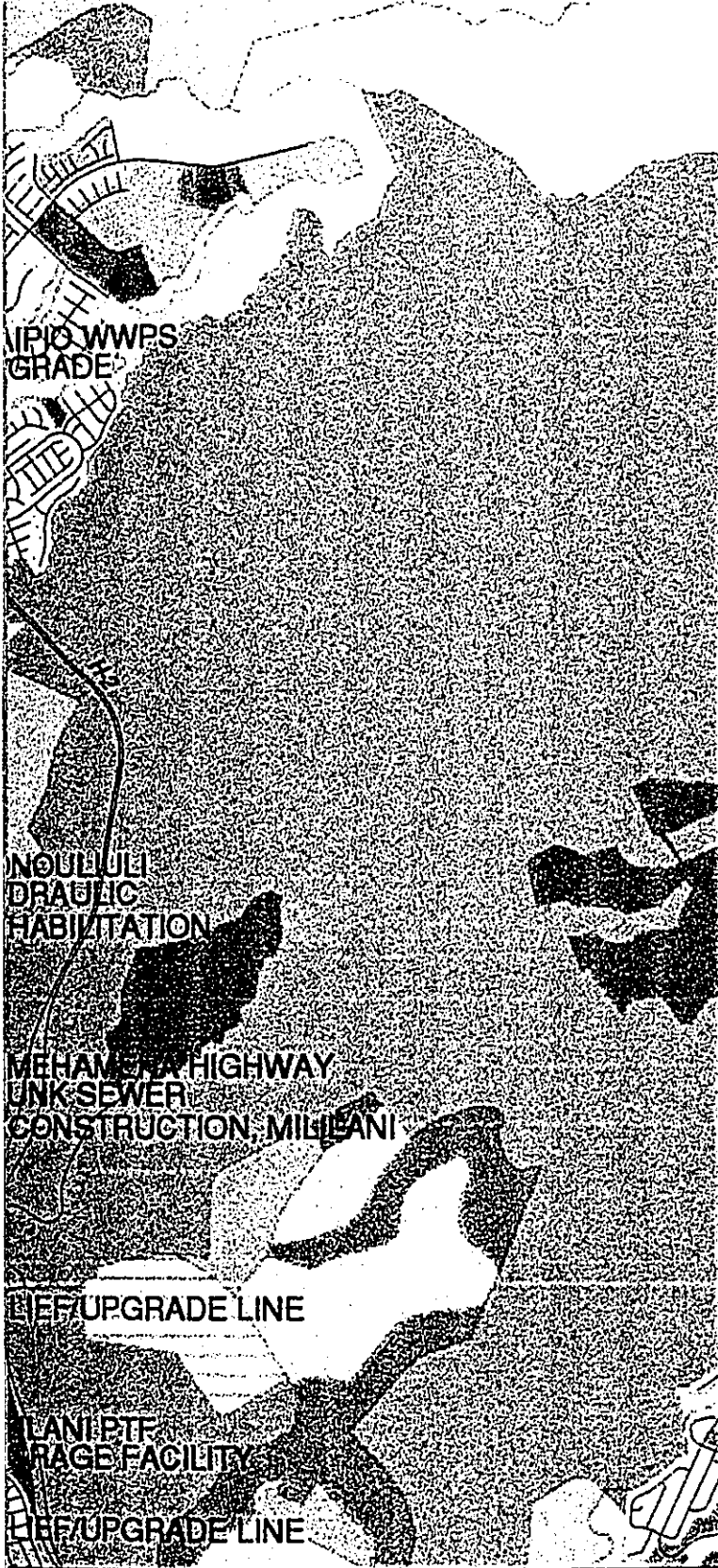


WEST MAMALA BAY FACILITIES PLAN

DEVELOPMENT PLAN LAND USE MA
WAIPAHU AREA - MAP 1 OF 2 (WAIPAHU, KUNIA, WAIK



Source: City & County of Honolulu Digital Maps

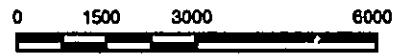
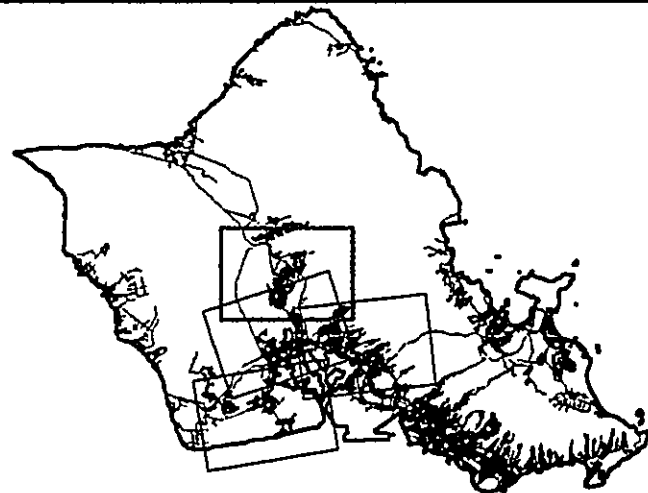


LEGEND

- PRELIMINARY RECOMMENDATION*
- DEFICIENCY ID*
- *REFER TO TABLE 3-6
- 1995 INADEQUATE SEWER LINE
- 2020 INADEQUATE SEWER LINE
- MANHOLE DEFICIENCY
- STORAGE FACILITY
- STRUCTURAL DEFICIENCY
- CORROSION DEFICIENCY

DP LAND USE LEGEND

- RESIDENTIAL
- LOW DENSITY APARTMENT
- MEDIUM DENSITY APARTMENT
- COMMERCIAL
- INDUSTRIAL
- COMMERCIAL/INDUSTRIAL
- AGRICULTURE
- PRESERVATION
- PUBLIC FACILITIES
- MILITARY
- PARKS & RECREATION
- GOLF COURSE

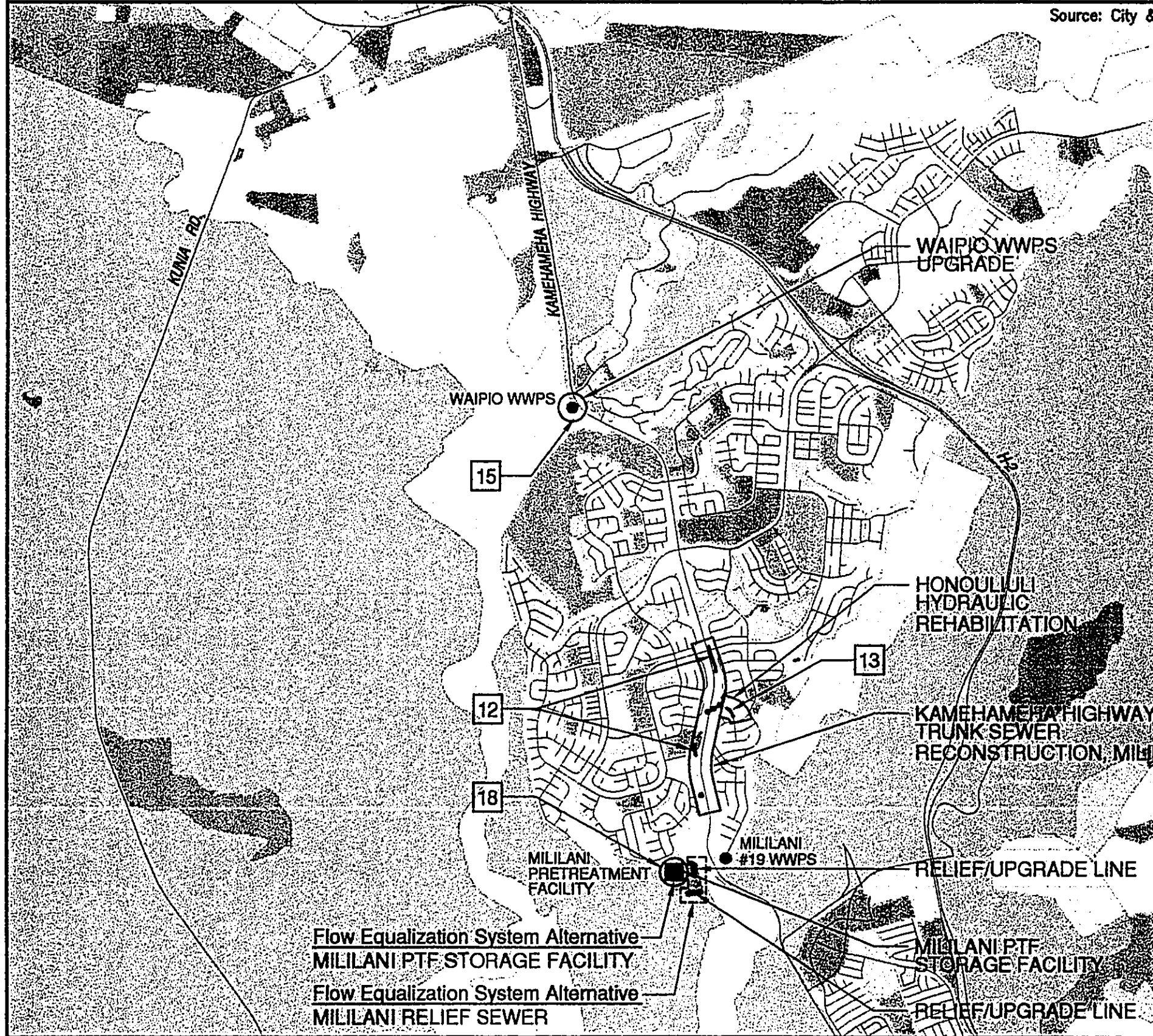


Scale in Feet

FACILITIES PLAN

IN LAND USE MAP
P 2 OF 2 (MILILANI)

FIGURE
5-5



WEST MAMALA BAY FACILITIES PLAN

DEVELOPMENT PLAN LAND USE MAP
WAIPAHU AREA - MAP 2 OF 2 (MILILANI)



WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS

the addition of equipment, and the repair, replacement, renovation or modification of existing facilities which would not involve any significant expansion of existing facilities shall not be deemed a major public facility even if the cost exceeds \$1,00,000 so long as items (1) through (5) are not affected. Improvements proposed in the West Mamala Bay Facilities Plan which meet the definition of a major public facility will need to be shown on the DP Public Facilities Map before land acquisition or construction funds can be appropriated for the project. Amendments to the DP Public Facilities Map are processed by the DPP and approved by the City Council via Ordinance.

The following major sewer facilities are identified on the Primary Urban Center and Central Oahu DP Public Facilities Maps:

- A new sewage pump station and sewer system is designated in Aiea Heights on Welelau Place;
- Sewer system improvements are designated along Waimano Home Road/Lehua Avenue from Moanalua Road to Lehua Elementary School, and west to Waiawa Stream;
- Sewer system improvements are designated along Kipaipai Street and within the city's Manana development project in Pearl City;
- Sewer system improvements are designated within Waipio Peninsula from the Ted Makalena Golf Course to Hanaloa Point;
- The Waipahu wastewater pump station is designated for sewage treatment plant modifications (STP/M);
- Sewer system improvements are designated for the planned Waiawa project;
- Sewer system improvements are designated along the former OR&L railway right-of-way from the Pearl City Peninsula Naval Housing to Waipahu Depot Road;
- Sewer system improvements are designated for lands in the vicinity of the intersection of Waipahu Depot Road and Haakoa Place;
- Sewer system improvements are designated in Village Park along Haalau Street;

- Sewer system improvements are designated in Mililani along Kamehameha Highway from Lanikuhana Avenue to Melemanu Woods and for planned developments in Mililani Mauka; and
- A sewage pump station is designated in Mililani near the intersection of Kamehameha Highway with Waikalani Drive

5.6.6 Public Infrastructure Maps

Chapter 4, Article 8, Revised Ordinances of Honolulu, requires the adoption of Public Infrastructure Maps reflecting planned major public infrastructure projects for each of the revised DP areas. Applicable projects must be shown on the map prior to the appropriation of land acquisition or construction funds for the project. Amendments to the Public Infrastructure Map are processed by DPP and approved by the City Council via Resolution. For wastewater related projects, sewage treatment plants and sewage pump stations are identified as public improvements which must be shown on the public infrastructure map, provided the project meets any one or more of the following criteria:

1. It has a significant impact on surrounding land uses or the natural environment;
2. It establishes a new facility;
3. It substantially changes the function of an existing facility;
4. It involves modification (replacement or renovation) of an existing facility which would permit significant new development or redevelopment; or
5. It costs over \$3,000,000 for capital improvements.

A Public Infrastructure Map has been adopted for the Ewa DP area. Public Infrastructure Maps for the Primary Urban Center and Central Oahu DP areas will be adopted after the DP for those regions have been revised. There are two wastewater related projects designated on the Ewa Public Infrastructure Map. The first project is for STP/M at the Honouliuli WWTP. The second project is for mauka expansion of the Honouliuli WWTP.

In addition to the proposed improvements at the Honouliuli WWTP which are already depicted on the Ewa Public Infrastructure Map, improvements are proposed at the Mililani PTF and various in the Study Area. These projects may require inclusion on a Public Infrastructure Map, provided they meet any one of the five aforementioned criteria and assuming a revised DP has been adopted for the region in which they are located. The following is a preliminary list of projects which may require inclusion on a Public Infrastructure Map:

- Pearl City WWPS Relocation and Upgrade;

- Pearl City WWPS Future Upgrade;
- Waipahu WWPS Upgrade;
- Waipahu WWPS Future Upgrade;
- Halawa WWPS Storage Facility;
- Waimalu WWPS Storage Facility;
- Pearl City WWPS Storage Facility;
- Mililani PTF Storage Facility;
- Ewa Beach WWPS Upgrade;
- West Loch Estates Future WWPS Upgrade;
- Waipio WWPS Upgrade;
- Mililani PTF Upgrade; and
- Mililani PTF Future Upgrade.

5.7 City and County of Honolulu Land Use Ordinance and Zoning

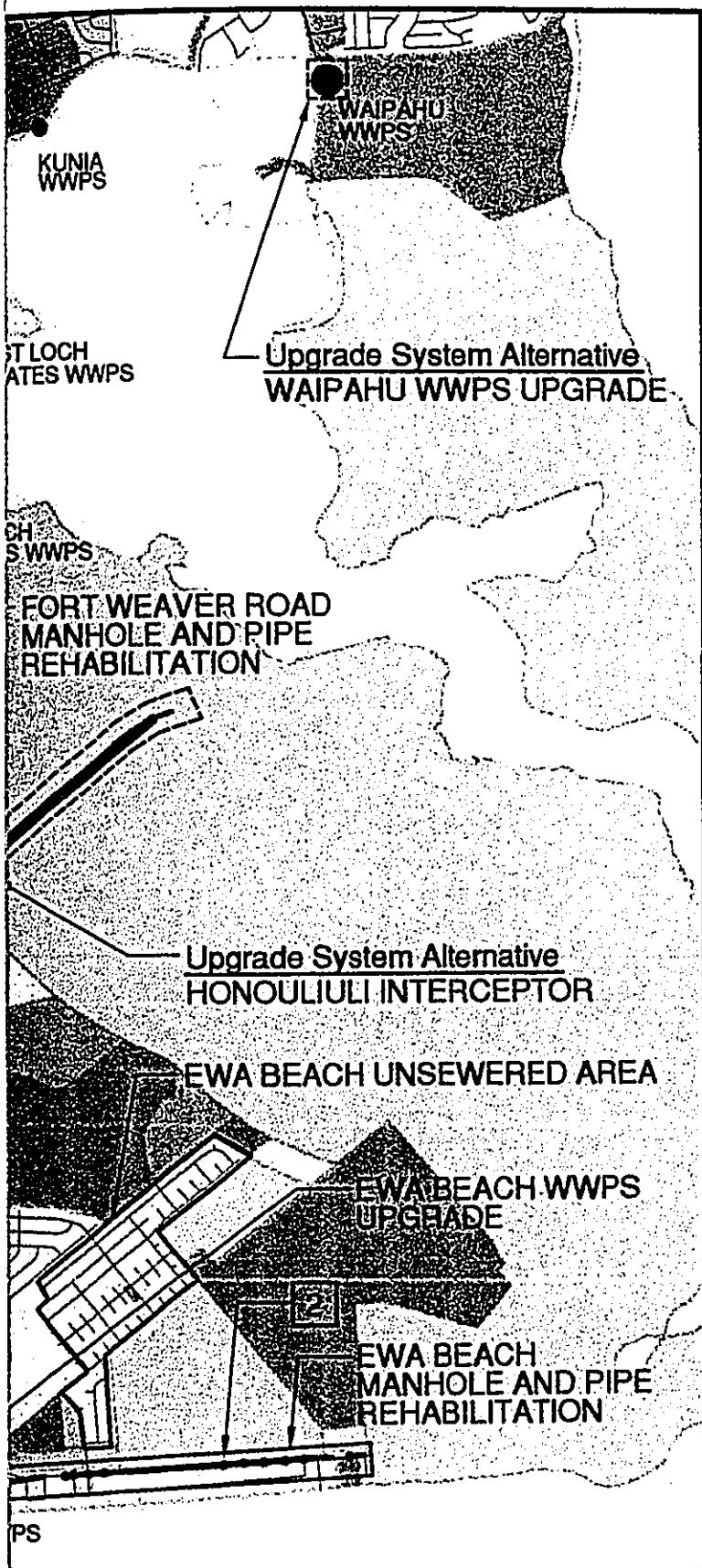
The City and County of Honolulu Land Use Ordinance (LUO) regulates land use in accordance with adopted land use policies, including the Oahu General Plan and Development Plans. The provisions are also referred to as the zoning ordinance. The LUO presents permitted uses and structures, development standards and height controls for each zoning district. The proposed and alternative wastewater facilities improvements are illustrated relative to the zoning designations in Figures 5-6 through 5-9.

The zoning designations for the proposed and alternative wastewater facilities in the Study Area are described in Table 5-1. The proposed and alternative wastewater facility improvements are for City-owned wastewater facilities, therefore, minor Conditional Use Permits are not required. According to DPP, wastewater facilities are permitted uses in all zoning districts, however, if the proposed facility exceeds the affected district's development standards (i.e., height, setbacks, etc.), a Waiver of Requirements would need to be obtained from DPP. As specific plans for individual projects are developed, plans will be reviewed for compliance with the district's development standards.

5.8 City and County of Honolulu Special Management Area

The Coastal Zone Management (CZM) Act contains the general objectives and policies upon which the four counties, including the City and County of Honolulu have structured specific legislation establishing Special Management Areas (SMA). Any "development" within the SMA requires a SMA Use Permit, which is administered by DPP pursuant to Ordinance No. 84-4, 85-105. Approval of a SMA Use Permit is granted by the Honolulu City Council.

According to Chapter 205A-22, HRS, "development" means any of the uses, activities or operations on land or in or under water within the SMA. "Development" does not include repair and maintenance of underground utility lines and minor

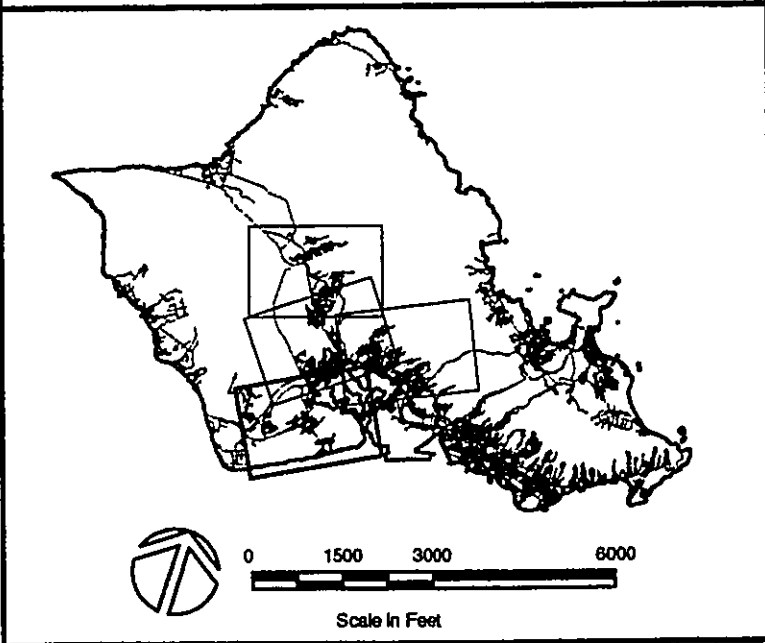


LEGEND

- PRELIMINARY RECOMMENDATION*
- 5 DEFICIENCY ID*
*REFER TO TABLE 3-4
- 1995 INADEQUATE SEWER LINE
- 2020 INADEQUATE SEWER LINE
- MANHOLE DEFICIENCY
- STRUCTURAL DEFICIENCY
- CORROSION DEFICIENCY
- OCEAN OUTFALL TRANSMISSION LINE

ZONING LEGEND

- RESIDENTIAL (R-5, R-7.5)
- APARTMENT (A-1)
- APARTMENT (A-2)
- RESORT
- COMMUNITY BUSINESS (B-1, B-2)
- GENERAL INDUSTRIAL
- WATERFRONT INDUSTRIAL
- AGRICULTURE (AG-1, AG-2)
- BUSINESS MIXED USE (BMX-3)
- PRESERVATION (P-1, P-2)
- MILITARY & FEDERAL

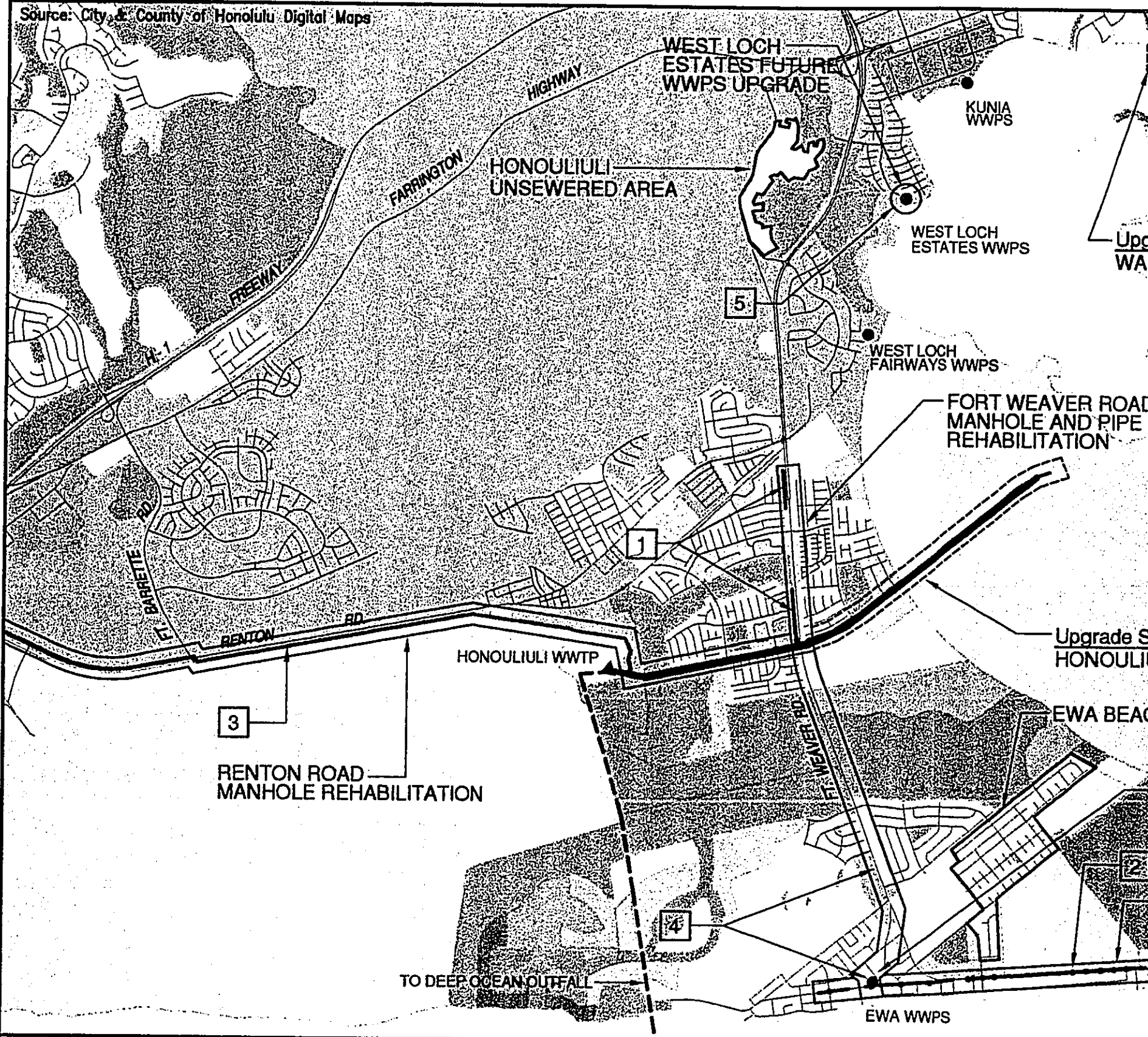


FACILITIES PLAN

MAP
HONOLULI AREA

FIGURE
5-6

Source: City & County of Honolulu Digital Maps










WILSON OKAMOTO & ASSOCIATES, INC.
ENGINEERS • PLANNERS

WEST MAMALA BAY FACILITIES PLAN











ZONING MAP HONOUILIULI AREA

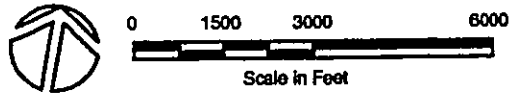
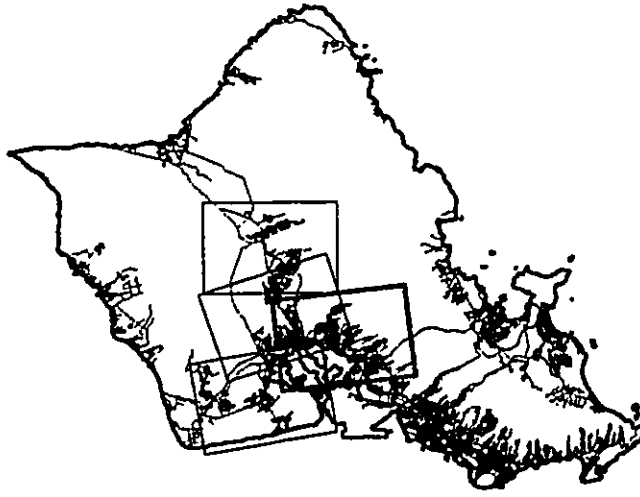
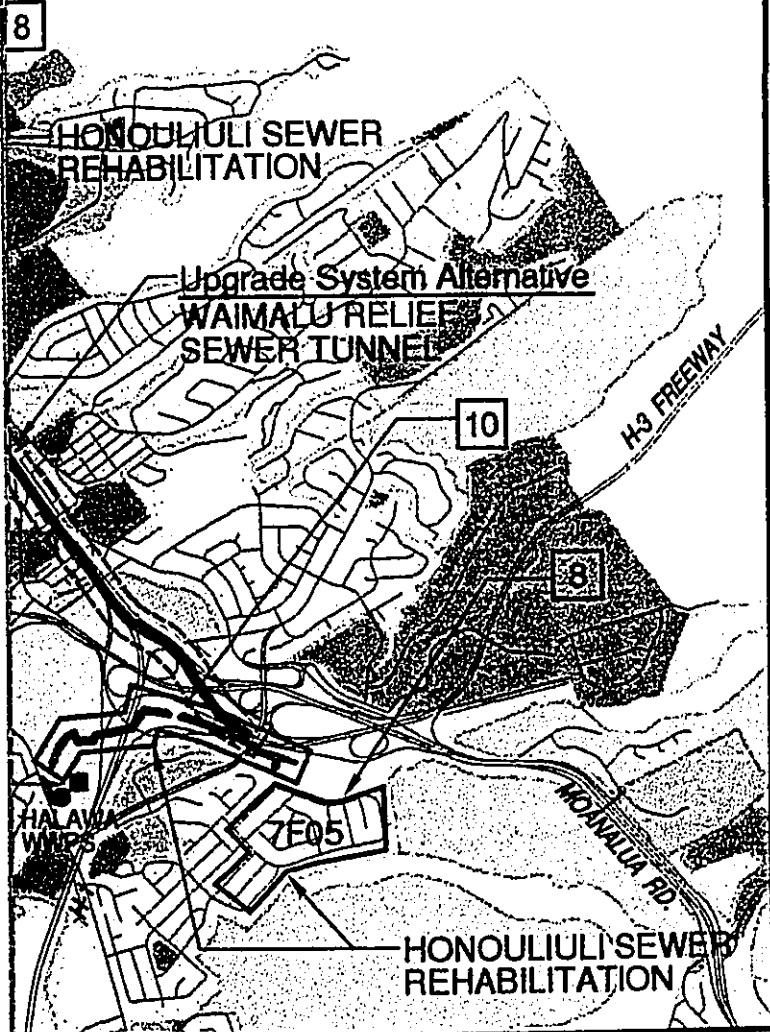
Source: City & County of Honolulu Digital Maps

LEGEND

-  PRELIMINARY RECOMMENDATION*
-  DEFICIENCY ID*
*REFER TO TABLE 3-5
-  1995 INADEQUATE SEWER LINE
-  2020 INADEQUATE SEWER LINE
-  MANHOLE DEFICIENCY
-  STRUCTURAL DEFICIENCY
-  CORROSION DEFICIENCY

ZONING LEGEND

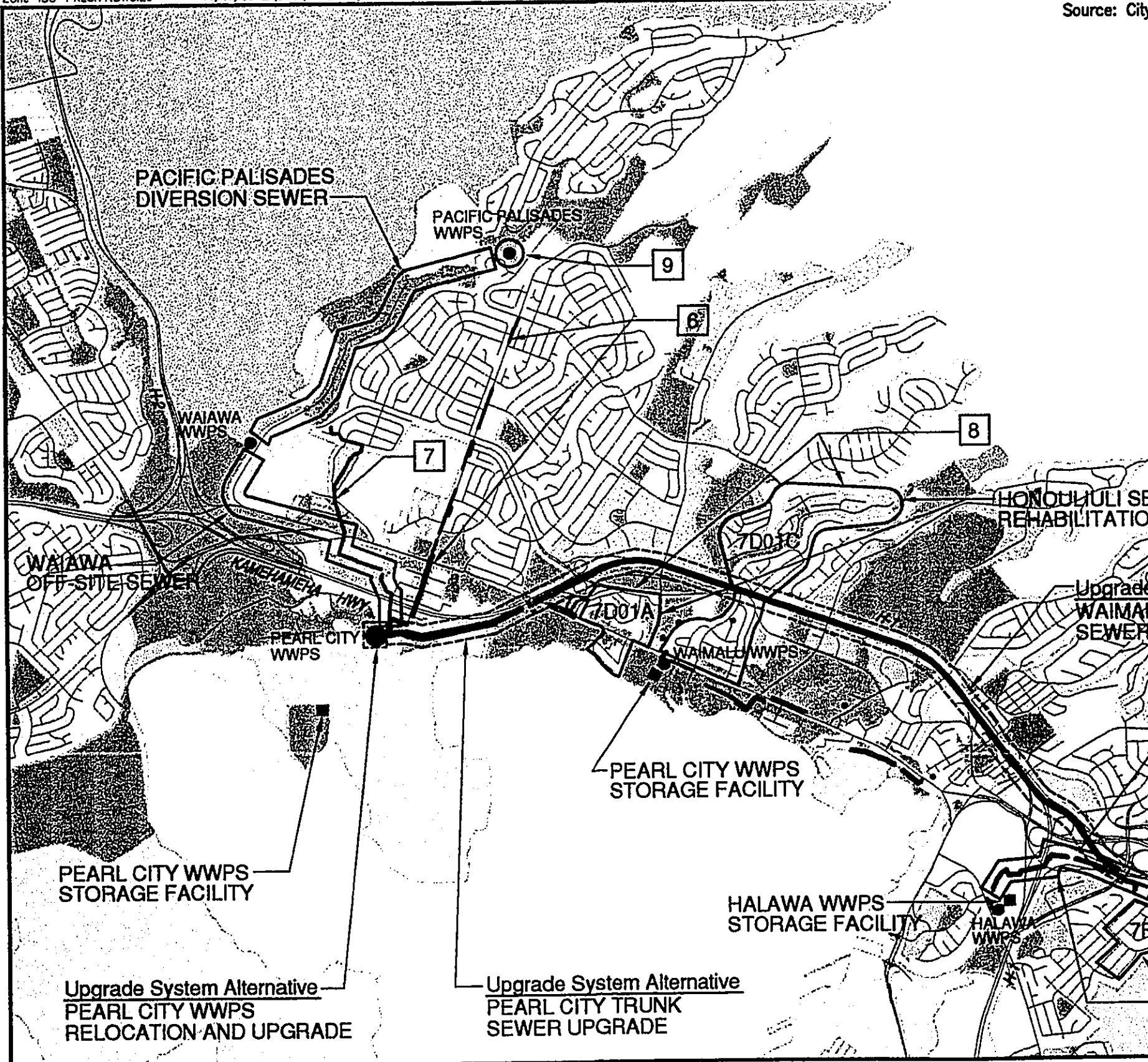
-  RESIDENTIAL (R-5, R-7.5)
-  APARTMENT (A-1)
-  APARTMENT (A-2)
-  COMMUNITY BUSINESS (B-1, B-2)
-  GENERAL INDUSTRIAL
-  INDUSTRIAL MIXED USE (IMX-1)
-  AGRICULTURE (AG-1, AG-2)
-  RESTRICTED PRESERVATION (P-1)
-  GENERAL PRESERVATION (P-2)
-  MILITARY & FEDERAL



FACILITIES PLAN

G MAP
TY AREA

FIGURE
5-7



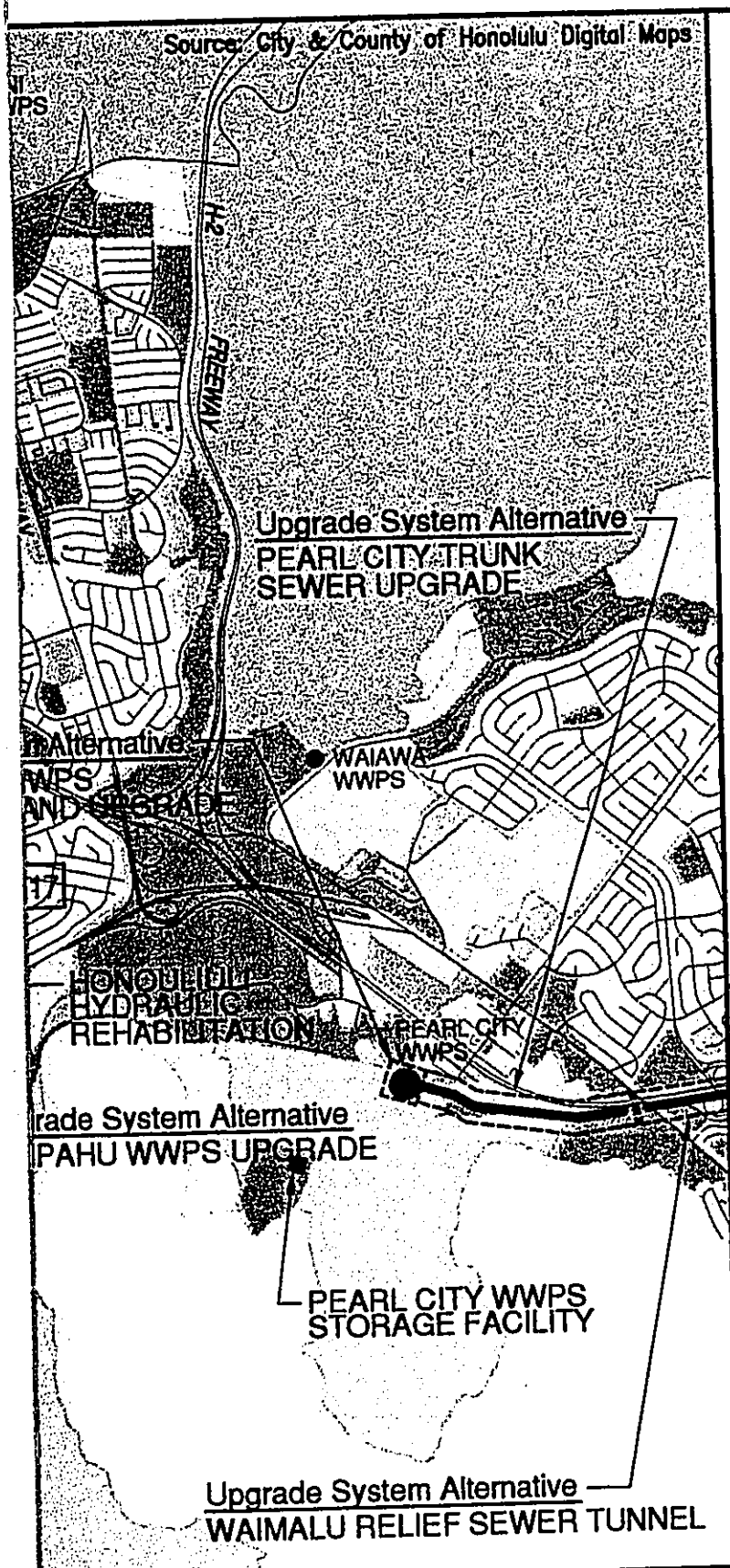
WEST MAMALA BAY FACILITIES PLAN

ZONING MAP
PEARL CITY AREA










WILSON OKAMOTO
& ASSOCIATES, INC.
ENGINEERS • PLANNERS











Source: City & County of Honolulu Digital Maps

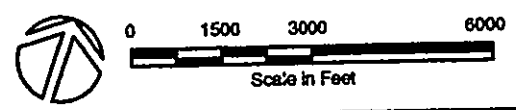
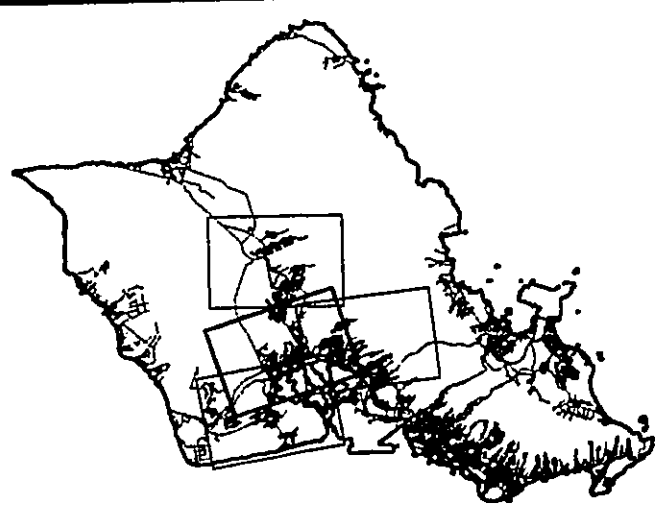


LEGEND

-  PRELIMINARY RECOMMENDATION*
-  DEFICIENCY ID*
*REFER TO TABLE 3-6
-  1995 INADEQUATE SEWER LINE
-  2020 INADEQUATE SEWER LINE
-  MANHOLE DEFICIENCY
-  STRUCTURAL DEFICIENCY
-  CORROSION DEFICIENCY

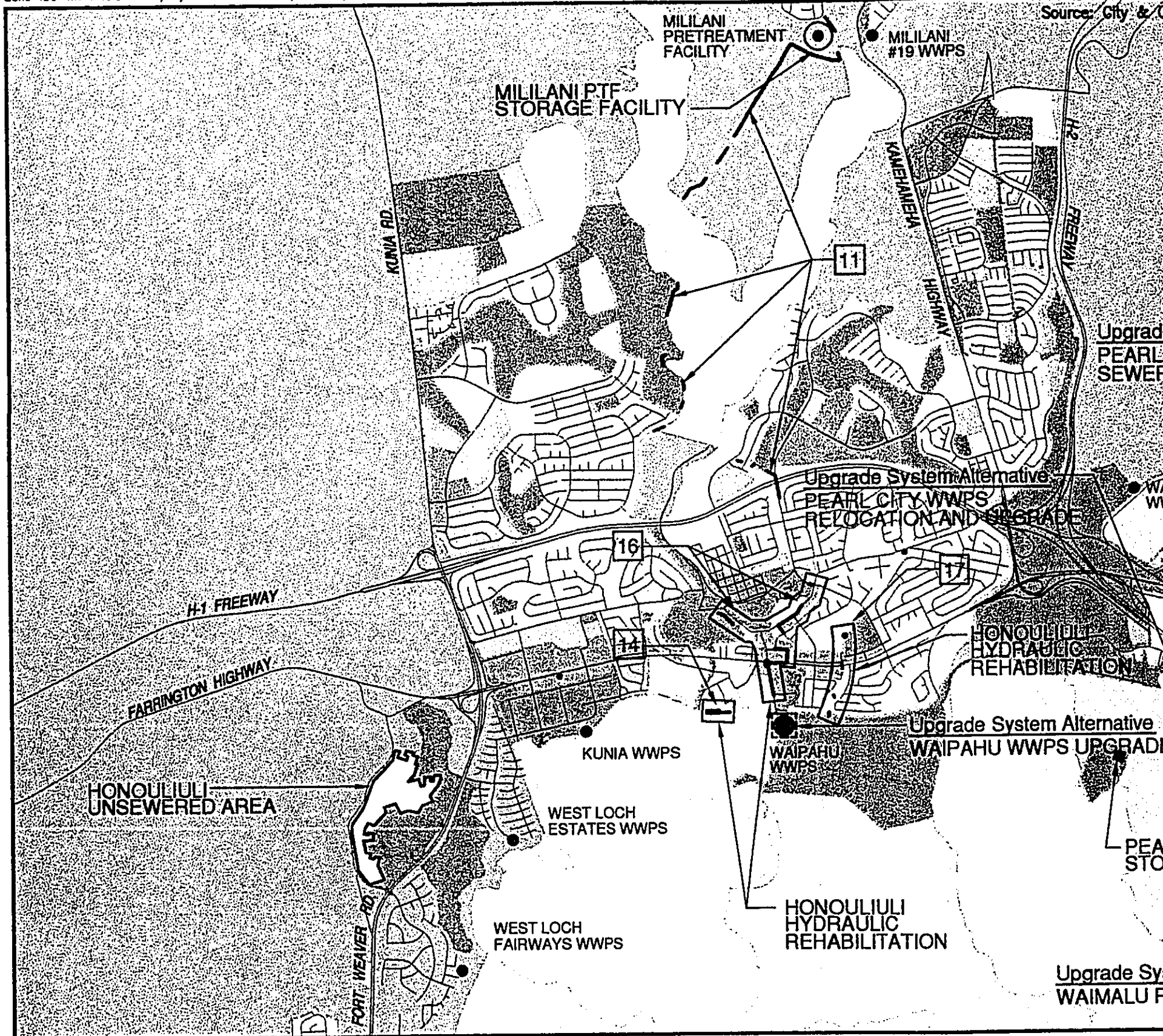
ZONING LEGEND

-  RESIDENTIAL (R-5, R-7.5)
-  APARTMENT (A-1)
-  APARTMENT (A-2)
-  COMMUNITY BUSINESS (B-1, B-2)
-  GENERAL INDUSTRIAL
-  INDUSTRIAL MIXED USE (IMX-1)
-  AGRICULTURE (AG-1, AG-2)
-  RESTRICTED PRESERVATION (P-1)
-  GENERAL PRESERVATION (P-2)
-  MILITARY & FEDERAL



FACILITIES PLAN
MAP
(HU, KUNIA, WAIKELE, AND WAIPIO)

FIGURE
5-8



Source: City & C

WEST MAMALA BAY FACILITIES PLAN



WILSON OKAMOTO & ASSOCIATES, INC.
ENGINEERS • PLANNERS

ZONING MAP WAIPAHU AREA - MAP 1 OF 2 (WAIPAHU, KUNIA, WAIKAELE)

Source: City & County of Honolulu Digital Maps

LEGEND

 PRELIMINARY RECOMMENDATION*

 DEFICIENCY ID*

*REFER TO TABLE 3-8

 1995 INADEQUATE SEWER LINE

 2020 INADEQUATE SEWER LINE

 MANHOLE DEFICIENCY

 STRUCTURAL DEFICIENCY

 CORROSION DEFICIENCY

ZONING LEGEND

 RESIDENTIAL (R-5, R-7.5)


 APARTMENT (A-1)

 APARTMENT (A-2)

 COMMUNITY BUSINESS (B-1, B-2)

 GENERAL INDUSTRIAL

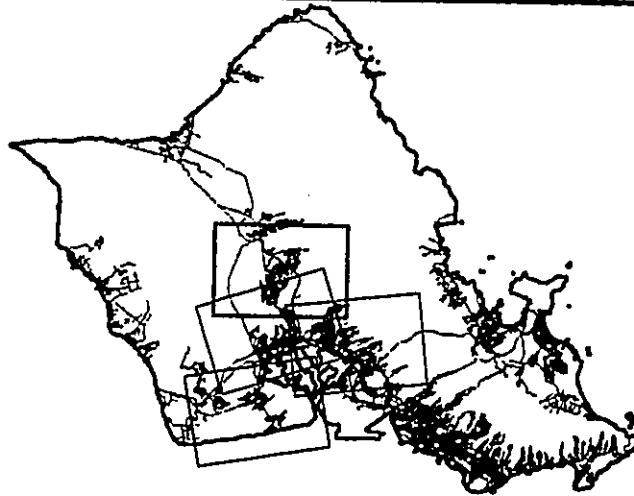
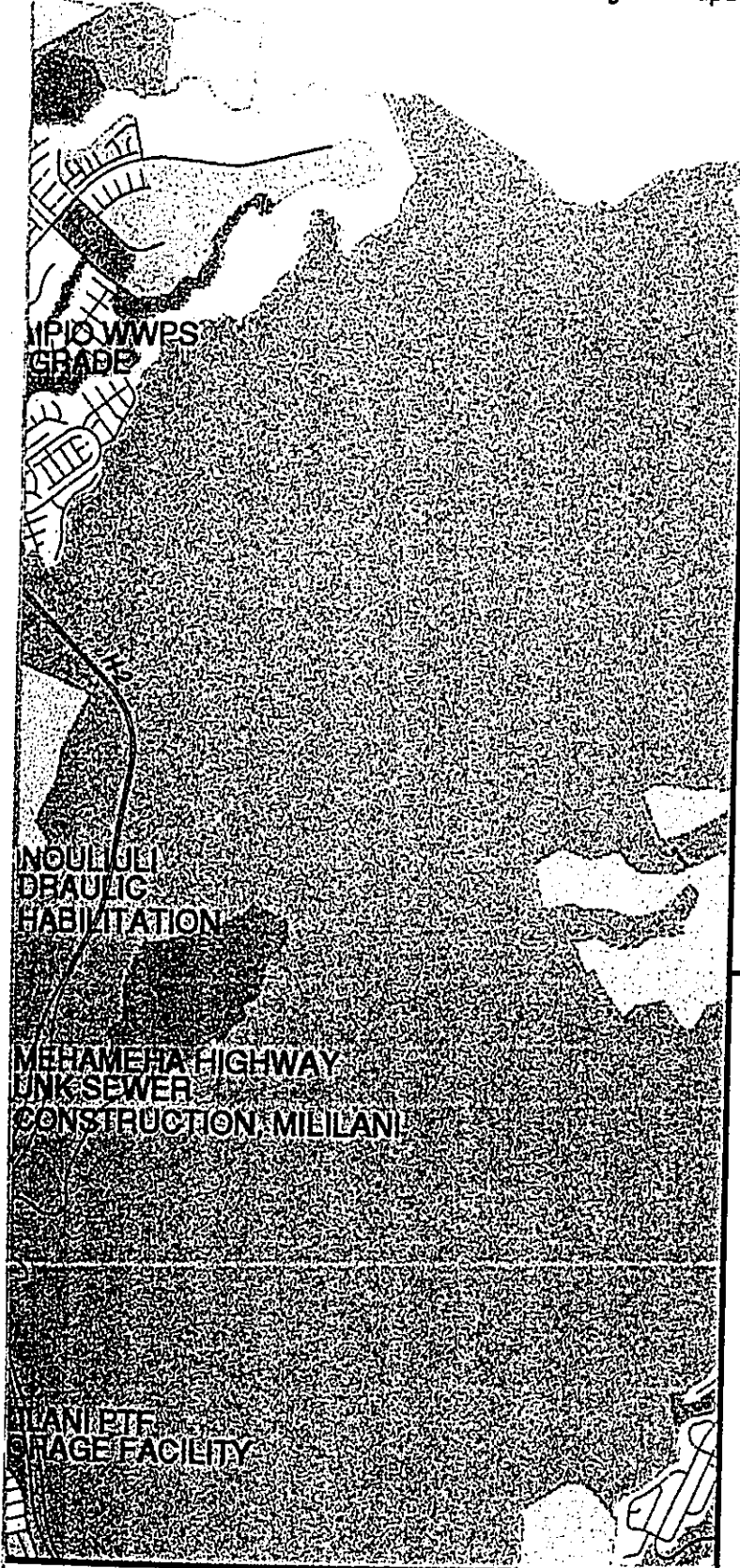
 INDUSTRIAL MIXED USE (IMX-1)

 AGRICULTURE (AG-1, AG-2)

 RESTRICTED PRESERVATION (P-1)

 GENERAL PRESERVATION (P-2)

 MILITARY & FEDERAL



0 1500 3000 6000

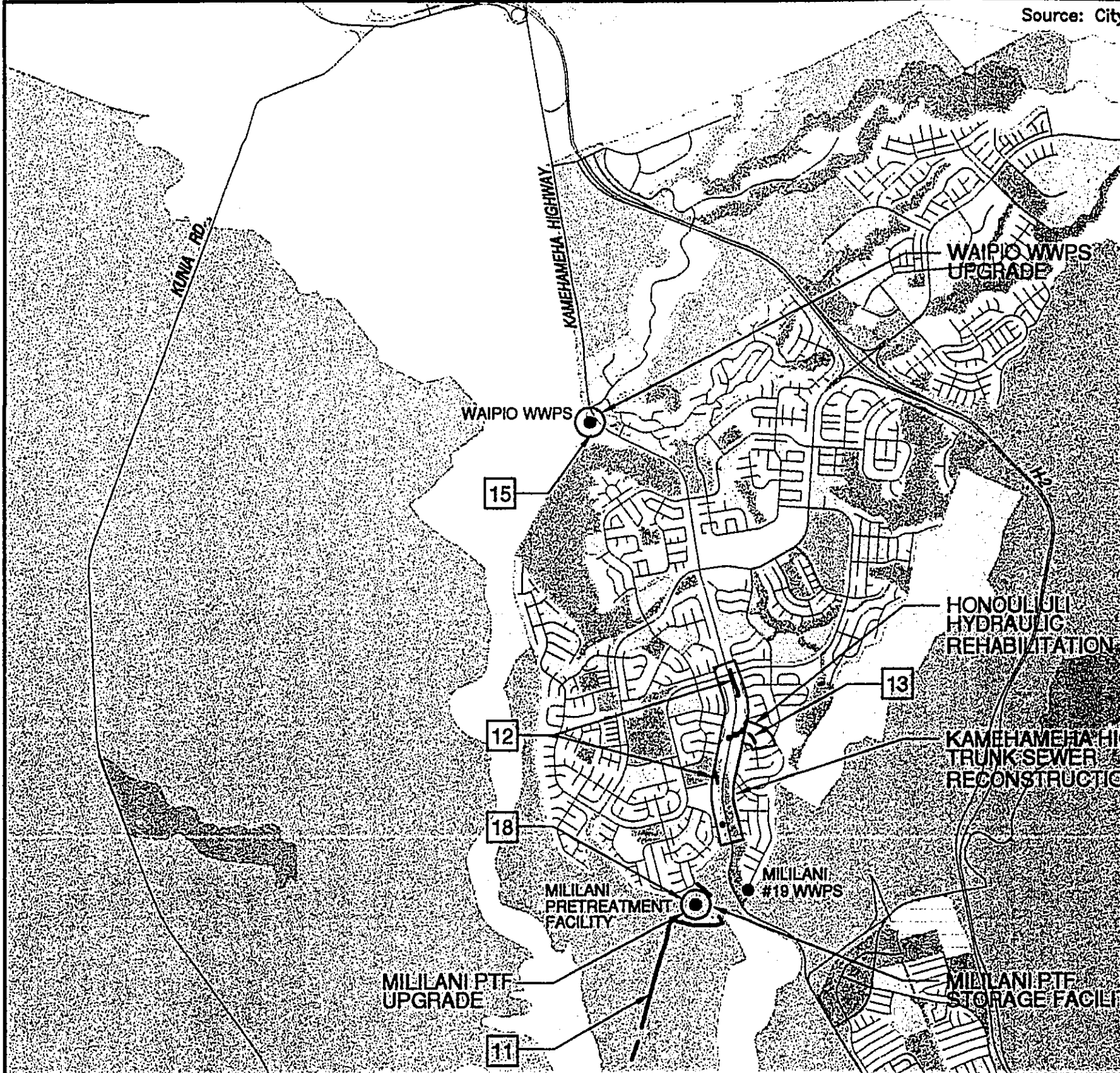
Scale in Feet

FACILITIES PLAN

MAP
MAP 2 OF 2 (MILILANI)

FIGURE

5-9



WEST MAMALA BAY FACILITIES PLAN

ZONING MAP
WAIPAHU AREA - MAP 2 OF 2 (M)

appurtenant structures such as sewer pump stations; and existing structures; and installation of underground utility lines and appurtenant aboveground fixtures less than four feet in height along existing corridors.

The SMA boundary for the Study Area is shown in Figure 5-10.

SMA Guidelines:

(1) All development in the special management area shall be subject to reasonable terms and conditions set forth by the authority in order to ensure:

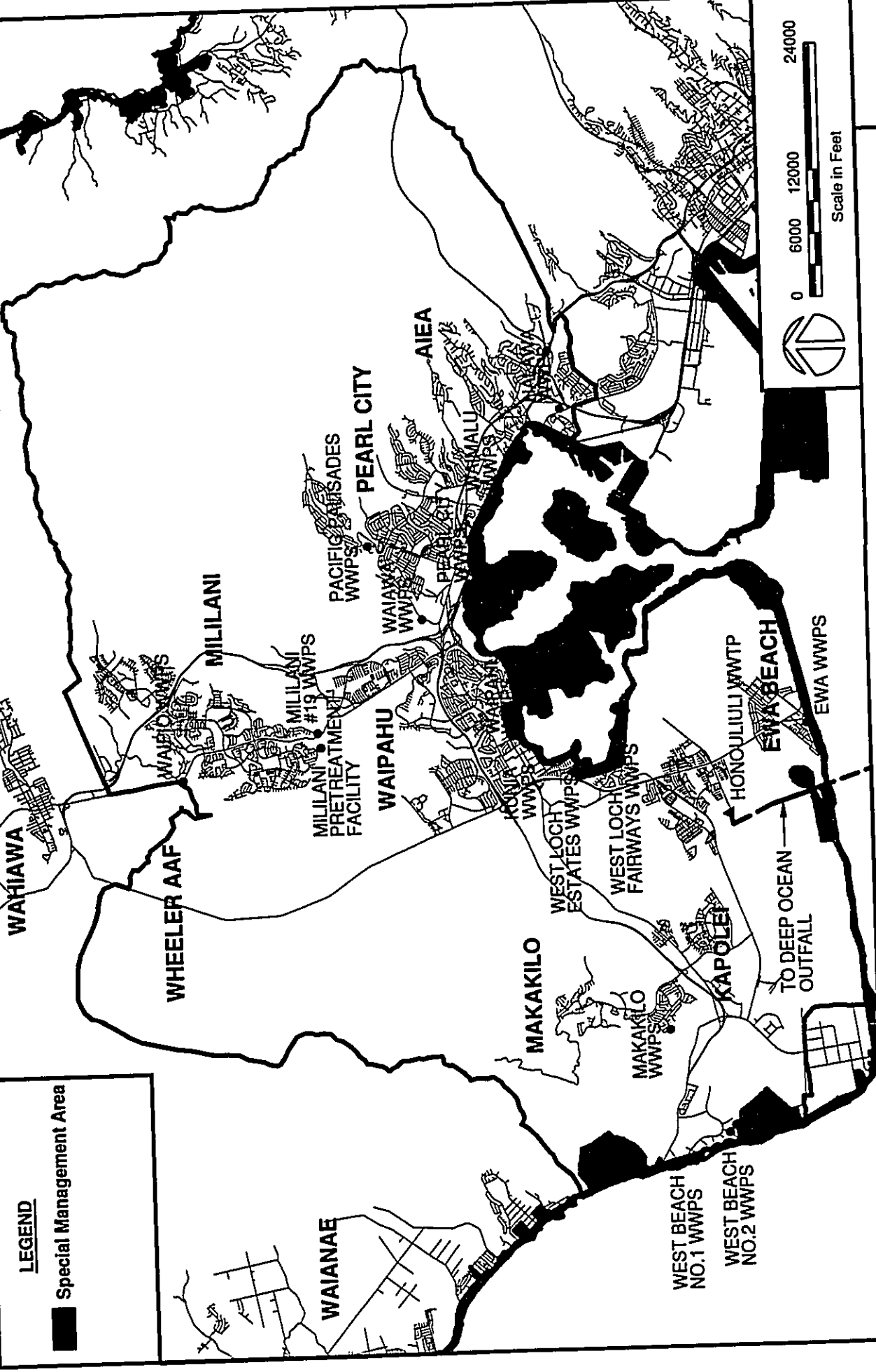
- (B) Adequate and properly located public recreation areas and wildlife preserves are reserved;
- (C) Provisions are made for solid and liquid waste treatment, disposition, and management which will minimize adverse effects upon special management area resources; and
- (D) Alterations to existing land forms and vegetation, except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation, or failure in the event of an earthquake.

(2) No Development shall be approved unless the authority has first found:

- (A) That the development will not have any substantial adverse environmental or ecological effect, except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health, safety, or compelling public interests. Such adverse effects shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself might not have a substantial adverse effect, and the elimination of planning options;
- (B) That the development is consistent with the objectives, policies, and special management area guidelines of this chapter and any guidelines enacted by the legislature; and
- (C) That the development is consistent with the county general plan and zoning. Such a finding of consistency does not preclude concurrent processing where a general plan or zoning amendment may also be required.

(3) The authority shall seek to minimize, where reasonable:

SMA 04/25/00 11:30 L:\WOA\3152-01\GRAPHICS Source: City and County of Honolulu Digital Maps



WEST MAMALA BAY FACILITIES PLAN
SPECIAL MANAGEMENT AREA

FIGURE 5-10

WILSON OKAMOTO & ASSOCIATES, INC.
 ENGINEERS • PLANNERS

- (D) Any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast; and
- (E) Any development which would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.

Table 5-1 indicates the location of the proposed and alternative wastewater facility improvement sites relative to the SMA. The proposed and alternative wastewater facility improvements which would entail "development" within the SMA will require a SMA Use Permit.

5.9 Permits and Approvals

The following is a list of permits and approvals which may be required prior to construction and operation of the proposed improvements:

Federal

U.S. Army Corps of Engineers

- Department of the Army Permit

State of Hawaii

Department of Health

- National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction
- NPDES General Permit for Discharges Associated Construction Activities Dewatering
- Section 401 Water Quality Certification
- Noise Variance Permits

Department of Land and Natural Resources Historic Preservation Division

- Chapter 6E, HRS Historic Preservation, Consultation

Office of Planning

- Coastal Zone Management (CZM) Program Consistency Certification

Department of Transportation

- Permit to Perform Work Within State Highways

City and County of Honolulu

Department of Planning and Permitting

- Environmental Impact Statement
- Development Plan Public Facilities Map Amendment
- Special Management Area (SMA) Use Permit
- Flood Hazard Development Approval
- Building Permit
- Electrical Permit
- Plumbing Permit
- Sidewalk/Driveway Work Permit
- Grading Permit
- Excavation Permit
- Grubbing Permit
- Drainage Plan Approval

Board of Water Supply

- Water and Water System Requirements

Department of Transportation Services

- Street Usage Permit

Other

Utility Companies

- Utility Service Requirements
- Permit Regarding Work on Utility Line

Chapter 6

Alternatives

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

6. ALTERNATIVES

During the Pre-Final Facilities Plan phase, the most feasible conceptual alternatives developed in the Interim Plan phase were assessed toward making preliminary recommendations. The alternatives selected for assessment are capable of eliminating spills, accommodating peak flows from storm events up to the design storm, and meeting all requirements pertaining to effluent and sludge reuse.

As discussed previously, the preliminary recommendations in the Pre-Final Facilities Plan Report are assessed in the Draft and Final EIS as the Proposed Action. Although most of these preliminary recommendations represent a preferred alternative, the preliminary recommendation for the East Interceptor System included two collection system alternatives and a potential third hybrid alternative that are still under consideration. Discussed below are wastewater collection, treatment and disposal system alternatives that were not among the preliminary recommendations and, therefore, are not being considered for implementation. Also discussed is the No Action alternative that was not evaluated in the Facilities Plan.

6.1 No Action Alternative

Under the No Action Alternative, the existing wastewater collection, treatment and disposal system would remain at status quo. Except for capital improvement projects already programmed, there would be no long-term improvements to the regional wastewater system. As such, the existing wastewater system would be unable to accommodate current and projected ADWF and PWWF through 2020. Groundwater infiltration and stormwater inflow into the collection system will continue to worsen, creating hydraulic overloads through the pipes, WWPSs and the WWTP during heavy rainfall periods. In some areas, inadequate capacity of the collection, treatment or disposal systems could prevent approval of new development or expansion of development that would otherwise be allowed. Moreover, the existing collection system will continue to deteriorate structurally due to H₂S corrosion, ground settlement, and aging of materials and equipment. Without recommended improvements, the treatment system, over time, could fail to meet NPDES permit requirements for ocean discharge or standards for reclaimed water or for beneficial use of biosolids. This, in turn, could result in the City's failure to meet requirements of the 309 Consent Decree.

6.2 Collection System

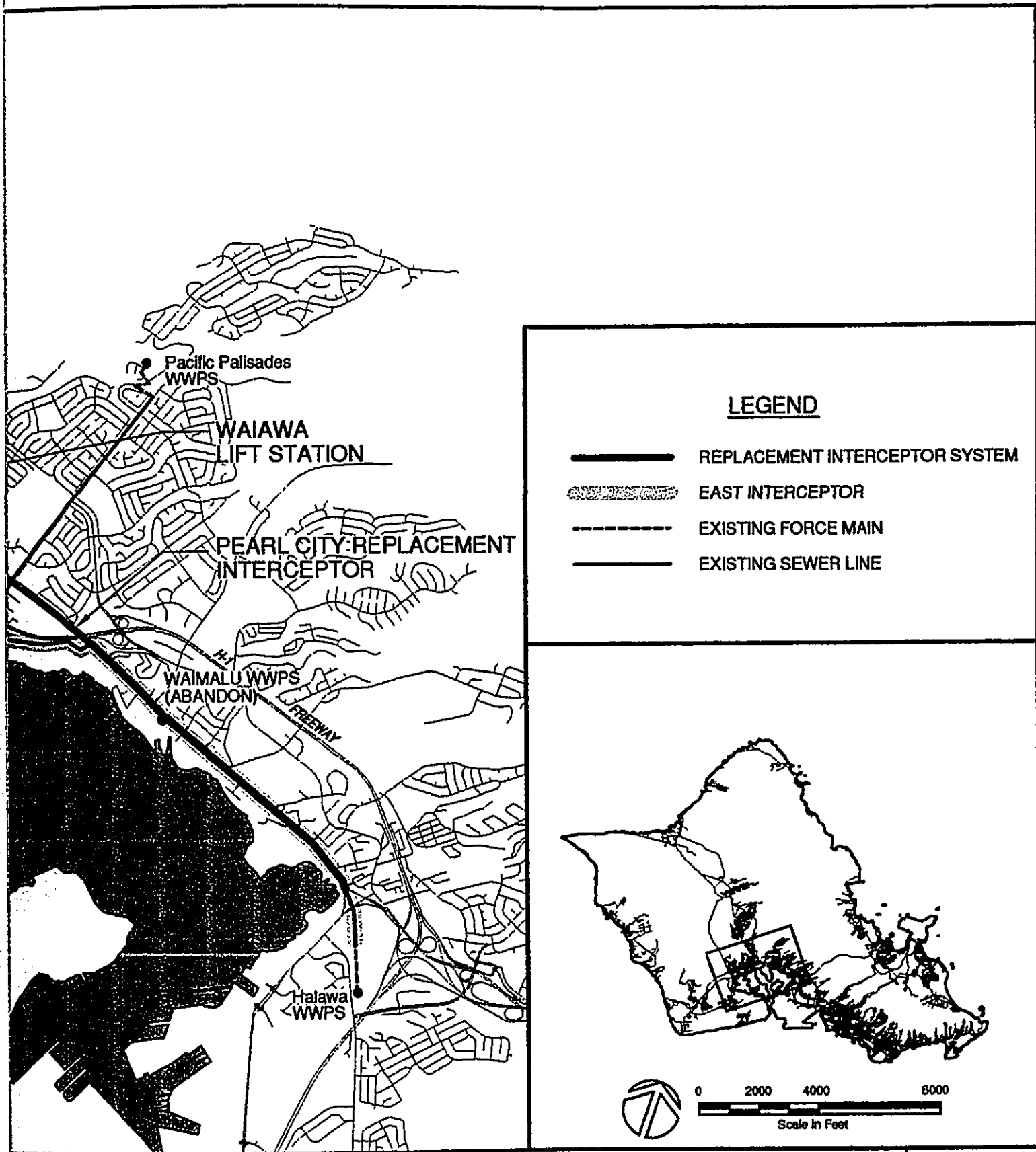
West Interceptor System – The Pre-Final Facilities Plan Report does not evaluate alternatives other than the implementation of the City-approved *Sewer Master Plan for the Regional Interceptor Sewer System for the Developments of the Estate of James Campbell in the Kapolei Area*.

East Interceptor System – In the Pre-Final Facilities Plan Report, the alternative of a new interceptor system following a different route was evaluated and dismissed. This alternative involved the replacement of virtually the entire East Interceptor System along a new route as illustrated in Figure 6-1. The existing East Interceptor System is shown for comparison. Major components of the replacement system are described in Table 6-1 noting which deficiencies are addressed and the cost of the component. The identification numbers for the deficiencies addressed correspond with those in Table 3-1 and Figure 3-2.

The replacement system was developed toward achieving the following objectives:

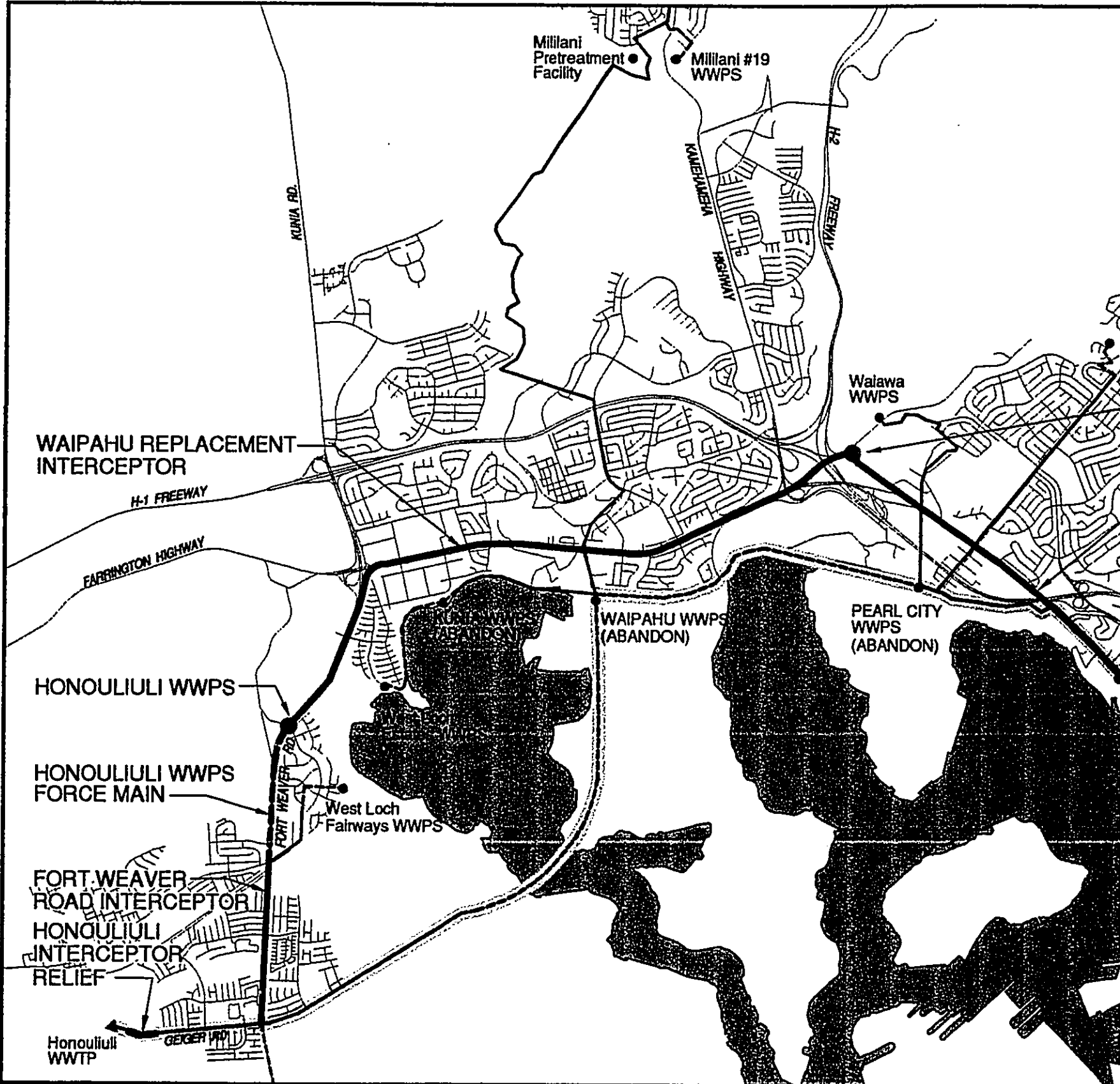
- Addressing all existing and future capacity deficiencies, as well as corrosion and structural deficiencies.
- Aligning the route to follow major traffic corridors to facilitate access to the new interceptor for future repairs. Portions of the existing East Interceptor System snake along smaller roads, through undeveloped coastline areas and beneath West Loch. The replacement route would be more direct, following Kamehameha Highway from Halawa through Waimalu, then Interstate H-1 through Pearl City, Farrington Highway through Waipahu, and Fort Weaver Road to Geiger Road. The last leg along Geiger Road would utilize the existing 84-inch Honouliuli Interceptor leading into Honouliuli WWTP. A 48-inch relief line would parallel a segment of the existing interceptor to relieve projected capacity deficiencies. All other existing lines presently comprising the East Interceptor System would be abandoned. The existing WWPSs would be reconfigured to serve the new Interceptor.
- Avoiding environmentally sensitive wetland areas bordering Pearl Harbor and coastal waters of West Loch which could be affected by leaks or release of untreated wastewater in the event of damage to certain segments of the East Interceptor System.
- Reducing the number of WWPSs and associated force mains required within the system in order to reduce operation and maintenance costs. The replacement system would reduce the number of WWPSs from four to one WWPS and one lift station. Lift stations are similar to WWPSs except that they discharge into an adjoining gravity system without a force main.

This alternative was eliminated from further consideration because of its high cost and years of construction impact along major corridors (see Table 6-2).



Y FACILITIES PLAN
 ENT SYSTEM
 NATIVE
 PTOR SYSTEM

FIGURE
 6-1



WEST MAMALA BAY FACILITIES PLAN
REPLACEMENT SYSTEM
ALTERNATIVE
EAST INTERCEPTOR SYSTEM

**Table 6-1
Replacement System Alternative
East Interceptor System**

Item	Solutions Developed	Deficiency Addressed	Cost
1.	<p>Pearl City Replacement Interceptor Install a replacement interceptor along Kamehameha Highway from Halawa to Waiawa, near the Interstate H-2 Interchange at Waihona Street. From Halawa to the Waimalu WWPS, the interceptor will be a 48-inch line. From there to Puu Poni Street in Pearl City it will be a 60-inch line. The final leg to the Waihona Street will be a 60-inch line. The replacement interceptor will receive flows from all mauka lines that it intercepts while makai lines will be modified to gravity flow to the interceptor without constructing any new WWPS.</p>	<p>1 Waimalu Trunk Sewer The replacement interceptor will replace the function of the existing trunk line, which will be abandoned in-place.</p> <p>2 Waimalu WWPS The replacement interceptor will receive gravity flows from areas presently served by the WWPS, which will be abandoned in-place.</p> <p>3 Waimalu WWPS Force Main The force main will be abandoned in-place, along with the WWPS.</p> <p>4 Pearl City Trunk Sewer The replacement interceptor will replace the function of the existing trunk line, which will be abandoned in-place.</p>	\$61,900,000
2.	<p>Waiawa Lift Station Install a new lift station at the Waihona Street terminus of the aforementioned Pearl City Replacement Interceptor. The station will pump flows received from the replacement interceptor into the Waipahu Replacement Interceptor discussed subsequently.</p>	<p>5 Pearl City WWPS The lift station and Pearl City Replacement Interceptor will replace the function of the Pearl City WWPS, which will be abandoned in-place.</p>	\$24,860,000

Continued

Table 6-1 (continued)
Replacement System Alternative
East Interceptor System

Item	Solutions Developed	Deficiency Addressed	Cost
3.	<p>Waipahu Replacement Interceptor Install a replacement interceptor from the aforementioned Waiawa Lift Station, along Farrington Highway, turning onto Fort Weaver Road to an area near its intersection with the old Fort Weaver Road in Ewa. From the lift station to Depot Road in Waipahu, the interceptor will be a 66-inch line. Continuing along Farrington Highway to Pupukahi Street the interceptor will upsize to a 72-inch line. Thereafter to its terminus on Fort Weaver Road the interceptor will further upsize to an 84-inch line.</p> <p>The replacement interceptor will receive flows from all mauka lines that it intercepts while makai lines will be modified to gravity flow to the interceptor without construction any new WWPS.</p> <p>The replacement interceptor will intercept gravity flows from areas presently served by the Kunia WWPS, which will be abandoned in-place. The force main from the West Loch Estates WWPS will be rerouted to discharge into the replacement interceptor near the West Loch Golf Course.</p>	<p>6 Waipahu WWPS The replacement interceptor will replace the function of the existing WWPS and the dual force mains traversing under West Loch. Both the WWPS and force mains will be abandoned in-place.</p>	<p align="center">\$79,670,000</p>
4.	<p>Honouliuli WWPS Install a new WWPS at the Fort Weaver Road terminus of the aforementioned Waipahu Replacement Interceptor. The station will pump flows received from the aforementioned Waipahu Replacement Interceptor dual 36-inch force mains, which will extend 3,500 feet down Fort Weaver Road to discharge into the new Fort Weaver Road Interceptor, discussed subsequently, near the Ewa Villages Golf Course.</p>	<p>7 Honouliuli Interceptor The WWPS and force mains, together with the Fort Weaver Road Interceptor discussed subsequently, will replace the function of the segment of the Honouliuli Interceptor extending from the terminus of the Waipahu WWPS dual force mains to Geiger Road. This segment of the Honouliuli Interceptor will be abandoned in-place.</p>	<p align="center">\$40,300,000</p>
5.	<p>Fort Weaver Road Interceptor Install a new 84-inch interceptor along Fort Weaver Road from the terminus of the aforementioned Honouliuli WWPS dual force mains to Geiger Road. The interceptor will discharge into the existing 84-inch Honouliuli Interceptor and the Honouliuli Interceptor Relief Sewer discussed subsequently.</p>		<p align="center">\$22,310,000</p>

Continued

Table 6-1 (continued)
Replacement System Alternative
East Interceptor System

Item	Solutions Developed	Deficiency Addressed	Cost
6.	Honouliuli Trunk Sewer Relief Construct a new 48-inch relief sewer paralleling an 870-foot segment of the existing 84-inch Honouliuli Interceptor along Geiger Road between manholes HN-01-EW-0001 and HN-01-EW-0003	<div style="border: 1px solid black; display: inline-block; padding: 2px;">7</div> Honouliuli Interceptor The relief line will address the capacity deficiency in the segment of the interceptor on Geiger Road.	\$1,340,000
		<u>TOTAL =</u>	\$230,380,000

**Table 6-2
Alternatives Assessment
East Interceptor System**

Alternative	Operation & Maintenance	Reliability	Construction Impacts	Constructability	Community Acceptance	Estimated Construction Cost
Upgrade System	Fair	Fair	Poor	Poor	Fair	\$104,750,000
Replace System	Good	Fair	Poor	Poor	Poor	\$230,380,000
Flow Equalization Within System	Poor	Poor	Fair	Good	Poor	\$87,340,000

Isolated System Deficiencies – The Pre-Final Facilities Plan Report does not evaluate alternatives for improvements addressing current isolated system deficiencies. The preliminary recommendations for these deficiencies were developed through the City's I/I Plan.

The Pre-Final Facilities Plan Report assessed alternatives for addressing future deficiencies based on projected flows through 2020. The selected recommendations were based on engineering design considerations, including cost-effectiveness, ease of construction and functional relationship within the broader system. Alternatives considered included:

- **Relief Replacement Lines** - Typically, when a sewerline becomes inadequate due to an increase in flow demand on that sewerline or structural deficiencies resulting from corrosion or other damage, a parallel relief or replacement sewerline is the quickest and most economically feasible solution for the line. Generally, most of the hydraulically inadequate collection areas would be relieved by installing a relief sewerline. Most structurally deficient lines would either be replaced with a new line or rehabilitated in place;
- **Flow Diversion** - Flow diversion involves the construction of a new line to reroute flows and bypass inadequate sewerlines or WWPSs. For inadequate sewer lines, the function is similar to a relief line but implies a different route, as opposed to a parallel line;
- **Flow Equalization** - Flow equalization is achieved by capturing and temporarily storing PWWF, particularly during storms, upstream of collection lines or WWPSs with inadequate capacity to accommodate such flows. The captured flows are then fed back into the system at a rate that can be accommodated. Flow equalization could be provided within the collection system (on-line) or outside the system (off-line) in a reservoir;
- **WWPS Upgrade or Replacement** - WWPSs with inadequate capacity can be upgraded by installing higher-capacity equipment or replaced entirely if the existing equipment is near the end of its useful life. Replacement at a different site may also be appropriate if there are persistent site-related problems such as flooding, which may affect WWPSs because they are located in low-lying areas to collect and elevate flows; and
- **Future Development** - Some deficiencies in the collection system can be addressed by planned future developments for which developer-financed improvements of the collection system are required by the City.

Unsewered Areas - The preliminary recommendations for the two unsewered areas in Honouliuli and Ewa Beach were selected based on an assessment of the following alternatives:

- Deferral - Deferral of any action is appropriate if future development in the vicinity of an unsewered area will extend the collection system to a point where cost savings or other advantages would be significantly greater than for the other alternatives;
- Convert to Individual Septic Tank/Leach Field System - This type of system is allowed by the State DOH where there is no sewer system available for connection. Each landowner would be required to install such a system at his or her expense;
- Convert to Individual Low Pressure System - This system requires each property to have an individual pump with a pressurized outflow line that connects to a pressurized collection system. The pressurized collection system would elevate flows to discharge into an existing gravity collection system serving the area. An Improvement District (ID) would be established to commit property owners to contribute toward the cost of developing the common pressurized collection system, which may include the individual property pumps and connecting lines;
- Gravity Collection System and WWPSs - This system would connect the unsewered area to an existing collection system. This would be achieved by installing a system of sewers serving each property to a WWPS that would pump the wastewater to an elevation where a gravity line could convey the flow into the existing system. Similar to the "Convert to Individual Low Pressure System" alternative, IDs are typically established in which each property owner is committed to contributing toward the cost of developing the sewer mains, pump station, force main and gravity line to the existing collection system. Each property owner would also be responsible for the sewer line leading from his or her property into the common sewer main; and
- Gravity Collection System and Package WWTP - This type of system is allowed by the State DOH where there is no sewer system available for connection. It is similar to the preceding alternative except that the common sewer line would lead into a self-contained "package" WWTP instead of a WWPS. The package WWTP would treat and dispose of the treated wastewater, typically in a leach field. An ID would be established to commit property owners to the common sewer system and WWTP. Each property owner would be responsible for the sewer line leading from his or her property to the common sewer main.

6.3 Liquid Treatment

To address PWWF deficiencies in plant capacity, the alternatives of plant expansion, flow equalization in the collection system, and flow equalization at the plant were considered. Of these three, plant expansion is the preliminary recommendation as it is uncertain to what extent flow equalization within the collection system will be pursued and how that could address projected PWWF at the plant. Flow equalization at the plant may be too limited to reliably reduce the peak flows and could cost more than increasing the plant capacity. Other concerns such as odors associated with open basins and clean up makes this option less attractive.

For plant expansion, the capacity of the influent pump station, associated force mains, grit/preaeration inlet channel, primary clarifiers, and effluent discharge lines would be increased to meet the year 2020 PWWF. Plant expansion requirements may be reduced if flow equalization is provided. Adequate redundancy will also be incorporated to facilitate maintenance of unit processes, particularly at the grit/preaeration inlet channel.

The appropriate level of liquid treatment was also assessed. These treatment levels included chemically-enhanced primary treatment, expansion of secondary treatment, advanced (R-1) treatment for reuse purposes, and disinfection for ocean discharge as well as the "minimal action" alternative, which would maintain the current treatment level. Of these, the preliminary recommendation is minimal action because the 301(h) waiver to allow continued disposal of primary treatment effluent, is expected to be renewed and the existing liquid treatment level will likely be sufficient to meet all anticipated requirements of the forthcoming NPDES permit. Moreover, additional costs associated with increasing the treatment level would be minimized.

6.4 Solids Treatment and Disposal

Five alternatives identified during the Interim Plan phase were evaluated to address solids treatment and disposal requirements. They were evaluated by combining solids disposal alternatives with solids treatment alternatives.

- Thermal Conditioning/Dewatering and Incineration;
- Thermal Conditioning/Dewatering and Reuse;
- High-Solids Centrifuge Raw Sludge Dewatering and Incineration;
- High-Solids Centrifuge Raw Sludge Dewatering and Reuse; and
- Anaerobic Digestion/Dewatering and Reuse.

Anaerobic Digestion/Dewatering and Reuse is the preliminary recommendation because it meets all anticipated permit and legal requirements and has flexibility for various biosolids reuse applications. Implementation of a new solids treatment process is appropriate because the existing solids treatment facilities are at the end of their service life. Costs associated with incorporating this new solids treatment process are comparable to expanding the existing thermal conditioning system.

6.5 Effluent Disposal and Reuse

An effluent pump station is recommended to address the PWWF capacity deficiency of the ocean outfall. Six alternatives to address the low flow issue were assessed:

- Flow equalization in collection system;
- Flow equalization of raw influent at Honouliuli WWTP;
- Flow equalization of primary effluent at Honouliuli WWTP;
- Periodic flushing of outfall;
- Plugging of diffuser ports; and
- Parallel outfall.

All alternatives except the Parallel Outfall require construction of an effluent pump station to accommodate future peak flows. It is necessary to accommodate future peak flows including any bypassed secondary effluent and/or reuse flows to the outfall. To address the existing low flow issue, the temporary plugging and installation of check valves on the diffuser ports is the preliminary recommendation until sufficient velocities in the outfall can be sustained. By the year 2020, all diffuser ports will be open.

For effluent reuse, the Ewa Water Recycling Facility project is assumed to be sufficient to meet the 309 Consent Decree reuse requirements through the planning horizon. If additional demand is identified in the future, the Ewa Water Recycling Facility will likely be expanded.

6.6 Alternative Wastewater Management Scenarios

In a second assessment step capital costs and operation and maintenance expenses for the individual wastewater treatment and disposal components were estimated (see Tables 6-3). These components were combined to form five complete alternative wastewater treatment and disposal scenarios. Each scenario includes an improved on-site laboratory, odor control program, effluent pump station, and the plugging of diffuser ports of the outfall. The potential for effluent and

biosolids reuse to meet consent decree requirements were also considered for each scenario.

Scenario	Capital Cost (In \$1,000's)	Annualized Capital Cost (In \$1,000's/Yr.)	Annual O&M Cost (In \$1,000's/Yr.)	Total Annual Cost (In \$1,000's/Yr.)
1. Minimum Improvements	100,490	9,480	8,590	18,070
2. Moderate Upgrade	101,890	9,610	7,990	17,600
3. Full Secondary Treatment	200,310	18,900	10,240	29,140
4. Maximum Beneficial Use	151,160	14,260	9,010	23,270
5. Maximum Improvements	212,590	20,060	10,540	30,600

Source: Brown and Caldwell Consultants

- **Minimum Improvements** – This alternative scenario focuses only on expanding capacity to meet year 2020 flows and to satisfy legal requirements. The existing liquid and solids treatment processes would be unchanged;
- **Moderate Upgrade** – Anaerobic digestion would replace the thermal conditioning process. The liquid treatment processes would be expanded only to meet year 2020 flows;
- **Full Secondary Treatment** – Secondary treatment would be expanded to 51 mgd. Anaerobic digestion would replace thermal conditioning. Effluent disinfection for up to 51 mgd would be incorporated;
- **Maximum Beneficial Use** – An additional 12-mgd of secondary and R-1 treatment capacity would be provided to expand the total effluent reuse capacity to 25 mgd. Anaerobic digestion would replace thermal conditioning. Effluent disinfection for up to 51 mgd would be incorporated; and
- **Maximum Improvements** – This alternative combines the features of the "Full Secondary Treatment" and "Maximum Beneficial Use" scenarios.

Each alternative scenario was assessed based on both cost and non-cost criteria. In general, costs increase with the level of treatment and amount of reuse. While in turn, provide additional benefits relative to the non-cost criteria. Specific non-cost criteria selected for the assessment of alternative scenarios included conformance with constraints, ease of operation, protection of the environment and public health, and recycling level. Each scenario was rated using weighted cost and non-cost criteria. Each scenario was rated with respect to the criterion and selected weighting factors. The "Moderate Upgrade" scenario received the highest score and is the preliminary recommendation.

Chapter 7

Irretrievable and Irreversible Commitments of Resources

7. IRRETRIEVABLE AND IRREVERSIBLE COMMITMENTS OF RESOURCES

In the short-term, construction of the proposed and alternative wastewater facility improvements will require an irreversible and irretrievable commitment of a number of resources, including land, capital, construction materials, manpower, energy, fuel, and water. Financial, material and manpower resources will also be irretrievably committed to the planning and design of the improvements.

There will be a long-term commitment to the use of land for wastewater facilities. Most improvements, however, would involve land already committed to wastewater facilities, including existing sewerline corridors, pump stations and the Honouliuli WWTP. New commitment of lands to wastewater facilities would be required for the following:

1. The Waimalu Relief Sewerline Alternative, which would parallel Interstate H-1 from Halawa to Waimalu;
2. The proposed relocation of the Pearl City WWPS to a nearby site on Lehua Avenue owned by the U.S. Navy;
3. The Halawa WWPS Equalization Facility Alternative beneath a portion of the Aloha Stadium parking lot;
4. The Waimalu WWPS Equalization Facility Alternative beneath a portion of Blaisdell Park; and
5. A portion of the Pacific Palisades Diversion Sewer.

In addition, the Pearl City WWPS Equalization Facility Alternative at the former Pearl City WWTP would re-commit land for a wastewater facility.

Effective operation of the various proposed and alternative wastewater facility improvements will also require irreversible and irretrievable commitments of labor, materials and resources (consumption of potable water and fuel). Certain materials, however, may be derived from renewable sources. Also, substitution of renewable non-fossil derived fuel to power the facilities may be realized in the future.

Once committed and used for the project, financial resources used for construction and operation of the proposed and alternative wastewater facility improvements will not be available for other uses. The extent of irreversible and irretrievable financial commitment towards capital expenses will increase steadily with time as the value of the facilities decline due to the effects of age and depreciation. The funds used for operation and maintenance of the facilities are largely irreversible and irretrievable upon expenditure.

In the long-term, the impact of undertaking these irreversible and irretrievable commitments of resources should be weighed against the environmental and public health benefits to be derived from the improved operation of the West Mamala Bay wastewater system.

Chapter 8

**Relationship Between Local and Short-Term
Uses of Humanity's Environment and the
Maintenance of Long-Term Productivity**

8. RELATIONSHIP BETWEEN LOCAL AND SHORT-TERM USES OF HUMANITY'S ENVIRONMENT AND THE MAINTENANCE OF LONG-TERM PRODUCTIVITY

8.1 Short-Term Uses

The proposed project improvements will involve short-term uses of the environment during the construction phase. These uses will have both positive and negative impacts. Construction activities associated with the proposed project will create temporary adverse impacts, including increased noise, airborne dust, traffic disruptions, and loss of on-street parking in the vicinities of the project improvements.

In the short-term, the project will also confer some positive benefits in the local area. Direct economic benefits will result from construction expenditures both through the purchase of materials from local suppliers and through the employment of local labor. Indirect economic impacts may include benefits to local retail businesses resulting from construction activities.

8.2 Long-Term Productivity

Benefits of the proposed action associated with long-term maintenance and enhancement of the environment include improvements to coastal water quality, ecosystems, public health, and safety. The provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses to streams and coastal waters during storms. Flows that would otherwise potentially be overflows would minimally receive primary treatment at the Honouliuli WWTP prior to disposal through the Barbers Point Deep Ocean Outfall. Moreover, at least 13 mgd of flows received at the plant would be treated to the secondary level and reused. The proposed connection of two unsewered areas to the collection system will reduce the probability of spills and overflows from failing individual wastewater systems and potentially improve coastal water quality by eliminating potential non-point sources of nutrients in coastal waters.

The proposed action involves a long-term commitment of land for the wastewater facility improvements. The siting of the proposed and alternative wastewater system improvements would constitute a constraint on the full and unencumbered use of the impacted land. Most improvements, however, would involve land already committed to wastewater facilities, including existing sewerline corridors, WWPSs and the Honouliuli WWTP. New commitment of lands to wastewater facilities would be required for the following:

1. The Waimalu Relief Sewerline Alternative, which would parallel Interstate H-1 from Halawa to Waimalu;

2. The proposed relocation of the Pearl City WWPS to a nearby site on Lehua Avenue owned by the U.S. Navy;
3. The Halawa WWPS Equalization Facility Alternative beneath a portion of the Aloha Stadium parking lot;
4. The Waimalu WWPS Equalization Facility Alternative beneath a portion of Blaisdell Park; and
5. A portion of the Pacific Palisades Diversion Sewer.

In addition, the Pearl City WWPS Equalization Facility Alternative at the former Pearl City WWTP would re-commit land for a wastewater facility.

A substantial amount of financial resources would be required to construct, operate and maintain the proposed facility improvements. The funds would be drawn from a generally limited pool of assessment and operating fees. Funds expended for the proposed action would potentially reduce funds available for other wastewater improvement projects on Oahu.

2. The proposed relocation of the Pearl City WWPS to a nearby site on Lehua Avenue owned by the U.S. Navy;
3. The Halawa WWPS Equalization Facility Alternative beneath a portion of the Aloha Stadium parking lot;
4. The Waimalu WWPS Equalization Facility Alternative beneath a portion of Blaisdell Park; and
5. A portion of the Pacific Palisades Diversion Sewer.

In addition, the Pearl City WWPS Equalization Facility Alternative at the former Pearl City WWTP would re-commit land for a wastewater facility.

A substantial amount of financial resources would be required to construct, operate and maintain the proposed facility improvements. The funds would be drawn from a generally limited pool of assessment and operating fees. Funds expended for the proposed action would potentially reduce funds available for other wastewater improvement projects on Oahu.

Chapter 9

Probable Adverse Environmental Effects Which Cannot Be Avoided

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

9. PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

Adverse impacts can be defined as short- and long-term effects relative to the construction and implementation of a specific use. Short-term impacts are usually construction-related which will occur during the course of construction and cease upon completion of the project. Long-term impacts generally result from the implementation of the proposed project.

9.1 Short-Term Effects

Unavoidable short-term impacts, despite mitigation efforts, include those related to noise and air quality, and traffic inconveniences. These impacts will be greatest during installation and rehabilitation of sewer lines in residential areas and along major roadway corridors within the business districts.

Noise: Construction noise will be unavoidable during the duration of the respective project construction periods. Short-term increases in noise levels will result from construction activities, vehicles and equipment. The use of muffled equipment and restrictions on construction hours, as well as adherence to State DOH regulations on noise mitigation, will minimize construction and traffic-related noise. Depending on the construction periods, a noise permit or variance will be required from the State DOH where noise levels are anticipated to exceed allowable limits.

Air Quality: Construction-related air quality impacts would result from site preparation and earth moving activities, the movement of construction vehicles on unpaved areas of the site, emissions from construction equipment, and construction of structures. The construction contractor(s) is responsible for complying with State DOH regulations which prohibit visible dust emissions at property boundaries. Nevertheless, the presence of nearby residences and buildings in the vicinity of most of the affected project sites suggest that open-air areas and naturally ventilated structures could be impacted by dust in spite of compliance with these regulations.

Traffic: During construction, traffic along the respective corridors proposed for rehabilitation or installation of new sewer lines will be disrupted for the period of the construction activity. Residents and businesses in the immediate work area may be inconvenienced by restrictions to driveway access and street frontage usage. To avoid potential traffic congestion, movement of construction vehicles to and from the project site and any lane closures along major traffic corridors will be restricted during the morning and afternoon peak traffic periods. The increased traffic from construction-related vehicles should be insignificant during off-peak traffic periods, but may cause inconveniences to residents, businesses and motorists in the vicinity. Flaggers and/or off-duty police officers will be used, as may be needed, during significant phases of construction to control traffic and pedestrian flow.

The potential temporary restriction or elimination of on-street parking during construction activities could increase competition for street parking in the vicinity and affect businesses in the immediate area.

9.2 Long-Term Effects

Unavoidable long-term impacts resulting from development of the proposed and alternative wastewater facility improvements include air quality, economic, visual, and energy consumption.

Air Quality: Odor mitigation measures will be provided for all proposed improvements at the Honouliuli WWTP. Nevertheless, there may be instances when nuisance air emissions from the facility would be detectable in the nearby areas, particularly as residential development proceeds in areas closer to the plant. Such instances may potentially occur during maintenance activities, or due to inadvertent leakage of air handling systems or malfunction of odor control equipment.

Economic: The capital improvement and annual operating costs associated with the proposed and alternative wastewater facility improvements will be distributed among all wastewater system customers on Oahu in the form of sewer fees.

Visual: Most of the proposed and alternative wastewater facility improvements will be similar in visual character to those of the existing wastewater facilities. Hence, the change in views from public places will be of a slight intensification of the existing uses at most. The alternative of developing underground equalization facilities will have little visual impact following restoration of existing above-ground uses. If open-basin equalization facilities are developed at the former Pearl City WWTP and/or at the Mililani PTF, the visual character of the sites will change, however, visual open space and view corridors would be maintained.

Energy Consumption: The use of electrical power on Oahu results in the use of fossil fuel resources and production of air pollution. Operation of the various proposed and alternative wastewater facility improvements will increase and decrease demand for energy consumption, however, the net result cannot be determined at this time. For example, upgraded WWPSs and improvements at the Honouliuli WWTP will increase demand, as would equalization facilities that capture and require pumping of flows. On the other hand, the proposed Pacific Palisades Diversion Sewer would eliminate the Pacific Palisades WWPS and reduce demand. Moreover, in the long-term, the solids treatment improvements at the Honouliuli WWTP could be augmented to generate electricity, reducing demand on fossil fuel resources.

Chapter 10

Unresolved Issues

10. UNRESOLVED ISSUES

Unresolved issues are invariably associated with projects in the planning and design stages. Consequently, the planning process, which includes this Environmental Impact Statement, attempts to identify these issues and to develop appropriate mitigative measures.

Project Plans and Design: Design development for the recommendations presented in Final Plan Report of the West Mamala Bay Facilities Plan will proceed over the next two decades. Changes in the concepts may be required in response to changing assumptions and public input.

Funding of Improvements: The funds required for construction of the proposed individual wastewater projects may vary depending on the final design of each project, bidding conditions, and other factors. Also, the actual cost to be assessed per wastewater system ratepayer for the proposed facility improvements remains to be determined.

Necessary Permits and Approvals: Land use and environmental permits and approvals will be required prior to construction of the proposed projects. The required permits and approvals will be determined during the more detailed planning and design phases for each project.

Phasing of Improvements: The actual phasing of construction of the majority of the proposed individual wastewater projects is unresolved as it will be largely dependent on project priority, as well as Honolulu City Council approval. Additionally, future changes to the City's land use plans and policies affecting build-out capacity cannot be anticipated, nor can the actual rate of population growth. Any such changes may impact both the need for and timing of wastewater projects proposed to increase future capacity.

Facilities in Flood Hazard Districts: The Waipahu and Pearl City WWPSs are all located within the respective flood hazard districts. Development of the proposed and alternative wastewater facility improvements within the flood hazard districts will be in accordance with regulations set forth in Section 21-9.10 Flood Hazard Districts of the City's Land Use Ordinance (LUO), and subject to the preparation of flood studies pursuant to the Section, as may be required. The studies will be conducted to ensure that any proposed encroachment of facilities in the floodway will not result in any increase in the regulatory flood elevations during occurrence of the regulatory flood.

Chapter 11

Consultation

11. CONSULTATION

11.1 Pre-Assessment Consultation

The following agencies, organizations and elected officials were consulted during the pre-assessment phase of the EISPN. Of the parties that formally replied during the comment period, some had no comment while others provided substantive comments as indicated by the ✓ and ✓✓, respectively. All written comments are reproduced herein. In addition, three public information meetings were held on June 9, 1999 at Kaleiopuu Elementary School and on January 19 and 21, 2000 at Pearl Ridge and Ewa Elementary Schools, respectively. In addition to these meetings, a meeting was held with the Neighborhood Board No. 25, at their request. The meetings were conducted on the West Mamala Bay Facilities Plan.

Federal

- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- ✓ Natural Resource Conservation Service
- U.S. Army Civil Works Branch
- Commander, Navy Region Hawaii

State of Hawaii

- Department of Health
- Department of Health, Environmental Management Division
- Department of Land and Natural Resources (DLNR)
- DLNR, Division of Forestry and Wildlife
- DLNR, Division of Land Management
- DLNR, Division of Aquatic Resources
- DLNR, Division of Historic Preservation
- ✓✓ Department of Transportation- Highways Division
- ✓✓ Department of Business, Economic Development and Tourism
- Department of Accounting and General Services, Stadium Authority
- ✓✓ Barbers Point Naval Air Station Redevelopment Commission

City and County of Honolulu

- ✓✓ Department of Planning and Permitting
- ✓✓ Police Department
- ✓✓ Fire Department
- ✓✓ Board of Water Supply
- Department of Parks and Recreation

Department of Design and Construction, Division of Infrastructure Design and Engineering
Department of Design and Construction, Division of Land Survey Acquisition
Department of Environmental Services

Organizations

Neighborhood Boards:
Aliamanu/Salt Lake/Foster Village No. 18
Aiea No. 20
Pearl City No. 21
Waipahu No. 22
Ewa No. 23
Mililani/Waipio/Melemanu No. 25
Makakilo/Kapolei/Honokai Hale No. 34
Mililani Mauka/Launani Valley No. 35



State
ment of
are

in
area
region

Box 50004
Hon, HI

Our People...Our Islands...In Harmony

February 3, 2000

Mr. Lance Manabe, Project Manager
Department of Design and Construction
City and County of Honolulu
650 South King Street, 14th Floor
Honolulu, Hawaii 96813

Dear Mr. Manabe:

Subject: Reference No. DCP 99-907 - Environmental Impact Statement Preparation
Notice (EISP/N)/Pre-Assessment Consultation - West Mamala Bay
Wastewater Facilities Plan, Ewa and Central Oahu, Hawaii

We have reviewed the above mentioned document and have no comments to offer at
this time.

Thank you for the opportunity to review this document.

Sincerely,

KENNETH M. KANESHIRO
State Conservationist

The Natural Resources Conservation Service works hand-in-hand with
the American people to conserve natural resources on private lands.

AN EQUAL OPPORTUNITY EMPLOYER

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 14TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4584 • FAX: (808) 523-4587
WEB SITE ADDRESS: www.cd.honolulu.gov



JEREMY HARRIS
MAYOR

GARY Q. L. YEE
DIRECTOR

ROLAND O. LURRY, JR.
DEPUTY DIRECTOR

DCP 2000-353

May 23, 2000

Mr. Kenneth M. Kaneshiro
State Conservationist
U.S. Department of Agriculture
National Resources Conservation Service
P.O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Kaneshiro:

Subject: Environmental Impact Statement (EIS) Preparation Notice
Pre-Assessment Consultation
West Mamala Bay Facilities Plan
Ewa and Central Oahu, Hawaii

Thank you for your letter dated February 3, 2000 regarding the subject EIS Preparation
Notice Pre-Assessment Consultation.

We acknowledge that you do not have any comments to offer at this time.

Your participation in the pre-assessment consultation phase of the EIS process is
appreciated.

If you have any questions or concerns, please call Lance Manabe at 523-4551.

Very truly yours,

GARY Q. L. YEE, AIA
Director

FEB-03-2000 07:58 FROM WASTE/WATER MGMT PLSC/EBC TO WILSON OKAYOTO P.02

RECEIVED



00 FEB -1 09 57

DESIGN & CONSTRUCTION DIVISION OF PLANNING & PROGRAMMING

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

JAN 28 2000

DESIGN & CONSTRUCTION DIV OF INFRASTRUCTURE DESIGN & ENGINEERING

IN REPLY REFER TO:

HWY-PS 2.7028

RECEIVED JAN 32 09:06

DC 4000-00100
KAZU HAYASHIDA
DEPUTY DIRECTOR
EWA AND CENTRAL OAHU
COUNCIL ON OAHU

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 522-4584 • FAX: (808) 523-4587
WEB SITE ADDRESS: WWW.CC.HONOLULU.HI.US



JEREMY HARRIS
DIRECTOR

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND O. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-353

May 23, 2000

Mr. Kazu Hayashida, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Dear Mr. Hayashida:

Subject: Environmental Impact Statement (EIS) Preparation Notice
Pre-Assessment Consultation
West Mamala Bay Facilities Plan
Ewa and Central Oahu, Hawaii

Subject: Environmental Impact Statement Preparation Notice (EISP/N), Pre-Assessment
Consultant, West Mamala Bay Wastewater Facilities Plan, Ewa and Central Oahu

Thank you for requesting our comments on the proposed facilities plan.

Please continue to consult with us regarding the implementation of the subject plan since its new sewer lines or improvements to existing sewer lines may impact our State highway facilities.

Construction plans for work done within our highway rights-of-way must be submitted for our review and approval.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Director of Transportation

Your participation in the pre-assessment consultation phase of the EIS process is appreciated.

If you have any questions or concerns, please call Lance Manabe at 523-4551.

Very truly yours,

Gary Q. L. Yee
GARY Q. L. YEE, AIA
Director

RECEIVED

DC 2000-00004

ESTHER UEDA
EXECUTIVE OFFICER



STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND LAND USE COMMISSION

P.O. Box 2359
Honolulu, HI 96804-2359
Telephone: 808-541-4322
FAX: 808-531-5427

FACSIMILE AND MAIL

January 20, 2000

Mr. Randall K. Fujiki, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Fujiki:

Subject: Environmental Impact Statement Preparation Notice (EISPN)
Pre-Assessment Consultation
West Mamala Bay Wastewater Facilities Plan
Ewa and Central Oahu, Hawaii

Postnet Fax Note	7071	Date	Time	Initials	Page #
To: Director, Design and Construction		1/20/00	10:00	EU	2
From: Esther Ueda					
Subject: West Mamala Bay Wastewater Facilities Plan					
Page #	5873827				
Page #	5873827				

We have reviewed the subject EISPN by your letter dated December 23, 1999. We confirm that the Honouliuli Wastewater Treatment Plant (HWWTWP) is in the State Land Use Urban District, and we have the following comments for the pre-assessment consultation:

1. In determining future wastewater collection needs, consideration should be given to the projected demand from full build out of pending and new projects. The Ewa and Central Oahu areas will continue to experience significant growth and development. For example, there were approximately fifty-four (54) development projects that received approval to redistrict land to the State Land Use Urban District from 1963 through 1999 in the West Mamala Bay wastewater service area. They involved various residential, commercial, industrial, recreational, and park uses utilizing over 17,321 acres.
2. Adjacent to the east of the Honouliuli Wastewater Treatment Plant (HWWTWP) is the Ewa Gentry project. The Commission approved a petition for district boundary amendment to reclassify approximately 685 acres from the State Land Use Agricultural to Urban District submitted by the Gentry Development Company ("Petitioner"). The Commission approved the petition through its Findings of Fact, Conclusions of Law and Decision and Order for LUC Docket No. A88-627 dated May 8, 1999 ("Decision and Order"), and later amended on July 25, 1999. The Decision and Order required twenty-seven (27)

Mr. Randall K. Fujiki
January 20, 2000
Page 2

conditions that the Petitioner must comply with, and Condition Nos. 12 and 13 relate to the HWWTWP.

Condition No. 12 states, "Petitioner shall participate in a study in coordination with the City and the State Department of Health to assess the odors emanating from the Honouliuli Wastewater Treatment Plant on the Property. Petitioner shall make the results of such a study available to the State and the City upon its completion."

The Petitioner had stated in their 1999 annual report to the Commission dated July 15, 1999, that the City and County is planning to undertake a study on mitigating odors and noise associated with the wastewater treatment plants throughout Oahu. Odor and noise mitigation measures should be considered in the proposed expansion of the HWWTWP.

Condition No. 13 states, "Petitioner shall connect the wastewater system for the development proposed on the Property to HWWTWP. Construction of residential and industrial uses within the Property shall not commence until Petitioner has obtained assurances from the City that the capacity at the HWWTWP has been reserved for the development on the Property. Petitioner shall coordinate with the City Department of Public Works and the State Department of Health for the provision of adequate buffer measures, including appropriate land uses, between the development of the Property and the existing HWWTWP and any proposed expansion of the HWWTWP to minimize noise, odor and other impacts associated with HWWTWP."

The Petitioner had stated in their 1999 annual report to the Commission, that capacities has been reserved for their projects, and they intend to work with proper City and State agencies in establishing buffers between the development and the existing and proposed expanded HWWTWP. Provision for adequate buffers should be considered between the HWWTWP and surrounding residential developments.

Thank you for the opportunity to review and comment on the EISPN.

If you have any questions in regards to this matter, please contact me or Russell Kumabe of my staff at 587-3822. Thank you for your cooperation in this matter.

Sincerely,

ESTHER UEDA
Executive Officer

EU:aa

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 527-3400 • FAX: (808) 527-3487
WEB SITE ADDRESS: www.cc-honolulu.gov



JEREMY HARRIS
MAYOR

GARY Q. L. YBE, AIA
20417-20

ROLAND D. LARRY, JR., AIA
DEPUTY DIRECTOR

Ms. Esther Ueda

-2-

May 23, 2000

2. Regarding Condition No. 12, there are a number of preliminary recommendations for an odor control program at the Honolulu Wastewater Treatment Plant (WWTP). To confirm the appropriateness of this program, and to develop specific design and operating criteria, an odor analysis of the Honolulu WWTP is recommended to identify the types of amounts of odorous material being produced.

Noise from the Honolulu WWTP is associated with equipment used in the collection and treatment process. Noise from the proposed wastewater collection and treatment systems improvements will be attenuated to meet the allowable noise levels as established in the Chapter 46 rules.

In regards to Condition No. 13, we are awaiting information from the Department of Design and Construction.

We will submit plans to Genry Development Company for their review.

Your participation in the pre-assessment consultation phase of the EIS process is appreciated.

If you have any questions or concerns, please call Lance Manabe at 523-4551.

DCP 2000-353

May 23, 2000

Ms. Esther Ueda
Executive Officer
Land Use Commission
Department of Business, Economic
Development and Tourism
P.O. Box 2359
Honolulu, Hawaii 96804-2359

Dear Ms. Ueda:

Subject: Environmental Impact Statement (EIS) Preparation Notice
Pre-Assessment Consultation
West Mamala Bay Facilities Plan
Ewa and Central Oahu, Hawaii

Thank you for your letter dated January 20, 2000 regarding the subject EIS Preparation Notice Pre-Assessment Consultation. We offer the following responses in the respective order of your comments:

1. The West Mamala Bay Facilities Plan is a long-range planning document encompassing the major wastewater collection, treatment and disposal facilities in the service area based on a 2020 planning horizon. A computer model of wastewater flows was used to assess the capacity of these major system components. Future wastewater flows through 2020 were projected using population projections provided by the City Department of Planning and Permitting (DPP). These population projections were used in the development of the recently adopted Ewa and Central Oahu Development Plans. Therefore, to the extent that the DPP has accounted for these planned developments in their population projections, they are addressed by the Pre-Final Facilities Plan Report.

Very truly yours,

GARY Q. L. YBE, AIA
Director

UC 2000-00240



Barbers Point
Naval Air Station
Redevelopment Commission
Developing the Community of Kalaheo

RECEIVED

TO MAR 20 AM 10:2

DESIGN & CONSTRUCTION
DIVISION OF
PLANNING & PROGRAMMING

March 17, 2000

Ref. No.: BP-0743

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 533-4584 • FAX: (808) 533-4587
WEB SITE ADDRESS: www.cc.honolulu.gov



JEREMY HARRIS
CLERK

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LEBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-353

May 23, 2000

Mr. Gary Yee, Director
Department of Design and Construction
City and County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

Subject: EISPN Pre-Assessment Consultation for the West Mamala Bay Wastewater Facilities Plan

Dear Mr. Yee:

This is in response to your department's December 23, 1999 letter requesting pre-assessment consultation comments for your EIS Preparation Notice. Our apologies for not responding to you sooner. Two office moves over the last two months has delayed our ability to respond in a more timely manner.

We request to be a consulted party in the preparation of the EIS.

We note that the Kalaheo Community Development District (KCDD), formerly the NAS Barbers Point, is part of the West Mamala Bay Facilities Plan. We recommend that your study include a section addressing how the wastewater system within the KCDD will be included into the City's system. The Department of Environmental Services is pursuing acquisition of the KCDD wastewater system from the U.S. Navy.

If there are any questions regarding this letter, please call Infrastructure Development Manager Bennett Mark at 682-6383. Our new mailing address is P.O. Box 75268, Kapolei, Hawaii 96707-0268, and our new office number is 682-6381.

Sincerely,

William M. Bass
Executive Director

Mr. William M. Bass
Executive Director
Barbers Point Naval Air Station
Redevelopment Commission
P.O. Box 75268
Kapolei, Hawaii 96707-0268

Dear Mr. Bass:

Subject: Environmental Impact Statement (EIS) Preparation Notice
Pre-Assessment Consultation
West Mamala Bay Facilities Plan
Ewa and Central Oahu, Hawaii

Thank you for your letter dated March 17, 2000. The EISPN states that Kalaheo Community Development District (KCDD) is part of the West Mamala Bay Facilities Plan. However, the type of wastewater facility improvements cannot be assessed until the KCDD Master Plan is completed.

Your participation in the pre-assessment consultation phase of the EIS process is appreciated.

If you have any questions or concerns, please call Lance Manabe at 523-4551.

Very truly yours,

GARY Q. L. YEE, AIA
Director

DC 2000-00001

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
150 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 522-4414 • FAX: (808) 527-8743

TH 1999/CLOG-8319
RANDALL K. FUJIKI, AIA
ACTING DIRECTOR
LORETTA K.C. CHEN
DESIGNATION



January 20, 2000

Gary Q. L. Yee, Acting Director
January 20, 2000
Page 2

MEMORANDUM

TO: GARY Q. L. YEE, ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: RANDALL K. FUJIKI, AIA, ACTING DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
(EISP/N) PRE-ASSESSMENT CONSULTATION FOR THE WEST
MAMALA BAY FACILITIES PLAN, EWA AND CENTRAL OAHU,
HAWAII

In response to your memorandum of December 23, 1999, we have reviewed the project summary for the West Mamala Bay Facilities Plan (Plan) and offer the following comments.

1. We find that the intent of the Plan is consistent with the objectives and policies in the General Plan related to Transportation and Utilities; and Physical Development and Urban Design.
 2. The Ewa Development Plan (DP) states that the Department of Wastewater Management (WWM) estimates treatment/disposal capacity at the Honouliuli Wastewater Treatment Plant (WWTP) will need to be increased by 2020. The WWM estimates that the Honouliuli WWTP's capacity will have to be increased from its current 38 million gallons per day (mgd) to about 51 mgd by 2020 to accommodate increased development in Ewa and Central Oahu.
- The Ewa DP also contains policies concerning the reuse of treated effluent for irrigation and other uses below the Underground Injection Control Line of the State Department of Health and the "No-Pass" Line of the Board of Water Supply. We recommend that the Plan and EIS discuss how these policies will meet the Plan's long-range strategy and plans for using reclaimed water and potential areas for its use.

3. The Department of Planning and Permitting (DPP) is currently processing a zone change amendment for the Villages of Kapolei which consists of approximately 888 acres and is located in the Plan's study area. The proposed zone change amendment was initiated by City Council Resolution 99-57 to resolve inconsistencies between existing and planned land uses and give guidance to land owners and individual home owners regarding how development standards will be regulated. The proposed zone change amendment would change all but 2 acres of the Villages of Kapolei from AG-1 Restricted Agriculture to R-3.5 and R-5 Residential District, A-1 Low Density and A-2 Medium Density Apartment Districts, AMX-1 Apartment Mixed Use District, B-1 Neighborhood Business District, BMX-3 Business Mixed Use District, and P-2 General Preservation District. The remaining 2-acre parcel located in the southeast corner of the Villages of Kapolei is recommended to remain AG-1 to accommodate a maintenance baseyard and nursery. The recommended zoning districts will best reflect the pattern of built development and will accommodate planned developments by current or future land owners.

The proposed zone change amendment is not expected to affect the collection and disposal of existing developments within the Villages of Kapolei. However, it has been determined through discussions between DPP, the Department of Environmental Services, the State's Housing and Community Development Corporation of Hawaii (HCDC), and its consultant, R.M. Towill that portions of the existing sewer system was not designed and built to City standards. As a result, the system has not been dedicated to nor accepted by the City and County of Honolulu yet. Deficiencies in portions of the sewer system is an issue requiring further discussion and work between the City and State. However, regarding sewer capacity for existing developments in the Villages of Kapolei, the City proposes the following condition be met by the HCDC within 90 days after the effective date of the approved zone change.

"The HCDC shall submit to the DPP, within 90 days after the effective date of the approved zone change, a revised Sewer Master Plan for review and approval by the DPP and the Department of Environmental Services. The revised Sewer Master Plan shall include:

- a. A discussion of the existing sewer system in terms of its capacity and its physical condition;
- b. Disclosure of any deficiencies in the existing sewer system with respect to City standards for the proper installation, collection and transmission of wastewater from existing developments to its designated treatment facility for eventual disposal;

Gary Q. L. Yee, Acting Director
January 20, 2000
Page 3

- c. All proposed mitigation measures to correct identified deficiencies affecting the proper collection and transmission of wastewater from existing developments to its designated treatment facility for eventual disposal; and
- d. A timetable for implementation and completion of all proposed mitigation measures to adequately correct or handle all identified deficiencies affecting the proper collection and transmission of wastewater from existing developments to its designated treatment facility for eventual disposal.*

Unresolved issues related to the existing sewer system will be fully addressed by the HCDCH in the revised Sewer Master Plan which must be submitted to and approved by the DPP. To date, the HCDCH is in the process of completing the revised Sewer Master Plan.

Thus, we recommend that both the Plan and EIS discuss whether or not Honouliuli WWTP's projected capacity of 51 mgd will accommodate estimated sewer flows from the Villages of Kapolei's sewer system when it is eventually dedicated to the City.

Thank you for the opportunity to comment on this matter. Should you have any questions, please contact Tim Hata of our staff at 527-6070.

RKF:js

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4564 • FAX: (808) 523-4587
WEB SITE ADDRESS: www.cc.honolulu.hi.us



JERRY HARRIS
MAYOR

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. BERRY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-353

May 23, 2000

MEMORANDUM

TO: MR. RANDALL K. FUJIKI, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE PRE-ASSESSMENT CONSULTATION
WEST MAMALA BAY FACILITIES PLAN
EWA AND CENTRAL OAHU, HAWAII

Thank you for your letter dated January 20, 2000 regarding the subject EIS Preparation Notice Pre-Assessment Consultation. We offer the following responses in the respective order of your comments:

1. We appreciate your finding that the intent of the West Mamala Bay Facilities Plan is consistent with the applicable objectives and policies of the General Plan.
2. The proposed increase in the capacity of the Honouliuli WWTP from 38 mgd to 51 mgd by 2020 is almost entirely based on accommodating Peak Wet -Weather Flow (PWTF), as opposed to Average Dry Weather Flow (ADWF), which are sanitary flows generated by developments. Only minor plant improvements are required to accommodate ADWF through 2020.

Although the West Mamala Bay Facilities Plan anticipates and considers future expansion of water reclamation at the Honouliuli WWTP, potential reuse is not necessarily limited to irrigation. For example, the current U.S. Filter reclamation project involves primarily industrial reuse at Campbell Industrial Park. The Board of Water Supply's Integrated Resource Plan could also involve conveyance of

Mr. Randall K. Fujiki

-2-

May 23, 2000

reclaimed water outside of the Ewa District. Therefore, as in the case of the U.S. Filler project, planning and environmental impact documentation pertaining to reuse will be addressed in conjunction with reclamation and conveyance projects. To the extent that irrigation reuse could occur on the Ewa Plain, however, both the Facilities Plan and the DEIS will mention the Ewa DP policies relating to irrigation reuse below the Department of Health's Underground Injection Control Line and the Board of Water Supply's "No Pass" line.

3. The West Maimala Bay Facilities Plan is a long-range planning document encompassing the major wastewater collection, treatment and disposal facilities in the service area based on a 2020 planning horizon. A computer model of wastewater flows was used to assess the capacity of these major system components. Future wastewater flows through 2020 were projected using population projections provided by your department. We understand that these population projections were used in the development of the recently adopted Ewa and Central Oahu Development Plans. Therefore, if the proposed zone changes for the Villages of Kapolei are accounted for in your population projections, then it is also accounted for in the preliminary recommendations of the Pre-final Facilities Plan Report.

As a reflection of your Development Plans, the West Maimala Bay Facilities Plan is a comprehensive, long-term planning document. During the review process, it is not intended to be updated to reflect on-going considerations such as zone change applications. In general, minor adjustments in population projections are unlikely to affect the preliminary recommendations. As for the Honouliuli WWTP, only a significant change in the projected total population of the service area would affect the preliminary recommendation on plant capacity.

Your participation in the pre-assessment consultation phase of the EIS process is appreciated.

If you have any questions or concerns, please call Lance Manabe at 523-4551.

DC 1000-0000
12

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

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-1584 • FAX: (808) 523-4567
WEB SITE ADDRESS: www.cc.honolulu.gov



JEREMY HARRIS
MAYOR

100 JUN 20 10:24 AM
DESIGN & CONSTRUCTION DIVISION
LANCE MANABE, DEPUTY CHIEF



JEREMY HARRIS
MAYOR

GARY O. L. YEE, AIA
DIRECTOR
ROLAND O. LARRY, JR., AIA
DEPUTY DIRECTOR

OUR REFERENCE CS-DL

January 18, 2000

May 23, 2000

DCP 2000-353

TO: RANDALL K. FUJIKI, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTENTION: LANCE MANABE, PROJECT MANAGER

FROM: LEE D. DONOHUE, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
PRE-ASSESSMENT CONSULTATION
WEST MAMALA BAY WASTEWATER FACILITIES PLAN
EWA AND CENTRAL OAHU, HAWAII

MEMORANDUM

TO: MR. LEE D. DONOHUE, CHIEF
HONOLULU POLICE DEPARTMENT

FROM: GARY O. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE PRE-ASSESSMENT CONSULTATION
WEST MAMALA BAY FACILITIES PLAN
EWA AND CENTRAL OAHU, HAWAII

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

We have no comment at this time, but may have as plans are developed for specific areas.

If there are any questions, please call me at 529-3255.

LEE D. DONOHUE
Chief of Police

By *Eugene Uemura*
EUGENE UEMURA
Assistant Chief
Support Services Bureau

Thank you for your letter dated January 18, 2000 regarding the subject EIS Preparation Notice Pre-Assessment Consultation.

We acknowledge that you do not have any comments to offer at this time.

Your participation in the pre-assessment consultation phase of the EIS process is appreciated.

If you have any questions or concerns, please call Lance Manabe at 523-4551.

CITY AND COUNTY OF HONOLULU
FIRE DEPARTMENT
3375 KOA PAKA STREET, SUITE 2423
HONOLULU, HAWAII 96819-1699



ATTILIO K. LEONARDI
FIRE CHIEF
JOHN CLARK
DEPUTY FIRE CHIEF

Lance Manabe, Project Manager
Page 2
January 11, 2000

January 11, 2000

TO: LANCE MANABE, PROJECT MANAGER
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: ATTILIO K. LEONARDI, FIRE CHIEF

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE (EISP/N)
PRE-ASSESSMENT CONSULTATION
WEST MAMALA BAY WASTEWATER FACILITIES PLAN
EWA AND CENTRAL OAHU, HAWAII

We received the memorandum from Randall K. Fujiki dated December 23, 1999, regarding the environmental impact statement preparation notice (EISP/N) pre-assessment consultation for West Mamala Bay Wastewater Facilities Plan in Ewa and Central Oahu, Hawaii.

The Honolulu Fire Department (HFD) requests that the following be complied with:

1. Provide a private water system where all appurtenances, hydrant spacing, and fire flow requirements meet Board of Water Supply standards.
2. Provide a fire department access road to within 150 feet of the first floor of the most remote structure. Such access shall have a minimum vertical clearance of 13 feet 6 inches, be constructed of an all-weather driving surface complying with Department of Transportation (DTS) standards, capable of supporting the minimum 60,000 pound weight of our fire apparatus, and with a gradient not to exceed 20%. The unobstructed width of the fire apparatus access road shall meet the requirements of the appropriate county jurisdiction. All dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved turnaround having a radius complying with DTS standards.
3. Submit construction plans to the HFD and the Department of Planning and Permitting.

4. Maintain fire apparatus access throughout the construction site for the duration of the project.
5. Notify the Fire Communication Center (523-4411) of any interruption in the existing fire hydrant system during the project.

Should you have any questions, please call Battalion Chief Kenneth Silva of our Fire Prevention Bureau at 831-7778.

Attilio K. Leonard
ATTILIO K. LEONARDI
Fire Chief

AKUKS:jo

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 522-4564 • FAX: (808) 522-4567
WEB SITE ADDRESS: WWW.DC.HONOLULU.HI.US



JEREMY HARRIS
MAYOR

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LURRY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-353

May 23, 2000

MEMORANDUM

TO: MR. ATTILIO K. LEONARDI, CHIEF
HONOLULU FIRE DEPARTMENT

FROM: GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE PRE-ASSESSMENT CONSULTATION
WEST MAMALA BAY FACILITIES PLAN
EWA AND CENTRAL OAHU, HAWAII

Thank you for your letter dated January 11, 2000 regarding the subject EIS Preparation Notice Pre-Assessment Consultation. Inasmuch as the West Mamala Bay Facilities Plan is a long-range planning document encompassing the entire service area based on a 2020 planning horizon, preparation of construction plans for specific wastewater system improvements will span two decades. Since fire protection requirements are subject to change over this period, the DDC offers its assurance that all requirements applicable to specific projects at the time that construction plans are prepared will be complied with.

Your participation in the pre-assessment consultation phase of the EIS process is appreciated.

If you have any questions or concerns, please call Lance Manabe at 523-4551.

JAN-27-2000 15:14:44 FROM WASTEWATER MGMT PRESC/ESC TO WILSON DKRYOTO P. 02

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BEAUFORT STREET
HONOLULU, HAWAII 96813

RECEIVED
JAN 27 8 59 AM '00

RECEIVED
JAN 26 7 25 AM '00

RECEIVED
JAN 26 7 25 AM '00

DESIGN & CONSTRUCTION
DIVISION OF
PLANNING & PROGRAMMING
MR. GARY YEE, ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

DESIGN & CONSTRUCTION
DIVISION OF
PLANNING & PROGRAMMING
MR. GARY YEE, ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

TO: MR. GARY YEE, ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: CLIFFORD S. JAMILE

SUBJECT: YOUR TRANSMITTAL OF DECEMBER 23, 1999
ON THE PRE-ASSESSMENT CONSULTATION PHASE
FOR THE ENVIRONMENTAL IMPACT STATEMENT
FOR THE WEST MAMALA BAY WASTEWATER
FACILITIES PLAN, EWA AND CENTRAL OAHU

RECEIVED
JAN 26 7 25 AM '00

DESIGN & CONSTRUCTION
DIVISION OF
PLANNING & PROGRAMMING
MR. GARY YEE, ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

TO: MR. GARY YEE, ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: CLIFFORD S. JAMILE

SUBJECT: YOUR TRANSMITTAL OF DECEMBER 23, 1999
ON THE PRE-ASSESSMENT CONSULTATION PHASE
FOR THE ENVIRONMENTAL IMPACT STATEMENT
FOR THE WEST MAMALA BAY WASTEWATER
FACILITIES PLAN, EWA AND CENTRAL OAHU

RECEIVED
JAN 26 7 25 AM '00

DESIGN & CONSTRUCTION
DIVISION OF
PLANNING & PROGRAMMING
MR. GARY YEE, ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

TO: MR. GARY YEE, ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: CLIFFORD S. JAMILE

SUBJECT: YOUR TRANSMITTAL OF DECEMBER 23, 1999
ON THE PRE-ASSESSMENT CONSULTATION PHASE
FOR THE ENVIRONMENTAL IMPACT STATEMENT
FOR THE WEST MAMALA BAY WASTEWATER
FACILITIES PLAN, EWA AND CENTRAL OAHU

Thank you for the opportunity to review the document for the proposed facilities plan. We have no objections to the long-range plan for the collection, treatment and disposal of wastewater for the West Mamala Bay Subdistrict. However, we do have the following comments that should be addressed during the review process:

1. We note the summary indicates there are large unsewered areas within Ewa Beach, Honolulu, Waimano and Aiea Heights. The summary recommends, however, that a new gravity collection system is constructed for only the Ewa Beach area due to the close proximity and availability of the existing system. We feel that sewer systems should also be constructed for the other areas due to the detrimental effects that cesspools and other ground disposal methods have on our groundwater sources. This would be especially true for the Waimano and Aiea areas since we have potable wells in the immediate vicinity. An implementation schedule should also be established and noticed.
2. The summary briefly mentions the U.S. Filter's reuse project at Honolulu as part of the treatment and disposal recommendations. There should be an expanded discussion of this reuse project and other potential reuse projects within the study area, which would reduce effluent discharges into the ocean and provide alternative water supplies.
3. Please note that as part of our desalination project at Barber's Point, there will be a proposed brine outfall discharging to near shore waters. The facilities plan should be cognizant of this due to the potential impacts the discharge may have on your water quality analyzers, hydrologic models and permits for the near shore waters of West Mamala Bay.
4. We reserve further comment until the Environmental Impact Statement Preparation Notice is submitted for our review.

If you have any questions, please contact Barry Utagawa at 527-5235.

Pure Water... our greatest need - use it wisely

1/26/00 10:00

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
630 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 808/522-4324 • FAX: 808/522-4587
WEB SITE ADDRESS: WWW.DDC.HONOLULU.HI.US



GARY O. L. YEE, AIA
DIRECTOR
ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-353

May 23, 2000

MEMORANDUM

TO: MR. CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: GARY O. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE PRE-ASSESSMENT CONSULTATION
WEST MAMALA BAY FACILITIES PLAN
EWA AND CENTRAL OAHU, HAWAII

Thank you for your letter dated January 24, 2000 regarding the subject EIS Preparation Notice Pre-Assessment Consultation. We offer the following responses in the respective order of your comments:

1. There are four major unsewered areas in the Study Area for the West Mamala Bay Facilities Plan. Presently, the City has two Capital Improvement Projects addressing the unsewered areas at Waimano and Aiea Heights respectively. The Waimano Sewers Improvement Project has been designed and was scheduled for construction bidding in late 1999. The City is working with SSFM Engineers on developing a recommendation for the Aiea Heights unsewered area.
- The West Mamala Bay Facilities Plan addresses the remaining two unsewered areas for which planning has not been initiated. The preliminary recommendation for the Honouliuli Unsewered area is to defer action since master plans are being developed for the East Kapolei area. The master plans include new wastewater collection systems that could accommodate the Honouliuli Unsewered Area.

May 23, 2000

-2-

Mr. Clifford S. Jamile

2. The Pre-Final Report of the West Mamala Bay Facilities Plan includes a discussion of the various water reclamation efforts that were considered in developing the preliminary recommendations. For EIS-related documents, much of the information contained in the full report is summarized. While we concur that more reuse would reduce ocean discharge and provide alternative water supply, assuming high levels of reuse could be regarded as overly optimistic with respect to lessening the plant's future impact on coastal water quality and the economic viability of water reclamation facilities to be self-supporting. Therefore, the preliminary recommendation in the Prefinal Plan Report is conservative in suggesting continued reliance on disposal through the ocean outfall. Should the demand for reclaimed water exceed current expectations, additional reclamation could become economically viable and the reliance on the ocean outfall for disposal reduced.
 3. We acknowledge that your planned desalination project could impact water quality analyses relating to the Barbers Point ocean outfall. Please keep us apprised of your desalination project and submit plans as they are developed for our review and comment.
 4. We welcome your review and comments on the forthcoming EIS Preparation Notice. Your participation in the pre-assessment consultation phase of the EIS process is appreciated.
- If you have any questions or concerns, please call Lance Manabe at 523-4551.

11.2 Parties Consulted During the EISPN

The following agencies, organization and elected officials were consulted and comments solicited for the EIS Preparation Notice. As of July 10, 2000, a total of 20 comment letters were received. Of those who formally replied, some had no comments while other provided substantive comments as indicated by the ✓ and ✓✓, respectively. All written comments and responses are produced herein.

Federal

- U.S. Fish and Wildlife Service
- ✓ U.S. Geological Survey
- ✓ Natural Resource Conservation Service
- ✓✓ U.S. Army Civil Works Branch
Commander, Navy Region Hawaii

State of Hawaii

- ✓✓ Department of Health
Department of Health, Environmental Management Division
- Department of Land and Natural Resources (DLNR)
- ✓ DLNR, Division of Forestry and Wildlife
- ✓ DLNR, Division of Land Division
- ✓✓ DLNR, Division of Aquatic Resources
- DLNR, Division of Historic Preservation
- ✓✓ DLNR, Commission on Water
- ✓✓ Department of Transportation- Highways Division
- Department of Business, Economic Development and Tourism
- Department of Accounting and General Services, Stadium Authority
- Office of Environmental Quality Control
- Office of Planning
- Office of Hawaiian Affairs
- Department of Hawaiian Home Lands
- University of Hawaii, Environmental Center
- ✓✓ Barbers Point Naval Air Station Redevelopment Commission

City and County of Honolulu

- ✓✓ Department of Planning and Permitting
- ✓✓ Police Department
- ✓✓ Fire Department
- ✓✓ Board of Water Supply
- ✓ Department of Parks and Recreation

- Department of Design and Construction, Division of Infrastructure Design and Engineering
- ✓ Department of Design and Construction, Division of Land Survey and Acquisition
- Department of Environmental Services
- ✓✓ Department of Transportation Services

Elected Officials

Senator Norman Sakamoto
Senator David Ige
Senator Randy Iwase
Senator Cal Kawamoto
Senator Brian Kanno
Senator Colleen Hanabusa

Representative Bob McDermott
Representative Tom Okamura
Representative K. Mark Takai
Representative Nobu Yonamine
Representative Roy M. Takumi
Representative Nestor R. Garcia
Representative Marilyn B. Lee
Representative Paul T. Oshiro
Representative Mark Moses
Representative Michael Puamamo Kahikina

Councilmember Rene Mansho
Councilmember Donna Mercado Kim
Councilmember Mufi Hannemann
Councilmember John DeSoto
Councilmember Steve Holmes

Public Utilities

- Hawaiian Electric Company, Inc.
- ✓✓ Verizon Hawaii (formerly GTE Hawaiian Telephone Company)
- ✓✓ Oceanic Cable
- ✓✓ The Gas Company

Organizations

Neighborhood Boards:
Aliamanu/Salt Lake/Foster Village No. 18

- Aiea No. 20
- Pearl City No. 21
- Waipahu No. 22
- Ewa No. 23
- ✓✓ Mililani/Waipio/Melemanu No. 25
- Makakilo/Kapolei/Honokai Hale No. 34
- Mililani Mauka/Launani Valley No. 35

- Hawaii's Thousand Friends
- Hawaii Audubon Society
- Outdoor Circle
- Chamber of Commerce
- Earth Justice
- Ewa Water Recycling Facility (U.S. Filter)

Other Interested Parties

- Mr. Scott Ishikawa
- Mr. Don Robbins
- Mr. Ken Windram
- Mr. Wei Chen
- Dr. Roger Babcock
- Mr. Roy Abe
- Mr. Michael Street
- ✓✓ Mr. Jason Yazawa

file #15201 - WMBFR project
to files
EY
10/12/00



United States Department of the Interior
U.S. GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
677 Ala Moana Blvd., Suite 415
Honolulu, Hawaii 96813
WILSON OKAMOTO & ASSOC., INC.

RECEIVED
JUL 07 2000

JEREMY HARRIS
MANAGER

July 6, 2000

Attention: Mr. Lance Manabe, Project Engineer
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Manabe:

Subject: West Mamala Bay Wastewater Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice
Tax Map Keys: 9-1-01 through 12, 17, 19, 21 - 25, 27 - 30, 32 - 112;
9-2-03, 06 - 33; 9-4-01, 02, 05 - 161; 9-5-01, 02, 04 - 69; 9-6-02 through
08; 9-7-19 through 27, 29 - 96; 9-8-01 through 18, 20, 73; and 9-9-01
through 77

Thank you for forwarding the subject EIS Preparation Notice for review and comment by the staff of the U.S. Geological Survey, Water Resources Division, Hawaii District office. We regret however, that due to prior commitments and lack of available staff, we are unable to review this document and are returning it for your future use.

We appreciate the opportunity to participate in the review process.

Sincerely,

Gordon W. Tribble
District Chief

Enclosure

Cc: Ms. Genevieve Salmonson, Director, OECC, State of Hawaii w/o enclosure
Mr. Earl Matsukawa, Project Manager, Wilson Okamoto & Associates, Inc.
w/a enclosure

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 Fax: (808) 523-4987
WebSite: www.cd.honolulu.hi.us



GARY O. L. YEE, AIA
DIRECTOR
ROLAND D. UEBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-538

August 8, 2000

Mr. Gordon W. Tribble, District Chief
Water Resources Division
U.S. Geological Survey
United States Department of the Interior
677 Ala Moana Boulevard, Suite 415
Honolulu, Hawaii 96813

Dear Mr. Tribble:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated July 6, 2000 regarding the subject EIS Preparation Notice.

We acknowledge that you and your staff are unable to review this document.

Very truly yours,

FOR GARY O. L. YEE, AIA
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.



United States Department of Agriculture
Natural Resources Conservation Service
P.O. Box 60004
Honolulu, HI 96813

CM
CM

Our People...Our Islands...In Harmony

July 10, 2000

Mr. Lance Manabe, Project Engineer
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Manabe:

Subject: Reference No. DCP 2000-358 -- Environmental Impact Statement Preparation Notice (EISPN) -- West Mamala Bay Wastewater Facilities Plan, Oahu

We have reviewed the above mentioned document and have no comments to offer at this time.

Thank you for the opportunity to review this document.

Sincerely,

Chris Leonard
acting for

KENNETH M. KANESHIRO
State Conservationist

RECEIVED
JUL 12 2000

WILSON OKAMOTO & ASSOC, INC.

cc: Mr. Earl Matsukawa, Project Manager, Wilson Okamoto & Associates, Inc., 1907 South Beretania Street, Suite 400, Honolulu, Hawaii 96826
Ms. Genevieve Salmonson, Director, Office of Environmental Quality Control, State of Hawaii, 235 South Beretania Street, Room 702, Honolulu, Hawaii 96813

The Natural Resources Conservation Service works hand-in-hand with the American people to conserve natural resources on private lands.

AN EQUAL OPPORTUNITY EMPLOYER

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 533-4584 Fax: (808) 533-4587
Website: www.cc.honolulu.gov



JEREMY HARRIS
MAYOR

GARY O. L. YEE, AIA
DIRECTOR
ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-543

August 8, 2000

Mr. Kenneth Kaneshiro
State Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
P.O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Kaneshiro:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated July 10, 2000 indicating that you have no comments to offer at this time regarding the subject EIS Preparation Notice.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,

Gary O. L. Yee
FOR GARY O. L. YEE, AIA
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96860-5400

REGULATORY BRANCH
ATTENTION OF

July 10, 2000

RECEIVED
JUL 13 2000

WILSON OKAMOTO & ASSOC., INC.

COPY

Mr. Lance Manabe
Project Director
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Manabe:

This responds to your request for review of the Environmental Impact Statement Preparation Notice (EISP/N) for the West Mamala Bay Wastewater Facilities Plan, Oahu, Hawaii. The purpose of these proposed improvements to the wastewater collection, treatment and disposal systems for the Honolulu Wastewater Treatment Plant service area is to accommodate wastewater flows projected through 2020.

Based on the information provided in the DSEIS, it appears that portions of the proposed project may involve activities in wetlands or other waters of the United States. A Department of the Army (DA) permit may therefore be required. For further information, please contact Mr. Peter Galloway of my Regulatory Branch staff (telephone 438-8416; fax 438-4060). File number 200000232 has been assigned to this project.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

Copies Furnished:

Office of Environmental Quality Control, State of Hawaii,
235 S. Beretania Street, Room 702, Honolulu, HI 96813

Wilson Okamoto & Associates, Inc., Attn: Mr. Earl
Matsukawa, Project Manager, 1907 South Beretania Street,
Suite 400, Honolulu, HI 96826
Clean Water Branch, State of Hawaii Department of Health,
P.O. Box 3378, Honolulu, HI 96801-3386
State of Hawaii, Department of Land and Natural Resources,
Commission on Water Resource Management, P.O. Box 621,
Honolulu, HI 96809

EM

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-5364 Fax: (808) 523-4387
Website: www.cc.honolulu.hi



JEREMY HARRIS
MAYOR

GARY Q. L. YEE, M.A.
DIRECTOR
ROLAND D. LEBBY, JR., M.A.
DEPUTY DIRECTOR

DCP 2000-542

August 8, 2000

Mr. George P. Young P.E., Chief
Regulatory Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

Dear Mr. Young:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated July 10, 2000 (File No. 200000232) regarding the subject EIS Preparation Notice. We offer the following in response to your comments:

The West Mamala Bay Facilities Plan is being prepared as a long-term (20-year) guide for the development of wastewater facilities in the area served by the Honolulu Wastewater Treatment Plant. Hence, the design and construction of specific improvements implementing the Plan will span two decades. As these specific improvements are designed, the need for Department of Army permits will be determined. Appropriate consultation with the staff of your Regulatory Branch will be initiated at that time.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,

FOR GARY Q. L. YEE, M.A.
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

-29-2000 07:12 FROM WASTEWATER MGMT PLSC/ESC TO WILSON OKAMOTO P.02

COPY

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-5564 Fax: (808) 523-4587
Website: www.cd.honolulu.gov



GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

WWDE.P 00-646

September 21, 2000

JEREMY HARRIS
MAYOR

Mr. Gary Gill, Deputy Director
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Gill:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated August 21, 2000 regarding the subject EIS Preparation Notice. We offer the following responses in the respective order of your comments:

1. We acknowledge your encouragement and support of using R-1 reclaimed water for irrigation purposes. The preliminary recommendations for wastewater treatment are based on achieving compliance with the City's Consent Decree requirements for beneficial reuse of reclaimed water and biosolids. For reclaimed water, this includes the existing 13-mgd of secondary treatment as well as the 13-mgd of advanced treatment for reuse represented by the Ewa Water Recycling Facility.
2. All wastewater collection and treatment plans will comply with the Department of Health's Rules, Chapter 11-62, "Wastewater Systems", Sections 24 - 26.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,

GARY Q. L. YEE, AIA
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

10-1704

REC'D
TO AUG 28 P3:30 99-265A/epo

DESIGN & CONSTRUCTION
DIVISION OF HEALTH
1001 KALANIANA'OLA BLVD, 2ND FLOOR
HONOLULU, HI 96813

BRUCE S. ANDERSON, PH.D., M.P.H.
DIRECTOR OF HEALTH

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

August 21, 2000

Mr. Lance Manabe, Project Engineer
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Manabe:

Subject: Environmental Impact Statement Preparation Notice (EISP/N)
West Mamala Bay Wastewater Facilities Plan
Oahu
TMK: 9-1-01 and various others

Thank you for allowing us to review and comment on the subject plan. We have the following comments to offer:

We are pleased with the proposed and alternative wastewater facility improvements which will accommodate projected flows up to the year 2020 and will provide wastewater treatment and disposal to support population and economic growth in the West Mamala Bay region. We have no objections to the plan, but do encourage and support the use of R-1 recycled water for irrigation purposes.

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

Should you have any questions, please contact the Planning/Design Section of the Wastewater Branch at (808)586-4294.

Sincerely,

GARY GILL
Deputy Director
Environmental Health Administration

cc: WWB

SEP-07-2000 10:29 FROM WASTE WATER MGMT PLS-CBC TO WILSON OKAMOTO P.02

00-1-275
8
9
BY

WILSON & ASSOCIATES
ENGINEERS & ARCHITECTS



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813
July 6, 2000

Mr. Lance Manabe
Project Engineer
Department of Design
and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Manabe:

Subject: West Mamala Bay Wastewater Facilities Plan, Environmental Impact Statement Preparation Notice

We have reviewed the subject EIS Preparation Notice for impacts to the native flora and fauna regarding DLNR, Division of Forestry and Wildlife programs and we have no objections to the proposed West Mamala Bay Wastewater Facilities Plan. Thank you for the opportunity to comment on your project.

Very truly yours,

Michael G. Buck
Administrator

C: DOFAW, Oahu Branch
OEQC
Wilson Okamoto & Associates, Inc

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: 808-523-4364 Fax: 808-523-4367
Website: www.cc.honolulu.gov



JEREMY HARRIS
MAYOR

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LUBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-544

August 8, 2000

Mr. Michael G. Buck, Administrator
Division of Forestry and Wildlife
Department of Land and Natural Resources
State of Hawaii
1151 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Buck:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated July 6, 2000 indicating that you have no objections regarding the proposed West Mamala Bay Facilities Plan, as addressed in the subject EIS Preparation Notice.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,

FORSARY Q. L. YEE, AIA
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.



STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 LAND DIVISION
 P.O. BOX 521
 HONOLULU, HAWAII 96809

July 11, 2000

LD-NAV

Wilson Okamoto & Associates, Inc.
 Mr. Earl Matsukawa, Project Director
 1907 South Beretania Street, Suite 400
 Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

SUBJECT: Environmental Impact Statement Preparation Notice for West Mamala Bay Facilities Plan

Attached herewith is a copy of our Division of Aquatic Resources' comments.

The Department has no other comment to offer on the subject matter at this time. Please submit five copies of the Draft Environmental Impact Statement to the Department of Land and Natural Resources Land Division.

Should you have any questions, please feel free to contact Nicholas Vaccaro of the Land Division's Support Services Branch at 808-587-0438.

Very truly yours,

Dean Y. Uchida
 DEAN Y. UCHIDA
 Administrator

C: Oahu District Land Office
 C&CoH Department of Planning and Permitting
 650 South King Street, Honolulu, Hawaii 96813

ADULTS DEVELOPMENT
 AQUATIC RESOURCES
 BUILDING AND OCEAN RELATION
 CONSERVATION AND
 RESOURCES DEVELOPMENT
 FORESTRY AND WILDLIFE
 HISTORIC PRESERVATION
 LAND DIVISION
 NATURAL RESOURCES MANAGEMENT

Ref.: MAMALABAY.RCH

RECEIVED
 JUL 14 2000

WILSON OKAMOTO & ASSOC, INC

Department of Land and Natural Resources
 DIVISION OF AQUATIC RESOURCES
 1151 Punchbowl Street, Room 330
 Honolulu, Hawaii 96813

Suspense: 7/10/00

TO: 1. Dean Uchida, Administrator, Land Division

[] Signature(s)
 [] Approval

- [] Approval as to Form
- [] Review and Comments
- [X] Appropriate Action
- [] Return to _____

REMARKS: This EIS Preparation Notice was received direct by us. Attached are our comment for Department coordination.

Signature: *R. D. Berry*

Administrator, DAR

Contact Person: Richard Sixberry

Phone: 7-0097

Date:

JUL 11 10 25 AM '00

STATE OF HAWAII
 Department of Land and Natural Resources
 Division of Aquatic Resources

DEPARTMENT OF DESIGN AND CONSTRUCTION
 CITY AND COUNTY OF HONOLULU
 650 SOUTH KING STREET, 11TH FLOOR
 HONOLULU, HAWAII 96813
 PHONE: (808) 522-3564 • FAX: (808) 523-4587
 WEB SITE ADDRESS: www.cc.honolulu.hi

SUSPENSE DATE: July 10, 2000

MEMORANDUM

To: William Devick, Administrator
 From: Richard Sixberry, Aquatic Biologist
 Subject: Comments on Environmental Impact Statement Preparation Notice (EISPN)

Comments Requested By: Planning Department, C & C of Honolulu

Date of Request: 6/5/00 Date Received: 6/6/00

Summary of Project

Title: West Mamala Bay Facilities Plan
 Proj. By: C&C - Department of Design and Construction
 Location: West Mamala Bay Subdistrict, Oahu

Brief Description:

The applicant is preparing a wastewater facilities plan for the service area of the existing Honolulu Wastewater Treatment Plant. The plan is to provide a long-range strategy for accommodating the collection, treatment and disposal of wastewater from this area.

Comments:

We will review the DEIS when it is completed and comment on any significant impacts adverse to aquatic resource values at a later date. Although the (EISPN) describes briefly the proposed projects and the potential effects on the environment, we suggest the forthcoming DEIS discuss in detail potential short term impacts and propose specific means for averting or minimizing adverse effects, and provide possible mitigation for unavoidable damage to natural resources. Any proposed freshwater stream or shoreline modifications necessary for the project should be adequately described in the DEIS.

JEREMY HARRIS
 MAYOR



June 5, 2000

Mr. William Devick, Acting Administrator
 Division of Aquatic Resources
 Department of Land & Natural Resources
 State of Hawaii
 1151 Punchbowl Street
 Honolulu, Hawaii 96813

Dear Mr. Devick:

Subject: West Mamala Bay Wastewater Facilities Plan
 Environmental Impact Statement (EIS) Preparation Notice
 Tax Map Keys: 9-1-01 through 12, 17, 19, 21 - 25, 27 - 30, 32 - 112;
 9-2-03, 06 - 33; 9-4-01, 02, 05 - 161; 9-5-01, 02, 04 - 69; 9-6-02 through
 08; 9-7-19 through 27, 29 - 96; 9-8-01 through 18, 20, 73; and 9-9-01
 through 77

Enclosed for your review is the EIS Preparation Notice for the West Mamala Bay Facilities Plan, which was prepared pursuant to Chapter 343, Hawaii Revised Statutes, and Title 11, Chapter 200 Administrative Rules, Department of Health, State of Hawaii.

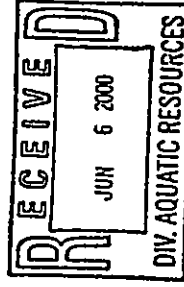
The EIS Preparation Notice will be published in the June 8, 2000 issue of the Office of Environmental Quality Control's *Environmental Notice*. Please send your original comments to:

Department of Design and Construction
 City and County of Honolulu
 650 South King Street
 Honolulu, Hawaii 96813
 Attention: Mr. Lance Manabe, Project Engineer

GARY D. L'YEE, AIA
 DIRECTOR
 ROLAND D. LIBBY, JR., AIA
 DEPUTY DIRECTOR

DIVISION OF AQUATIC RESOURCES	
Director	Supervisor
COMMISSIONER	06-198P 2000-358
ASST. DIR.	
AD. MGR.	
STAFF SVCS	
FIELD SVCS	
STATISTICS	
PLN.	
EDUCATION	
REGISTRATION	
OFFICE SVCS	
ROAD	

7/10



DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 533-4564 FAX: (808) 533-4567
WEBSITE: WWW.CO.HONOLULU.HI.US



GARY Q. L. YEE, AIA
DIRECTOR

ROLAND D. LEBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-541

August 8, 2000

Mr. Dean Uchida, Administrator
Land Division
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Uchida:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated July 11, 2000 regarding the subject EIS Preparation Notice. We offer the following in response to comments offered by your Division of Aquatic Resources in their memo dated July 10, 2000:

The West Mamala Bay Facilities Plan is being prepared as a long-term (20-year) guide for the development of wastewater facilities in the area served by the Honolulu Wastewater Treatment Plant. Hence, the preliminary recommendations and alternatives presented are facility development concepts for meeting projected wastewater service needs. The EIS for the West Mamala Bay Facilities Plan is intended to comprehensively address potential impacts of these development concepts and alternatives comprising a "larger action." Over the next two decades, as the development concepts recommended for implementation in the Final Report of the West Mamala Bay Facilities Plan are developed into specific project proposals, additional environmental assessments or EIS may be required to provide detailed assessments of project impacts, including those on stream and shoreline resources.

As requested, we will submit to the Land Division five copies of the forthcoming Draft EIS when it is distributed for public review.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,


-OR- GARY Q. L. YEE, AIA
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

Mr. William Devick
Page 2
June 5, 2000

Please send copies of the comments to the following:

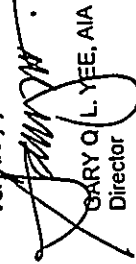
Office of Environmental Quality Control
State of Hawaii
235 S. Beretania Street, Room 702
Honolulu, Hawaii 96813
Attention: Ms. Genevieve Salmonson, Director

and

Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
Attention: Mr. Earl Matsukawa, Project Manager

Your comments must be postmarked by July 10, 2000. Your input in the EIS Preparation Notice is appreciated.

Very truly yours,


GARY Q. L. YEE, AIA
Director

Enclosure

cc: Mr. Earl Matsukawa, Wilson Okamoto & Associates, Inc.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
 650 SOUTH KING STREET, 11TH FLOOR
 HONOLULU, HAWAII 96813
 Phone: (808) 523-4564 Fax: (808) 523-4567
 Website: www.cc.honolulu.gov



GARY L. YEE, AIA
 DIRECTOR
 ROLAND D. LIBBY, JR., AIA
 DEPUTY DIRECTOR

DCP 2000-534

August 8, 2000

Ms. Linnel T. Nishioka, Deputy Director
 Commission on Water Resource Management
 Department of Land and Natural Resources
 State of Hawaii
 P.O. Box 621
 Honolulu, Hawaii 96809

Dear Ms. Nishioka:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated June 14, 2000 regarding the subject EIS Preparation Notice. We offer the following responses in the respective order of your comments:

1. The West Mamala Bay Facilities Plan includes provisions for water reclamation at the Honolulu Wastewater Treatment Plant. The Plan does not, however, address the use of reclaimed water except to the extent of identifying currently planned uses.
2. The West Mamala Bay Facilities Plan is being prepared as a long-term (20-year) guide for the development of wastewater facilities in the area served by the Honolulu Wastewater Treatment Plant. Hence, the design and construction of specific improvements implementing the Plan will span two decades. As these specific improvements are designed, the need for altering the beds and banks of stream channels will be determined, as will the requirements for associated stream channel alteration permits.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,

Gary L. Yee
 GARY L. YEE, AIA
 Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

THOMAS E. JOHNS
 BRUCE S. ANDERSON
 ROBERT L. ORLANDO
 DAVID A. HENNING
 HERBERT B. HONOHONO, JR.
 LYNNE T. NISHIOKA
 9/15/01
 JLN



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

RECEIVED
 JUN 19 2000

WILSON OKAMOTO & ASSOC., INC.

Mr. Lance Manabe
 Department of Design and Construction
 City and County of Honolulu
 650 South King Street
 Honolulu, HI 96813

Dear Mr. Manabe:

West Mamala Bay Wastewater Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

- We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.
- We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- We are concerned about 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.
- A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.
- The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.
- Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the riparian zone. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Planning Department and the developer's acceptance of any resulting requirements related to erosion control.
- If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).
- If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.
- OTHER:

If there are any questions, please contact the Commission staff at 587-0218.

Sincerely,
Linnel T. Nishioka
 LINNEL T. NISHIOKA
 Deputy Director

Office of Environmental Quality Control
 Wilson Okamoto & Associates, Inc.

LN:ss

EMILY J. CATRANO
ADMINISTRATOR

00-1345
-7



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
845 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5007

RECEIVED
JUL 19 3 30 PM '00
KAZU HAYASHIDA
DIRECTOR
DESIGN & CONSTRUCTION DIVISION
DIVISION OF INVESTIGATION & PLANNING
1500 ALI DRUMMO

Mr. Gary Yee
Page 2
HWY-PS 2.9188

JUL 18 2000

4. Construction plans for all work done within our highway rights-of-way must be prepared and submitted to us for our review and approval.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

c: Office of Environmental Quality Control

Mr. Gary Yee, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 2nd Floor
Honolulu, Hawaii 96813

Attention: Mr. Lance Manabe, Project Manager

Dear Mr. Yee:

Subject: Environmental Impact Statement (EIS) Preparation Notice, West Mamala Bay
Wastewater Facilities Plan, Ewa, Central and Portion of Primary Urban Center,
Oahu, Hawaii

Thank you for your letter of June 5, 2000, transmitting the subject document for our review and comments. We have the following comments:

1. The proposed long-term improvements to the wastewater collection, treatment and disposal system for the Honolulu Wastewater Treatment Service area will not adversely impact our State highway facilities. However, we have concerns regarding the disruption of traffic flow during project construction and this should be minimized or satisfactorily mitigated.
2. Working in the evening hours (especially when schools are not in session) should be considered to shorten the construction time period, thereby minimizing the inconvenience that would be experienced by the traveling public.
3. Prior coordination/consultation with our highway staff engineers should be initiated early during the planning/design phase of the project to discuss policy, procedures and guidelines regarding placement of underground utilities, structures, etc. within our highway rights-of-way.

IN REPLY REFER TO:
HWY-PS
2.9188

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-1564 Fax: (808) 523-4567
Website: www.cc.honolulu.gov



SELENY HARRIS
MAYOR

GARY O. L. YEE, AIA
DIRECTOR
ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-547

August 8, 2000

Mr. Kazu Hayashida, Director
Department of Transportation
State of Hawaii
859 Punchbowl Street
Honolulu, Hawaii 96813-5097

Dear Mr. Hayashida:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

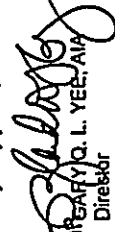
Thank you for your letter dated July 18, 2000 regarding the subject EIS Preparation Notice. We offer the following response to your comments:

The West Mamala Bay Facilities Plan is being prepared as a long-term (20 year) guide for the development of wastewater facilities in the area served by the Honolulu Wastewater Treatment Plant. Hence, the design and construction of specific improvements implementing the Plan will span two decades. Please be assured that as these specific improvements proceed to construction, efforts to minimize the disruption of traffic flow will be pursued, including:

1. Consideration of scheduling construction activities during evening hours, if appropriate, to minimize inconveniences to the travelling public.
2. Consultation and coordination with your highway staff engineers during early phases of planning/design for specific projects to address policy, procedures and guidelines regarding the placement of underground facilities within State highway rights-of-way.
3. Submission of construction plans for all work with State highway rights-of-way to your department for review and approval.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,


GARY O. L. YEE, AIA
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.



Barbers Point
Naval Air Station
Redesignment Commission
Developing the Community of the Future

RECEIVED

00 JUN 19 11 29

6-13-2000
Benjamin J. Carrasco
Governor
Mark Egan
Commissioner
William M. Bass
Executive Director

Ref. No.: BP-0805

June 16, 2000

Mr. Gary Q. L. Yee, Director
Department of Design & Construction
City and County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813
Attn: Mr. Lance Manabe, Project Engineer

Subject: EIS Preparation Notice for the West Mamala Bay Wastewater Facility Plan

Dear Mr. Yee:

Thank you for the opportunity to comment on the EIS Preparation Notice.

The EIS Preparation Notice notes that the wastewater flow from the KCDD was included into the wastewater flow analysis, but was estimated at 1.5 mgd. We understand that 1.5 mgd was used for the KCDD wastewater flow estimate because this was the former NAS Barbers Point contracted flow allocation into the Honouliuli WWTP.

In a draft report prepared by our consultant R. M. Towill in April 1999, a higher ultimate sewer flow was projected for "full build out" in 20+ years, based on end user provided land use absorption projections. However, in reference to the development schedules, actual flows will not come close to this within the next 10 to 20 years, and it is undetermined when the Navy's current 1.5 mgd allocation into the Honouliuli WWTP will be exceeded. The calculated 20+ year ultimate "full build out" KCDD wastewater flow from this April 1999 draft report were as follows:

	End Users	w/Navy
Average Design Flow	2,903 mgd	4,069 mgd
Maximum Design Flow	6,931 mgd	9,073 mgd
Peak Design Flow	9,463 mgd	12,184 mgd

The Department of Environmental Services (ENS) is pursuing acquisition of both the Navy retained and the non-Navy retained portions of the KCDD wastewater systems. It is anticipated that ENS will provide service to both the non-Navy end users and the Navy under this arrangement.

Because of the low rate of development at KCDD, and since the KCDD wastewater flow is (and will continue to be) via a force main that directly connects to Honouliuli WWTP, the KCDD wastewater flow is not expected to significantly impact the West Mamala Bay collection system. KCDD wastewater flows at full build out, although far in the future will affect the ultimate capacity available at the Honouliuli WWTP.

If there are any questions regarding this letter, please call Infrastructure Development Manager Bennett Mark at 682-6383.

Sincerely,

William M. Bass
Executive Director

cc: Ms. Genevieve Salmonson, OEQC
Mr. Earl Matsukawa, Wilson Okamoto and Assoc.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 Fax: (808) 523-4567
Website: www.cd.honolulu.hi.us



GARY O. L. YEE, AIA
DIRECTOR
ROLAND D. LEBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-531

August 8, 2000

Mr. William M. Bass, Executive Director
Barbers Point Naval Air Station
Redevelopment Commission
P.O. Box 75268
Kapolei, Hawaii 96707-0268

Dear Mr. Bass:

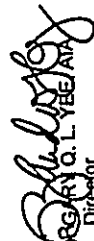
Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated June 16, 2000 (Ref. No. BP-0805). We appreciate the information you have provided regarding future wastewater demands at the Kalaheba Community Development District. When the wastewater flow projections were being prepared for the West Mamala Bay Facilities Plan, there was no information available for the KCDD. The population projections prepared by the Department of Planning and Permitting (DPP) on which the wastewater flow projections were based indicated a decrease in population for the KCDD area through 2020. Therefore, the amount of flow the City had been contracted by the Navy to receive was used as the flow projection. As stated in the EIS Preparation Notice, the recommendations developed through the West Mamala Bay Facilities Plan will need to be reviewed when the collection and treatment needs for the KCDD are determined.

As indicated in your letter, the KCDD is served by a single line directly to the Honolulu Wastewater Treatment Plant (WWTP). Therefore, we concur that there would be little impact on the rest of the collection system if this line were to be upgraded in the future. With respect to wastewater treatment and disposal, flows from the KCDD would be added to the overall volume of wastewater received at the Honolulu WWTP. To the extent that future flows generated at the KCDD represent a redistribution of flows projected within the entire service area, there would be no impact.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,


GARY O. L. YEE, AIA
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 521-8743 • INTERNET: www.ci.honolulu.hi.us/planning



RECEIVED
JUL 05 2000

WILSON OKAMOTO & ASSOC., INC.

July 3, 2000

RANDALL K. FUJIKI, AIA
DIRECTOR

LORETTA E. C. CAHILL
DEPUTY DIRECTOR

TH 2000/CLOG-3383

EM

Gary Q. L. Yee, AIA, Director
July 3, 2000
Page 2

4. The Kalaeloa Redevelopment Commission has developed a Kalaeloa Community Development District plan and should be consulted regarding the anticipated flows from the district and plans for conveyance of flows to the Honouliuli system. For a current perspective on the development of the draft Central Oahu Sustainable Communities Plan, Bob Stanfield of the Department of Planning and Permitting (Ph. 527-6094) should be contacted to consider any significant revisions in the growth policy direction of the Central Oahu area.

Thank you for the opportunity to comment on this matter. Should you have any questions, please contact Tim Hata of our staff at 527-6070.

RKF:js

cc: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
/ Mr. Earl Matsukawa, Wilson Okamoto & Associates, Inc.

TO: GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: LANCE MANABE, PROJECT ENGINEER

FROM: RANDALL K. FUJIKI, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: WEST MAMALA BAY WASTEWATER FACILITIES PLAN
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE, TAX MAP KEYS: 9-1-01 THROUGH 12, 17, 19, 21-25,
27-30, 32-112; 9-2-03, 06-33; 9-4-01, 02, 05-161; 9-5-01, 02, 04-69;
9-6-02 THROUGH 08; 9-7-19 THROUGH 27, 29-96; 9-8-01
THROUGH 18, 20, 73; AND 9-9-01 THROUGH 77, OAHU, HAWAII

In response to your memorandum of June 5, 2000, we have reviewed the EIS Preparation Notice and have the following comments.

1. In Section 2.1 Collection System, pg. 2-1, please define the manhole, structural, and corrosion deficiencies and give examples.
2. In Section 2.3 Disposal System, pg. 2-7, the EISFN indicates that the effluent disposal capacity of the existing ocean outfall may be exceeded by the projected Peak Wet Weather Flow (PWVWF) for 2001. The EIS should indicate the capacity of the existing ocean outfall and the projected PWVWF for 2001.
3. In Section 3.5 Treatment and Disposal, pg. 33, should the fourth bullet indicate 38 mgd ocean discharge rather than 51 mgd? This section also indicates that, if PWVWF is reduced by equalization in the collection system, PWVWF at the Honouliuli WWTP could also be reduced. The EIS should provide an estimate of the PWVWF at the Honouliuli WWTP by including equalization in the collection system.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 533-4564 Fax: (808) 533-4567
Website: www.cc.honolulu.hi.us



JANELYN HARRIS
SALVOR

GARY D. L. YEE, AIA
DIRECTOR
ROLAND D. LEBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-536

August 8, 2000

MEMORANDUM

TO: MR. RANDALL FUJIKI, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: GARY D. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE

Thank you for your letter dated July 30, 2000 (Ref. TH 2000/CLOG-3383) regarding the subject EIS Preparation Notice. We offer the following responses in the respective order of your comments:

1. The Draft EIS will discuss the types of structural and corrosion deficiencies that have been identified in the collection system.
2. The existing capacity of the Barbers Point Deep Ocean Outfall is 112 mgd under current gravity flow conditions. This will be stated in the Draft EIS. The 1995 and 2020 Peak Wet Weather Flows (PWWF) were derived from a computer flow model of the hypothetical "design" storm. Based on an interpolation of the projected increase in PWWF from 1995 to 2020, the EIS Preparation Notice indicated that the capacity of the outfall would be exceeded in 2001, when the projected PWWF would exceed 112 mgd. A recent review of this interpolation indicates that the PWWF already exceeds the outfall's capacity. The Draft EIS will update this information.
3. It should be noted that the PWWF treatment capacity of the Honolulu WWTP is also 112 mgd, which is less than the modeled PWWF. The purpose of modeling PWWF is to establish the capacity requirements for future facilities.
3. The volume of effluent that would normally be discharged into the ocean would be 38 mgd, assuming that 13 mgd is treated and diverted for reclamation. It is prudent, however, to account for the possibility that all flows may need to be discharged through the outfall. This could occur during emergencies such as operational problems with reclamation facilities, or during periods of low-demand for reclaimed water. The Draft EIS will revise the preliminary recommendation for effluent disposal state: "Up to 51-mgd of ocean disposal..."

Mr. Randall Fujiki

-2-

August 8, 2000

The four flow equalization alternatives developed for the East Interceptor System are based on specific collection system deficiencies identified through computer modeling of PWWF generated by the design storm. Depending upon which combination of flow equalization alternatives, if any, is recommended, the effect on modeled PWWF received at the Honolulu WWTP may differ. There are 14 possible "hybrid" combinations based on the four interchangeable alternative components. The EIS process is being used to obtain input that will be considered in making a recommendation for the Final Report of the Facilities Plan. Based upon the collection system recommendation, the associated treatment plant recommendations may need to be adjusted in the Final Report to account for any reduction in PWWF that may be achieved. For EIS purposes, however, the preliminary recommendations for the treatment plant are based on the "worst case" scenario assuming no flow equalization within the collection system.

The Barbers Point Naval Air Station Redevelopment Commission has commented on the EIS Preparation Notice regarding future wastewater flows from the Kalaeloa Community Development District (KCDD). Their comment letter and our response are attached.

As discussed in the EIS Preparation Notice, DPP's population data and projections were used to assess the current and future adequacy of the wastewater collection, treatment and disposal facilities serving the Study Area. Specifically, DPP's Traffic Analysis Zone (TAZ) data were used to develop Average Daily Wastewater Flow (ADWWF) projections for the various collection basins. We understand that these data reflect the City's current growth policies for the three affected Development Plan areas, including Ewa, Central Oahu and Primary Urban Center.

While we recognize that policies and associated population data are subject to periodic revision, it is unreasonable to expect that corresponding updates can be made to the Facilities Plan as it is being developed. The Facilities Plan is a comprehensive and long-term strategy for meeting the wastewater service needs of the Study Area. As specific projects recommended by the Facilities Plan move toward implementation, the rationale supporting the recommendation will need to be reviewed to determine if the documented assumptions, policies and information on which they are based remain valid. If necessary, specific projects and strategies may need to be adjusted or refined. The purpose of the Facilities Plan is to document a strategy with supporting rationale against which future decisions can be considered.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Attachment

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

CITY AND COUNTY OF HONOLULU

POLICE DEPARTMENT
801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 929-3111
<http://www.honolulu.gov>
www.co.honolulu.hi.us



JEREMY HARRIS
MAYOR

LEE D. DONOHUE
CHIEF
MICHAEL CARVALHO
ROBERT AU
DEPUTY CHIEFS

OUR REFERENCE CS-JNB

RECEIVED
JUL 06 2000

June 30, 2000

WILSON OKAMOTO & ASSOC., INC.

TO: GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTENTION: LANCE MANABE, PROJECT ENGINEER

FROM: LEE D. DONOHUE, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: WEST MAMALA BAY WASTEWATER FACILITIES PLAN
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE
TAX MAP KEYS: 9-1-01 THROUGH 12, 17, 19, 21 - 25, 27 - 30,
32 - 112; 9-2-03, 06 - 33; 9-4-01, 02, 05 - 161; 9-5-01, 02, 04 - 69;
9-6-02 THROUGH 08; 9-7-19 THROUGH 27, 29 - 96;
9-8-01 THROUGH 18, 20, 73; AND 9-9-01 THROUGH 77

EM

Mr. Gary Q. L. Yee, AIA, Director
Page 2
June 30, 2000

If there are any questions, please call Carol Sodehani of the Support Services Bureau at 529-3658.

Sincerely,
LEE D. DONOHUE
Chief of Police

By *Eugene Uemura*
EUGENE UEMURA
Assistant Chief
Support Services Bureau

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

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

In spite of mitigation measures, construction-related dust, noise, odors, and traffic complaints along the interceptor route as well as the treatment plants will cause an inevitable impact on calls for service in Police Districts 2 (Wahiawa), 3 (Pearl City), and 8 (Kapolei).

There should be negligible impact on police services after the construction phase has been completed.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 Fax: (808) 523-4187
Website: www.cd.honolulu.gov



JEREMY HARRIS
MAYOR

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LUBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-537

August 8, 2000

MEMORANDUM

TO: MR. LEE D. DONOHUE, CHIEF
HONOLULU POLICE DEPARTMENT

FROM: FOR GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE

Thank you for your letter dated June 30, 2000 regarding the subject EIS Preparation Notice.

The Draft EIS will discuss potential construction-related impacts on police services as specific improvements recommended by the West Mamala Bay Facilities Plan are implemented over the next two decades. Police service will likely be required in response to dust, noise, odor and traffic complaints received at Police Districts 2 (Wahiawa), 3 (Pearl City) and 8 (Kapolei). We concur that post-construction impacts on police service will be negligible.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3373 KOA PALA STREET, SUITE 402
HONOLULU, HAWAII 96818-1849



JEREMY HARRIS
MAYOR

ATTILIO K. LEONARDI
FIRE CHIEF
JOHN CLARK
DEPUTY FIRE CHIEF

AMS
2-11

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 533-4564 Fax: (808) 533-4567
Website: www.cc.honolulu.gov



GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

June 22, 2000

DCP 2000-530

August 8, 2000

TO: GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: LANCE MANABE, PROJECT ENGINEER
PLANNING AND PROGRAMMING

FROM: JOHN CLARK, ACTING FIRE CHIEF

SUBJECT: WEST MAMALA BAY WASTEWATER FACILITIES PLAN
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION NOTICE
TAX MAP KEYS: 9-1-001 THROUGH 012, 017, 019, 021-025, 027-030,
032-112; 9-2-003, 006-033; 9-4-001, 002, 005-161; 9-5-001, 002, 004-069;
9-6-002 THROUGH 008; 9-7-019 THROUGH 027, 029-096; 9-8-001 THROUGH
018, 020, 073; AND 9-9-001 THROUGH 077

MEMORANDUM

TO: MR. ATTILIO K. LEONARDI, FIRE CHIEF
HONOLULU FIRE DEPARTMENT

FROM: GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE

We received your memorandum dated June 5, 2000, regarding the above-mentioned project. The Honolulu Fire Department requests that you comply with the following:

1. Maintain fire apparatus access throughout the construction site for the duration of the project.
2. Notify the Fire Communication Center (523-4411) of any interruption in the existing fire hydrant system during the project.

Should you have any questions, please call Battalion Chief Kenneth Silva of our Fire Prevention Bureau at 831-7778.

JOHN CLARK
Acting Fire Chief

JCKS:ji
cc: Genevieve Salmonson, Office of Environmental Quality Control
Earl Matsukawa, Wilson Okamoto & Associates, Inc.

Thank you for your letter dated June 22, 2000. The West Mamala Bay Facilities Plan is being prepared as a long-term (20 year) guide for the development of wastewater facilities in the area served by the Honouliuli Wastewater Treatment Plant. Hence, the design and construction of specific improvements implementing the Plan will span two decades. Please be assured that as these specific improvements proceed to construction, they will comply with your request as follows:

1. Fire apparatus access will be maintained throughout the construction site for the duration of the project.
2. The Fire Communication Center will be notified of any interruption in the existing fire hydrant system during the project.

We appreciate your time and effort in reviewing the EIS Preparation Notice.
cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
30 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843



July 7, 2000

SENIOR PROJECT MANAGER
COPY
EDDIE F. KANE, P.E., V.P. OPERATIONS
CHARLES A. WOOD, V.P. PLANNING
JAN H. Y. AME
HERBERT S. K. SALOMUA, SR.
BARBARA KIM STANTON
KAZUHIKAWA, E-Office
ROSS S. SASAKAWA, E-Office
CLIFFORD S. JAMES
Manager and Chief Engineer

RECEIVED
JUL 12 2000

TO: MR. GARY Q.L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: LANCE MANABE, PROJECT ENGINEER

FROM: FOR CLIFFORD S. JAMES

SUBJECT: YOUR MEMORANDUM DATED JUNE 5, 2000 REGARDING THE ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR THE WEST MAMALA BAY WASTEWATER FACILITIES PLAN

WILSON OKAMOTO & ASSOC., INC.

Thank you for the opportunity to review and comment on the Environmental Impact Statement Preparation Notice (EISP/N) for the West Mamala Bay wastewater facilities plan.

We have the following comments:

1. Our pre-assessment comments of January 24, 2000 are still applicable and included in Section 8 of the EISP/N.
2. The Draft Environmental Impact Statement (DEIS) should expand on the benefits of reuse as a disposal alternative. Chapter 5 only mentions the reuse and secondary treated water may be disposed through the ocean outfall.
3. We reserve further comments until the DEIS is submitted for our review.

If you have any questions, please contact Barry Usagawa at 527-5235.

Enclosure
cc: Earl Matsuoka, Wilson Okamoto & Associates, Inc.
Genevieve Salmonson, Office of Environmental Quality Control

PROJECT SUMMARY

GMP Associates, Inc., under contract with the Board of Water Supply, City and County of Honolulu, was tasked to prepare a preliminary design and environmental assessment for a desalination facility. The facility would have an initial capacity of 5 million gallons per day and would be expanded incrementally to 35 million gallons per day. In addition to preparing the preliminary design and environmental assessment, the project scope included: a site selection, an evaluation and selection of desalination technology, a review of available water quality data, a review of utility requirements and availability, identification of permits needed, an estimation of project cost, a discussion of the project's impact to long-range planning and a review of the options available for financing.

A site in Ewa, which was formerly part of the Barbers Point Naval Air Station, was selected for the project after comparison with sites on Sand Island and within Keehi Lagoon Beach Park showed the Ewa site to be more favorable. The site, which adjoins James A. Campbell Industrial Park, is an ideal location for the desalination project and the site land is available to the Board of Water Supply free of cost. However, one drawback to the Ewa site is that it is undeveloped and lacks utilities.

Reverse osmosis was selected as the preferred desalination technology after an economic comparison between reverse osmosis and multistage flash distillation. Although two potential hosts for distillation steam were identified, the estimated cost for the steam was found to be uneconomical in comparison to electrical costs for a reverse osmosis plant. A preliminary design was developed for a reverse osmosis desalination facility at the Ewa site.

The Lower Caprock Aquifer was identified as the feedwater source for the initial two phases of the plant at the Barbers Point Naval Air Station site. This aquifer would be tapped to produce up to 10 million gallons per day of product water. When the plant capacity is expanded beyond 10 million gallons per day, deeper wells would be drilled to the Basal Aquifer, which lies several hundred feet below the caprock aquifer. The Basal Aquifer would be tapped for potable water production up to 35 million gallons per day. A review of available water quality data from existing wells near the prospective Barbers Point Naval Air Station desalination site found most of the data to be of limited significance due to the shallow depths of the wells. Research of available sources on environmental contamination found no direct evidence for contamination of nearshore ocean water or either the Lower Caprock or Basal Aquifers.

Prior to design of the desalination facility, exploratory wells will be drilled and a pilot scale desalination constructed and operated. The exploratory wells will allow an assessment of feedwater quality and quantity. The pilot unit will allow for an evaluation of feedwater pretreatment requirements and an assessment of membrane performance and life for the reverse osmosis process.

104-27-2000 15144 FROM WASTEWATER FRONT PISCES/EC TO WILSON DAVOTO P.02
 10 2000 - 0004 T

BOARD OF WATER SUPPLY
 CITY AND COUNTY OF HONOLULU
 1 SOUTH BIPOLOA STREET
 HONOLULU, HAWAII 96813

RECEIVED

TO JAN 27 08 59
 January 24, 2000

DESIGN & CONSTRUCTION
 DIVISION OF
 PLANNING & PROGRAMMING
 MR. GARY YEE, ACTING DIRECTOR
 DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: *Clifford S. Jamile*
 CLIFFORD S. JAMILE

SUBJECT: YOUR TRANSMITTAL OF DECEMBER 23, 1999
 ON THE PRE-ASSESSMENT CONSULTATION PHASE
 FOR THE ENVIRONMENTAL IMPACT STATEMENT
 FOR THE WEST MAMALA BAY WASTEWATER
 FACILITIES PLAN, EWA AND CENTRAL OAHU

Plan
Plan
Plan
 GARY YEE, Director
 CHARLEY A. STEW, Vice Director
 JAMES H. HARRIS, Manager
 CLIFFORD S. JAMILE, Manager
 KAREN M. HAYASHIDA, Director
 DEPT. OF DESIGN AND CONSTRUCTION
 150 SOUTH BISHOP STREET, 15TH FLOOR
 HONOLULU, HAWAII 96813
 PHONE: (808) 521-2500 FAX: (808) 521-4111
 TDD: (808) 521-4111

RECEIVED
 JAN 27 12 55

DEPARTMENT OF DESIGN AND CONSTRUCTION
 CITY AND COUNTY OF HONOLULU
 150 SOUTH BISHOP STREET, 15TH FLOOR
 HONOLULU, HAWAII 96813
 PHONE: (808) 521-2500 FAX: (808) 521-4111
 TDD: (808) 521-4111



May 23, 2000

GARY Q. L. YEE, Director
 ROLAND S. LORRY, Jr.
 DEPT. OF DESIGN AND CONSTRUCTION

DCP 2000-353

MEMORANDUM

TO: MR. CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER
 BOARD OF WATER SUPPLY

FROM: GARY Q. L. YEE, AIA, DIRECTOR
 DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
 NOTICE PRE-ASSESSMENT CONSULTATION
 WEST MAMALA BAY FACILITIES PLAN
 EWA AND CENTRAL OAHU, HAWAII

Thank you for your letter dated January 24, 2000 regarding the subject EIS Preparation Notice Pre-Assessment Consultation. We offer the following responses in the respective order of your comments:

1. There are four major unsewered areas in the Study Area for the West Mamala Bay Facilities Plan. Presently, the City has two Capital Improvement Projects addressing the unsewered areas at Waimano and Alea Heights respectively. The Waimano Sewers Improvement Project has been designed and was scheduled for construction bidding in late 1999. The City is working with SSFM Engineers on developing a recommendation for the Alea Heights unsewered area.

The West Mamala Bay Facilities Plan addresses the remaining two unsewered areas for which planning has not been initiated. The preliminary recommendation for the Honolulu Unsewered Area is to defer action since master plans are being developed for the East Kapolei area. The master plans include new wastewater collection systems that could accommodate the Honolulu Unsewered Area.

Thank you for the opportunity to review the document for the proposed facilities plan. We have no objections to the long-range plan for the collection, treatment and disposal of wastewater for the West Mamala Bay Sub-district. However, we do have the following comments that should be addressed during the review process:

1. We note the summary indicates there are large unsewered areas within Ewa Beach, Honolulu, Waimano and Alea Heights. The summary recommends, however, that a sewer collection system is constructed for only the Ewa Beach area due to the close proximity and availability of the existing system. We feel that sewer systems should also be constructed for the other areas due to the detrimental effects that cesspools and other ground disposal methods have on our groundwater sources. This would be especially true for the Waimano and Alea areas since we have possible wells in the immediate vicinity. An implementation schedule should also be established and noted.
2. The summary briefly mentions the U.S. Filter's reuse project at Honolulu as part of the treatment and disposal recommendations. There should be an expanded discussion of this reuse project and other potential reuse projects within the study area, which would reduce effluent discharges into the ocean and provide alternative water supplies.
3. Please note that as part of our desalination project at Barber's Point, there will be a proposed brine outfall discharging to near shore waters. The facilities plan should be cognizant of this due to the potential impacts the discharge may have on your water quality analyses, hydrologic models and permits for the near shore waters of West Mamala Bay.
4. We reserve further comment until the Environmental Impact Statement Preparation Notice is submitted for our review.

If you have any questions, please contact Barry Ungers at 527-5235.

FINAL SUBMITTAL

HONOLULU DESALINATION STUDY: ENVIRONMENTAL ASSESSMENT

A capital cost of \$63.73 million and an annual operations and maintenance cost of \$5.87 million were determined for the initial 5-million-gallons-per-day desalination facility. Based upon a capital recovery over 20 years at 7% interest, a product cost of \$6.79 per 1,000 gallons of product water was calculated.

Desalination plays an important role in the Board of Water Supply's long-range planning for water development. As the sustainable yield of Oahu's freshwater resources is approached, desalination becomes a viable alternative for potable water production. Desalination may also become a cost-effective alternative for source development should costs to develop available groundwater sources continue to rise.

216230.087
 PAGE PS-2

DAI ASSOCIATES, INC.
 MAY 2000

F-401/UV
P-481/00

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4544 • FAX: (808) 523-4587
WEB SITE ADDRESS: www.dcd.honolulu.gov



SERENY HARRIS
MAYOR

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LUSBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-2000

June 5, 2000

MEMORANDUM

TO: MR. CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY WASTEWATER FACILITIES PLAN
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE
TAX MAP KEYS: 9-1-01 THROUGH 12, 17, 19, 21 - 25, 27 - 30,
32 - 112; 9-2-03, 06 - 33; 9-4-01, 02, 05 - 161; 9-5-01, 02, 04 - 69;
9-6-02 THROUGH 08; 9-7-19 THROUGH 27, 29 - 96; 9-8-01 THROUGH
18, 20, 73; AND 9-9-01 THROUGH 77

Enclosed for your review is the EIS Preparation Notice for the West Mamala Bay Facilities Plan, which was prepared pursuant to Chapter 343, Hawaii Revised Statutes, and Title 11, Chapter 200 Administrative Rules, Department of Health, State of Hawaii.

The EIS Preparation Notice will be published in the June 8, 2000 issue of the Office of Environmental Quality Control's *Environmental Notice*. Please send your original comments to:

Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813
Attention: Mr. Lance Manabe, Project Engineer

Mr. Clifford S. Jamile

-2-

May 23, 2000

- The Pre-Final Report of the West Mamala Bay Facilities Plan includes a discussion of the various water reclamation efforts that were considered in developing the preliminary recommendations. For EIS-related documents, much of the information contained in the full report is summarized. While we concur that more reuse would reduce ocean discharge and provide alternative water supply, assuming high levels of reuse could be regarded as overly optimistic with respect to lessening the plant's future impact on coastal water quality and the economic viability of water reclamation facilities to be self-supporting. Therefore, the preliminary recommendation in the Prefinal Plan Report is conservative in suggesting continued reliance on disposal through the ocean outfall. Should the demand for reclaimed water exceed current expectations, additional reclamation could become economically viable and the reliance on the ocean outfall for disposal reduced.
- We acknowledge that your planned desalination project could impact water quality analyses relating to the Barbera Point ocean outfall. Please keep us apprised of your desalination project and submit plans as they are developed for our review and comment.
- We welcome your review and comments on the forthcoming EIS Preparation Notice.

Your participation in the pre-assessment consultation phase of the EIS process is appreciated.

If you have any questions or concerns, please call Lance Manabe at 523-4551.

①

Mr. Clifford S. Jamile

-2-

June 5, 2000

Please send copies of the comments to the following:

Office of Environmental Quality Control
State of Hawaii
235 S. Beretania Street, Room 702
Honolulu, Hawaii 96813
Attention: Ms. Genevieve Salmonson, Director

and

Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
Attention: Mr. Earl Matsukawa, Project Manager

Your comments must be postmarked by July 10, 2000. Your input in the EIS Preparation Notice is appreciated.

Enclosure

cc: Mr. Earl Matsukawa, Wilson Okamoto & Associates, Inc.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 533-4164 Fax: (808) 533-4167
Website: www.cc.honolulu.hi.us



XEREMY HARRIS
MAYOR

GARY D. L. YEE, AIA
DIRECTOR

ROLAND D. LEBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-545

August 8, 2000

MEMORANDUM

TO: MR. CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: FOR GARY D. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE

Thank you for your letter dated July 7, 2000 regarding the subject EIS Preparation Notice. We offer the following responses in the respective order of your comments:

1. Your comments of January 24, 2000, received during pre-assessment consultation, along with our response of January 27, 2000 will be reproduced in the forthcoming Draft EIS.
2. As discussed in Section 3.5 of the EIS Preparation Notice, the preliminary recommendation for the Honouliuli Wastewater Treatment Plant includes a reasonably attainable level of beneficial use for both reclaimed water and biosolids that would meet the City's Consent Decree requirements. For liquid treatment, this includes the existing 13-mgd of secondary treatment as well as the 13-mgd of advanced treatment for reuse represented by the Ewa Water Recycling Facility. The discussion in Chapter 5 pertains to determining the required capacity of the ocean outfall. Assumed in this determination is the potential for accommodating bypassed secondary effluent and/or reuse flows. This is a conservative assumption in the event of treatment disruptions or other conditions that may require temporary bypasses to the ocean outfall.
3. We acknowledge that you are reserving further comment until the DEIS is submitted for your review.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU
RECEIVED

00 FEB 16 A9:37



DESIGN & CONSTRUCTION
100 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4564 FAX: (808) 523-4567
WWW.CC.HONOLULU.HI.US

5/11/00 LAM
AD: (10) EIS/PA Recm. by TF ✓
Comments: insufficient
DPR - need justification
today. action was
not included w/ draft.
Tel lanes will draft
response and include
w/ Feb 10, 2000
They can help
you file for
allow the
letter?.

February 10, 2000

TO: GARY Q. L. YEE, AIA, ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: WILLIAM D. BALFOUR, JR., DIRECTOR

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE (EISP/N)
PRE-ASSESSMENT CONSULTATION
WEST MAMALA BAY WASTEWATER FACILITIES PLAN
EWA AND CENTRAL OAHU, HAWAII

We have reviewed the above-referenced document and concur with the preliminary recommendations to address capacity deficiencies of the East Interceptor System. Deficiencies would be resolved through system upgrades and flow equalization instead of replacing the entire system as set forth in the Pre-Final Wastewater Facilities Plan Report for the subject project.

Should you have any questions, please call Mr. John Reid, Planner, at 547-7396.

W.D. Balfour, Jr.
WILLIAM D. BALFOUR, JR.
DIRECTOR

WDB:CU
10-3102M

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 Fax: (808) 523-4567
Website: www.cc.honolulu.hi.us



JEREMY HARRIS
MAYOR

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LEBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-535

August 8, 2000

MEMORANDUM

TO: MR. WILLIAM D. BALFOUR, JR., DIRECTOR
DEPARTMENT OF PARKS AND RECREATION

FROM: *[Signature]*
GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
PRE-ASSESSMENT CONSULTATION
WEST MAMALA BAY FACILITIES PLAN
EWA AND CENTRAL OAHU, HAWAII

Thank you for your letter dated February 10, 2000 regarding the subject EIS Preparation Notice Pre-Assessment Consultation.

We acknowledge your concurrence with the preliminary recommendations for and addressing capacity deficiencies of the East Interceptor System as presented in the Pre-Final West Mamala Bay Facilities Plan.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

DC 2000-0051f

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
660 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 533-4384 • FAX: (808) 533-4687
WEB SITE ADDRESS: www.dcd.honolulu.gov

JERRY HAMAI
DIRECTOR

DESIGN & CONSTRUCTION
DIVISION



GARY D. L. YEE, AIA
DIRECTOR
ROLAND D. LEBBY, JR., AIA
DEPUTY DIRECTOR

L 00-39

June 8, 2000

August 8, 2000

DCP 2000-532

MEMORANDUM

TO: JAY K. HAMAI, ACTING CHIEF
DIVISION OF PLANNING AND PROGRAMMING

ATTN: LANCE MANABE

FROM: JERRY T. IWATA, CHIEF
DIVISION OF LAND SURVEY AND ACQUISITION

SUBJECT: WEST MAMALA BAY WASTEWATER FACILITIES
PLAN ENVIRONMENTAL IMPACT STATEMENT
(EIS) PREPARATION NOTICE

Thank you for the opportunity to review the attached Environmental Impact Statement. We have no comments.

Attach.

MEMORANDUM

TO: MR. JERRY T. IWATA CHIEF
DIVISION OF LAND SURVEY AND ACQUISITION

FROM: JAY K. HAMAI, ACTING CHIEF
DIVISION OF PLANNING AND PROGRAMMING

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE

Thank you for your letter dated June 8, 2000 indicating that you have no comments to offer at this time regarding the subject EIS Preparation Notice.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
PACIFIC PARK PLAZA • 711 KAPOLANI BOULEVARD, SUITE 1200 • HONOLULU, HAWAII 96813
PHONE: (808) 522-5252 • FAX: (808) 522-4720



JEREMY HARRIS
MAYOR

EMW
LW
11/11
CHERYL D. SOON
DIRECTOR
JOSEPH M. MAGALON, JR.
DEPUTY DIRECTOR

August 9, 2000

TPD/00-0272TR

MEMORANDUM

TO: GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: LANCE MANABIE, PROJECT ENGINEER

FROM: CHERYL D. SOON, DIRECTOR

SUBJECT: WEST MAMALA BAY WASTEWATER FACILITIES PLAN

RECEIVED
AUG 10 2000

WILSON OKAMOTO & ASSOC., INC.

Gary Q. L. Yee
August 9, 2000
Page 2

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

CHERYL D. SOON
Director

cc: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control

Mr. Earl Matsukawa, Project Manager
Wilson Okamoto & Associates, Inc.

In response to your June 5, 2000 memorandum, the environmental impact statement (EIS) preparation notice for the subject project was reviewed. The following comments are the result of this review:

1. All of the pages in the report should be numbered to facilitate its review.
2. The EIS should address the traffic impact of the proposed projects on City streets. Although the EIS preparation notice states on Page 4-17 (second paragraph of 4.7 Traffic) that roadways other than Kamehameha Highway may be affected by the proposed improvements, it is difficult to determine which streets would be impacted by looking at the figures referred to. It appears that work on Geiger Road, Pohakupuna Road, and Waimano Home Road would have significant impacts on traffic that would require mitigation. A discussion of the mitigation measures should also be included in the EIS.
3. On Page 4-18 (4.7 Traffic, Impacts and Mitigation Measures), the statement is made that any lane closures or road detours will be coordinated with the Honolulu Police and Fire Departments. It should be added that the motoring public, the Emergency Medical Services, the Department of Transportation Services, TheBus operator, Oahu Transit Services, and the State Department of Transportation (if the affected roadway is under State jurisdiction), will also be kept informed of any lane/road closure, detours, etc.

COPY

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 522-4354 Fax: (808) 522-4587
Website: www.cd.honolulu.gov



JEREMY HARRIS
MAYOR

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LUBBY, JR., AIA
DEPUTY DIRECTOR

WWDE.P 00-645

September 21, 2000

MEMORANDUM

TO: MS. CHERYL D. SOON, DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

FROM: GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE

Thank you for your letter dated August 9, 2000 regarding the subject EIS Preparation Notice. We offer the following responses in the respective order of your comments:

1. We regret any inconvenience caused by the absence of page numbering on the various figures included in the subject EIS Preparation Notice. To facilitate preparation and editing of the EIS and Facilities Plan documents, page numbering of the text was automated. Blank pages were inserted to account for the figures, which were prepared separately, then manually inserted, replacing the respective blank pages. While page numbering in the text automatically changes during editing, the figures would need to be renumbered manually. Since numerous figures were provided to better convey the information in the documents, the task of renumbering is too time consuming to keep up with the constant editing and proofing that is required right up to the time of publication. The automated Table of Contents, however, correctly identifies the page location of each figure.
2. The West Mamala Bay Facilities Plan is being prepared as a long-term (20-year) guide for the development of wastewater facilities in the area served by the Honolulu Wastewater Treatment Plant. Hence, the design and construction of specific improvements implementing the Plan will span two decades. It is not the intent of the DEIS to assess specific impacts of planned improvements since design

Ms. Cheryl D. Soon -2- September 21, 2000

has not progressed to the stage of identifying which areas along roadways may be affected, or how construction would be phased. Please be assured that as these specific improvements are designed, all agencies and public utilities with facilities that could be impacted will be consulted. Additional environmental assessments and environmental impact statements may also need to be prepared prior to the implementation of specific recommendations to solicit further agency and public input.

3. Pursuant to your recommendation, the Draft EIS will additionally state that the mooring public, Emergency Medical Services, the Department of Transportation Services, TheBus operator, Oahu Transit Services, and the State Department of Transportation (if the affected roadway is under State jurisdiction), will be notified of any lane closures or road detours required to implement recommendations of the Final Facilities Plan.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

GTE Hawaiian Tel

GTE Hawaiian Telephone Company, Incorporated
P.O. Box 2200 • Honolulu, HI 96841 • Telephone: 808 546-1616

Beyond the call

Gerald M. Noda
General Manager
Infrastructure Provisioning

RECEIVED
JUN 23 2000

WILSON OKAMOTO & ASSOCIATES, INC.

RECEIVED
AUG 15 2000

DEPARTMENT OF DESIGN AND CONSTRUCTION

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4564 FAX: (808) 523-4567
Website: www.dcd.honolulu.gov



JEREMY HARRIS
CLERK

WILSON OKAMOTO & ASSOCIATES, INC.

GARY Q. L. YEE, AIA
3-10702

ROLAND D. LUBY, JR. AIA
DEPUTY DIRECTOR

June 22, 2000

Mr. Lance Manabe
Project Engineer
Department of Design and Construction
City & County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Manabe:

Subject: West Mamala Bay Wastewater Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for the opportunity to review and comment on the Environmental Impact Statement (EIS) Preparation Notice for the West Mamala Bay Wastewater Facilities project.

GTE Hawaiian Telephone Company has aerial and underground facilities within the proposed project area. Further review is required by GTE Hawaiian Telephone Company during the design stages of the project to determine if there will be any impact to these facilities.

If you have any questions or require assistance in the future on this project, please call Les Loo at 840-5861.

Sincerely,

(for) Gerald M. Noda

c: Ms. Genevieve Slamonson, Office of Environmental Quality Control
Mr. Earl Matsukawa, Wilson Okamoto & Associates, Inc.

A part of GTE Corporation

August 8, 2000

DCP 2000-529

Mr. Gerald M. Noda, General Manager
Infrastructure Provisioning
GTE Hawaiian Telephone Company, Inc.
P.O. Box 2200
Honolulu, Hawaii 96841

Dear Mr. Noda:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated June 22, 2000 regarding the subject EIS Preparation Notice. The West Mamala Bay Facilities Plan is being prepared as a long-term (20-year) guide for the development of wastewater facilities in the area served by the Honolulu Wastewater Treatment Plant. Hence, the design and construction of specific improvements implementing the Plan will span two decades. Please be assured that as these specific improvements are designed, all agencies and public utilities with facilities that could be impacted will be consulted.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,

FOR GARY Q. L. YEE, AIA
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.



200 Akamainui Street • Mililani, Hawaii 96789-3999 • Telephone: (808) 625-2100

June 16, 2000

Mr. Lance Manabe, Project Engineer
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Manabe:

Re: Environmental Impact Statement Preparation
Notice Pre-Assessment Consultation
West Mamala Bay Wastewater Facilities Plan
Ewa and Central Oahu, Hawaii

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

Oceanic Cable has no comments at this time, but may have as plans are developed for specific areas.

Please call me at 625-8480 if you have any questions.

Sincerely,

Alvin Park
Alvin Park
Supervising Engineer

Cc: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control;
State of Hawaii
235, South Beretania Street, Room 702
Honolulu, Hawaii 96813

✓ Mr. Earl Matsukawa, Project Manager
Wilson Okamoto & Associates, Inc
1907 South Beretania Street
Honolulu, Hawaii 96826

Masa Kinjo, Oceanic Project Engineer
Office File

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 Fax: (808) 523-4567
Website: www.ddc.honolulu.gov



FREEMAN HARRIS
MAYOR

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LUSBY, JR. AIA
DEPUTY DIRECTOR

DCP 2000-533

August 8, 2000

Mr. Alvin Park, Supervising Engineer
Oceanic Cable
200 Akamainui Street
Mililani, Hawaii 96789-3999

Dear Mr. Park:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated June 16, 2000 regarding the subject EIS Preparation Notice.

The West Mamala Bay Facilities Plan is being prepared as a long-term (20-year) guide for the development of wastewater facilities in the area served by the Honolulu Wastewater Treatment Plant. Hence, the design and construction of specific improvements implementing the Plan will span two decades. Please be assured that as these specific improvements are designed, all agencies and public utilities with facilities that could be impacted will be consulted.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,

Gary Q. L. Yee
FOR GARY Q. L. YEE, AIA
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

RECEIVED
JUN 19 2000

WILSON OKAMOTO & ASSOC., INC.

EM

BT
1/2000



EM

July 17, 2000

Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Attention: Mr. Lance Manabe
Project Engineer

Gentlemen:

Subject: Environmental Impact Statement (EIS) Preparation Notice
West Mamala Bay Wastewater Facilities Plan

Please be advised that The Gas Company maintains underground utility gas mains and gas transmission lines in the project vicinity, which serves commercial and residential customers in the area. We would appreciate your consideration during the project planning and design process to minimize any potential conflicts with the existing gas facilities in the project area as is stated in Section 4.8 of the study.

Thank you for the opportunity to comment on the Draft Environmental Assessment. Should there be any questions, or if additional information is desired, please call me at 594-5570.

Very truly yours,

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

CEC:km
00-146

cc: Ms. Genevieve Salmonson, Director, Office of Environmental Quality Control
Mr. Earl Matsukawa, Project Manager, Wilson Okamoto & Associates, Inc.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4584 Fax: (808) 523-4587
Website: www.cc.honolulu.hi.us



JEREMY HARRIS
MAYOR

GARY Q. L. YEE, AIA
DIRECTOR

ROLAND D. LUBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-546

August 8, 2000

Mr. Charles E. Calvet, P.E.
Manager, Engineer
The Gas Company
515 Kamakee Street
Honolulu, Hawaii 96814

Dear Mr. Calvet:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated July 17, 2000 regarding the subject EIS Preparation Notice.

The West Mamala Bay Facilities Plan is being prepared as a long-term (20-year) guide for the development of wastewater facilities in the area served by the Honolulu Wastewater Treatment Plant. Hence, the design and construction of specific improvements implementing the Plan will span two decades. Please be assured that as these specific improvements are designed, all agencies and public utilities with facilities that could be impacted will be consulted.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,

FOR GARY Q. L. YEE, AIA
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

THE GAS COMPANY
515 Kamakee Street, Honolulu, Hawaii 96814
PO Box 3000 Honolulu, Hawaii 96810
Telephone 808 523 5500 Facsimile 808 594 5520 Sales

JUL-06-2000 08:05 FROM UNSTEADTER MERT PASC/EBC TO WILSON OKAYOTO P.03
DC 2000-0000



MILILANI/WAIPIO/MELEMANU NEIGHBORHOOD BOARD NO. 25
CITY HALL, ROOM 400 HONOLULU, HAWAII

June 29, 2000 TO JUL -5 P3:37

Mr. Gary Q. L. Yee, AIA, Director
Department of Design and Construction
City and County of Honolulu
650 S. King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Yee:

SUBJECT: Mililani Wastewater Reclamation Feasibility Study

Thank you for providing the final report of the Mililani Wastewater Reclamation Facility Study.

Mililani/Waipio/Melemana Neighborhood Board No. 25 concurs in your consultant's recommendation to utilize ground water rather than reclaimed water for the irrigation of the City's Central Oahu Regional Park.

We also continue to prefer the Pre-Final West Mamala Bay Facilities Plan Alternative A, Upgrade System by Increasing Capacity, over Alternative C, Flow Equalization within the System. If Alternative C is ultimately selected, however, we concur in the consultant's recommendation of a lined storage pond to provide wet weather flow equalization over the more costly use of the existing digester tanks and underground storage methods for economic reasons as described in subject study.

Thank you for the opportunity to comment on this study.

Sincerely,

Richard G. Poirier
Richard G. Poirier, Chair



Oahu's Neighborhood Board System - Established 1973

JUL-06-2000 08:04 FROM UNSTEADTER MERT PASC/EBC TO WILSON OKAYOTO P.02
DC 2000-0000



MILILANI/WAIPIO/MELEMANU NEIGHBORHOOD BOARD NO. 25
CITY HALL, ROOM 400 HONOLULU, HAWAII

June 29, 2000 TO JUL -5 P3:37

Office of Environmental Quality Control
State of Hawaii
215 S. Beretania Street, Room 702
Honolulu, Hawaii 96813
Attn: Ms. Genevieve Salmonson, Director.

Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813
Attn: Mr. Lance Mabee, Project Engineer

Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
Attn: Mr. Earl Masubawa, Project Manager

Dear Ms. Salmonson and Messrs. Mabee and Masubawa:

Subject: West Mamala Bay Wastewater Facilities Plan Environmental Impact Statement (EIS) Preparation Notice

On behalf of the Mililani/Waipio/Melemana Neighborhood Board No. 25, I am pleased to offer the following comments on the subject EIS Preparation Notice:

1. The EIS should clearly address the environmental impacts of the construction of a new equalization facility near the Mililani Pretreatment Facility (PTF) under the Flow Equalization within the System Alternative (FESA). The Community requires clear and supportable information on how the equalization facility will affect its environment particularly in regard to health, odors and noise. The amount of wastewater to be detained at the PTF and the frequency and duration of detention should be clearly addressed.
2. Since the decision as to use the Upgrade System Alternative (USA) or the FESA is likely to be strongly influenced by economics and since the FESA construction costs are higher than those of the USA but its annual operating costs are lower, it is essential that these costs be calculated in such a manner that the decision-makers and the public can ascertain the true cost savings to be generated by the selected alternative and compare it against any environmental degradation it is likely to produce.

Thank you for the opportunity to comment on the EIS Preparation Notice. We look forward to reviewing the Draft EIS when it is available.

Sincerely,

Richard G. Poirier
Richard G. Poirier, Chair



Oahu's Neighborhood Board System - Established 1973

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 522-4564 Fax: (808) 523-4567
Website: www.cc.honolulu.hi.us



JEREMY HARRIS
MAYOR

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 2000-539

August 8, 2000

Mr. Richard G. Poirier, Chair
Mililani/Waipio/Melemanu No. 25
C/o Neighborhood Commission Office
City Hall, Room 400
Honolulu, Hawaii 96813

Dear Mr. Poirier:

Subject: West Mamala Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated June 29, 2000 regarding the subject EIS Preparation Notice. We offer the following responses in the respective order of your comments:

1. The West Mamala Bay Facilities Plan is being prepared as a long-term (20-year) guide for the development of wastewater facilities in the area served by the Honouliuli Wastewater Treatment Plant. Hence, the preliminary recommendations and alternatives presented are facility development concepts for meeting projected wastewater service needs. The EIS for the West Mamala Bay Facilities Plan is intended to comprehensively address potential impacts of these development concepts and alternatives comprising this "larger action."

Over the next two decades, as the concepts recommended for implementation in the Final Report of the West Mamala Bay Facilities Plan are developed into specific project proposals, additional and environmental assessments and environmental impact statements will need to be prepared. For example, the City's *Mililani Reclamation Facility Feasibility Study*, examined the development of a storage facility, among other potential improvements, at the Mililani PTF. Recommendations developed through this study would be subject to requirements for environmental impact documentation prior to implementation.

As described in the EIS Preparation Notice, a storage facility at the Mililani PTF would be designed to hold one million gallons. It is anticipated to be used only a few times a year at most, and would be emptied within 24 hours and cleaned following each use.

Mr. Richard G. Poirier
Page 2
August 8, 2000

2. The Draft EIS will include a table comparing construction cost and non-cost considerations for the East Interceptor Alternatives presented in the Pre-Final Report of the West Mamala Bay Facilities Plan. The construction costs for the alternatives are order-of-magnitude estimates for which comparable operation and maintenance costs could not be developed. Hence, operation and maintenance costs were assessed qualitatively. Notably, while flow equalization for the entire East Interceptor System offers a significant construction cost advantage over facility upgrade, the cost advantage of interchangeable components of these alternatives varies. Flow equalization at the Mililani PTF, for example, has a slightly higher construction cost estimate than the alternative facility upgrades of the Waipahu Wastewater Pump Station Expansion and Honouliuli Interceptor Relief. The construction cost estimate for flow equalization at the Mililani PTF, however, is based on a fully-enclosed underground reservoir. While such a facility may be necessary at the Aloha Stadium parking lot or at Blaisdell Park, a less costly open basin-type facility may be adequate at the Mililani PTF. Such a facility was examined in the City's *Mililani Reclamation Facility Feasibility Study*.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,

FOR GARY Q. L. YEE, AIA
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

JUL-06-2000 08:185 FROM WASTEWATER MGMT RES/VE/C TO WILSON DARYOTO P.04

DC 2000-000001
153

RECEIVED

Jason Yazawa
91-1054 Kahiuka Street
Ewa Beach, Hawaii 96706

TO JUL -5 P3:37

June 30, 2000

Mr. Gary Yee, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 14th Floor
Honolulu, Hawaii 96813

DESIGN & CONSTRUCTION
DIVISION OF
PLANNING & PROGRAMMING

Subject: West Mamelia Bay Facilities Plan
Environmental Impact Statement Preparation Notice (EISP/N)

Dear Mr. Yee:

In planning the expansion to the Honouliuli WWTP facility to "accommodate projected flows", please consider alternatives that would substantially reduce or stop the emission of pollutants (hydrogen sulfide?) that cause malodorous air quality conditions in nearby residential communities. As a resident of the nearby Ewa Genity, we are affected by bad air quality during Kona (southwest) wind conditions. I am aware that the WWTP facility has been in operation before the community was developed, and was told about the WWTP facility before purchasing my residence. Nevertheless, the community is growing very rapidly, and if air quality conditions were to improve, the quality of life of thousands of Ewa Genity residents would also improve.

In preparing the EIS, please conduct a quantitative air quality impact analysis of the expanded Honouliuli WWTP facility. The analysis should take into account how varying climatic conditions affect different neighborhoods. For example, malodorous air quality conditions in Ewa Genity occur only during Kona wind conditions. During trade wind conditions, the Navy housing in the former Barbers Point Naval Air Station may be adversely affected. If the malodorous air quality is caused by hydrogen sulfide, I would be interested in knowing the level of concentration needed for humans to detect (smell) it, and how this compares with the State Ambient Air Quality Standards for this pollutant. I would also be interested in knowing if the malodorous air quality is caused by another pollutant(s). The importance of conducting a quantitative air quality analysis is to determine whether the expanded Honouliuli WWTP facility would cause higher emissions of hydrogen sulfide, or other pollutant, which would cause greater concentrations at the nearby communities. In addition, if alternatives are considered that would reduce or stop emissions, the air quality analysis could measure the effectiveness of such alternatives.

Thank you for providing this opportunity to comment on your project. I would highly appreciate your consideration of my suggestions.

Sincerely yours,


Jason Yazawa

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 14TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 Fax: (808) 523-4567
Website: www.cd.honolulu.gov



JEREMY HARRIS
MAYOR

GARY O. L. YEE, AIA
DIRECTOR
ROLAND D. LEEBY, JR., AIA
DEPUTY DIRECTOR

August 8, 2000

DCP 2000-540

Mr. Jason Yazawa
91-1054 Kahiuka Street
Ewa Beach, Hawaii 96706

Dear Mr. Yazawa:

Subject: West Mamelia Bay Facilities Plan
Environmental Impact Statement (EIS) Preparation Notice

Thank you for your letter dated June 30, 2000 regarding the subject EIS Preparation Notice. We offer the following in response to your comments:

We recognize that odor from the Honouliuli Wastewater Treatment Plant will be an increasing concern as development encroaches upon the once remote facility. Your insightful comments and questions touch upon some of the key issues relating to odor and how they are addressed in the West Mamelia Bay Facilities Plan and Environmental Impact Statement. We offer the following in responses to your comments:

1. The West Mamelia Bay Facilities Plan is a long-term guide for the entire area served by the Honouliuli WWTP, from Miliiani to Ewa Beach and from Halawa to Ko'Oliha. Its intent is to identify long-term facility needs (to 2020) and to recommend major courses of action. With regard to treatment plant odors, the Pre-Final Plan Report offers several preliminary recommendations that were included in the EIS Preparation Notice. These include a 1,000 to 2,000 foot buffer zone around the plant as well as improvements for foul air containment, collection and treatment. An odor analysis of existing treatment facilities is also recommended to confirm and to develop specific design and operating criteria for the recommended improvements.

Mr. Jason Yazawa
Page 2
August 8, 2000

2. Regarding air quality standards, the Honolulu WWTP Covered Source Permit (amended May 7, 1998) stipulates a hydrogen sulfide (H₂S) limit of 25 parts per billion by volume (ppbv) or 35 micrograms per cubic meter (hourly average) at all plant property lines. Based on fence-line monitoring, this limit has only been exceeded a few times when odor control facilities were off-line or malfunctioning. These limits, however, are based on protecting health since H₂S can be detected as an odor at concentrations below the established limit. Moreover, H₂S is not the only odor generated at the Plant. The existing thermal sludge treatment process, for example, releases other odorous gases. The aforementioned preliminary recommendations addressing treatment plant odors are intended to address "quality of life" issues beyond protecting community health. Also, a notable preliminary recommendation of the Pre-Final Facilities Plan is to replace the thermal sludge treatment process with anaerobic digestion, which generates less odor.

We appreciate your time and effort in reviewing the EIS Preparation Notice.

Very truly yours,


FOR GARY L. YEE, M.A.S.
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

11.3 Parties Consulted During the Draft EIS

The following agencies, organizations, elected officials, and interested parties were consulted during the public review period of the Draft EIS. Of the parties that formally replied during the comment period, some had no comments while others provided substantial comments as indicated by the ✓ and ✓✓, respectively. All written comments received are reproduced herein. In addition, a public hearing meeting was held on November 14, 2000 at Ewa Elementary School. The transcript of the public hearing is included herein.

Federal

- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- ✓ Natural Resource Conservation Service
- ✓✓ U.S. Army Civil Works Branch
- ✓ Commander, Navy Region Hawaii (Personal Communication with Mr. Clyde Yokota on November 28, 2000)

State of Hawaii

- ✓ Department of Health
- Department of Health, Environmental Management Division
- Department of Land and Natural Resources (DLNR)
- ✓ DLNR, Division of Forestry and Wildlife
- ✓✓ DLNR, Division of Land Division
- ✓ DLNR, Division of Aquatic Resources
- ✓✓ DLNR, Division of Historic Preservation
- ✓✓ DLNR, Commission on Water
- ✓ Department of Transportation
- Department of Transportation - Highways Division
- Department of Business, Economic Development and Tourism
- Department of Accounting and General Services, Stadium Authority
- Office of Environmental Quality Control
- Office of Planning
- ✓✓ Office of Hawaiian Affairs
- ✓ Department of Hawaiian Home Lands
- University of Hawaii, Environmental Center
- Barbers Point Naval Air Station Redevelopment Commission

City and County of Honolulu

- ✓✓ Department of Planning and Permitting
- ✓✓ Police Department

- ✓✓ Fire Department
- ✓✓ Board of Water Supply
- Department of Parks and Recreation
- Department of Design and Construction, Division of Infrastructure Design and Engineering
- Department of Design and Construction, Division of Land Survey and Acquisition
- Department of Environmental Services
- ✓✓ Department of Transportation Services

Elected Officials

- ✓✓ Senator Norman Sakamoto
- Senator David Ige
- Senator Randy Iwase
- Senator Cal Kawamoto
- Senator Brian Kanno
- Senator Colleen Hanabusa

- Representative Bob McDermott
- Representative Tom Okamura
- Representative K. Mark Takai
- Representative Nobu Yonamine
- Representative Roy M. Takumi
- Representative Nestor R. Garcia
- Representative Marilyn B. Lee
- Representative Paul T. Oshiro
- Representative Mark Moses
- Representative Michael Puamamo Kahikina

- Councilmember Rene Mansho
- Councilmember Elect Gary Okino
- Councilmember Elect Romy Cachola
- Councilmember John DeSoto
- Councilmember Steve Holmes

Public Utilities

- ✓ Hawaiian Electric Company, Inc.
- Verizon Hawaii (formerly GTE Hawaiian Telephone Company)
- Oceanic Cable
- ✓✓ The Gas Company

Organizations

Neighborhood Boards :

Aliamanu/Salt Lake/Foster Village No. 18

Aiea No. 20

Pearl City No. 21

Waipahu No. 22

Ewa No. 23

Mililani/Waipio/Melemanu No. 25

Makakilo/Kapolei/Honokai Hale No. 34

Mililani Mauka/Launani Valley No. 35

Hawaii's Thousand Friends

Hawaii Audubon Society

Outdoor Circle

Chamber of Commerce

Earth Justice

Ewa Water Recycling Facility (U.S. Filter)

Other Interested Parties

Mr. Scott Ishikawa

Mr. Don Robbins

Mr. Ken Windram

Mr. Wei Chen

Dr. Roger Babcock

Mr. Roy Abe

Mr. Michael Street

Mr. Jason Yazawa

Mr. Daniel Neyer

Mr. Harold Yee

3152-01
November 28, 2000

CONTACT MEMO

SUBJECT: West Mamala Bay Facilities Plan DEIS

PERSON CALLING (TEL MESSAGE): Mr. Clyde Yokota, U.S. Navy (471-1171 ext. 229)

INFORMATION ITEMS:

1. Although the formal comment period has passed, Mr. Yokota wished to comment on the preliminary recommendation for the Pearl City WWPS.
2. Th Navy has an installation restoration project in the adjoining land and has concerns about prior hazmat contamination at the site, particularly if excavation would be required.
3. Please call him if there are any questions.



Earl Matsukawa, Project Manager

WILSON OKAMOTO & ASSOCIATES, INC.
ENGINEERS / PLANNERS
 1907 S. Beretia Street, Suite 400
 Honolulu, Hawaii 96826
 Phone: (808) 946-2177 / FAX: (808) 946-2253

JOB NO. 3152-01

TELEPHONE CONVERSATION RECORD

Talked with: Mr. Pierre Tierra Date: 12-18-00 Time: 9:00 am pm
 Of: U.S. Navy Phone: 471-1171, ext. 230
 Re: West Mamala Bay Facilities Plan


Message Contact WOA

1. Requested a copy of a report regarding Navy's Installation Restoration Projects near the Pearl City STP.
2. Expressed our appreciation for his apprising us of the Navy's efforts.

Reply Contact WOA

1. WOA can pick up a copy of the Site Summary Report for review.

Action or follow-up necessary
 Incorporate information in Final EIS, as appropriate

Signed: 

Distribution _____

Rev: 7/18/00



United States
Department of
Agriculture

Natural
Resources
Conservation
Service

P.O. Box 50004
Honolulu, HI
96850

Our People... Our Islands... In Harmony

October 23, 2000

Mr. Bill Liu, Project Engineer
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

WILSON OKAMOTO & ASSOC., INC.

RECEIVED
OCT 23 2000

11/27 01

EMU
BOS
TAD

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 522-4584 • Fax: (808) 522-4587
Web Site: WWW.CC.HONOLULU.HI.US



SEBASTIAN HARRIS
MAYOR

RAE M. LOUI, P.E.
ACTING DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR
WWDE.P 01-079

February 22, 2001

Mr. Kenneth M. Kaneshiro, State Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
P.O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Kaneshiro:

Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu, and Primary Urban Center, Island of Oahu

Thank you for your letter dated October 23, 2000 (Reference No. WWDE.P 00-648) indicating that you have no comments on the subject Draft EIS.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,

William Liu
for RAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

Dear Mr. Liu:

Subject: Reference No. WWDE.P 00-648 - Draft Environmental Impact Statement (DEIS) - West Mamala Bay Wastewater Facilities Plan, Ewa, Central Oahu, Hawaii

We have reviewed the above mentioned document and have no comments to offer at this time.

Thank you for the opportunity to review this document.

Sincerely,

Kenneth M. Kaneshiro
KENNETH M. KANESHIRO
State Conservationist

Cc: Ms. Genevieve Salmonson, Director, Office of Environmental Quality Control, State of Hawaii, 235 S. Beretania St., Rm. 702, Honolulu, Hawaii 96813
✓ Mr. Earl Matsukawa, Project Manager, Wilson Okamoto & Associates, Inc., 1907 S. Beretania St., Ste. 400, Honolulu, HI 96826

The Natural Resources Conservation Service works hand-in-hand with the American people to conserve natural resources on private lands.

AN EQUAL OPPORTUNITY EMPLOYER



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96859-5440

NOTE TO
ATTENTION OF

November 3, 2000

Civil Works Technical Branch

RECEIVED
NOV 8 2000

Mr. Bill Liu, Project Engineer
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

WILSON OKAMOTO & ASSOC., INC.

Dear Mr. Lai:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement (DEIS) for the West Mamala Bay Wastewater Facilities Plan, Ewa, Oahu (TMK 9-1-1 through 12, 17, 19, 21-25, 27-30, 32-112; 9-2-3; 6-33; 9-4-1, 2, 5-161; 9-5-1, 2, 4-69; 9-6-2 to 8; 9-7-19-27, 29-96; 9-8-1-18, 20, 73; and 9-9-1-77). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

- a. The DA permit information provided in our previous letter of July 10, 2000 and included in Chapter 11 of the DEIS remains unchanged.
 - b. The flood hazard information provided on page 4-16 of the DEIS is correct.
- Should you require additional information, please contact Ms. Jessie Dobinchick of my staff at (808)438-8876.

Sincerely,

Lincoln Gayagas
Acting Chief, Civil Works
Technical Branch

CF:
Mr. Earl Mataukawa, Project Manager
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808)522-4354 • Fax: (808)522-4587
Web Site: WWW.CCD.DDC.HONOLULU.HI



JERRY HARRIS
MAYOR

RAE M. LOUI, P.E.
ACTING DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR
WWDFP 011-080

February 22, 2001

Mr. Lincoln Gayagas, Acting Chief
Civil Works Technical Branch
Department of the Army
U.S. Army Engineering District, Honolulu
Fort Shafter, Hawaii 96858-5440

Dear Mr. Gayagas:

Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu, and Primary Urban Center, Island of Oahu

Thank you for your letter dated November 3, 2000 commenting on the subject Draft EIS. We offer the following in response to your comments:

1. We acknowledge your prior comment regarding the potential requirement of Department of the Army (DA) permits, as offered in your letter of July 10, 2000. The DA permit is listed on Page 5-33 of the Draft EIS among permits and approvals that may be required for specific improvements. As discussed in our responding letter dated August 8, 2000, the design and construction of specific improvements implementing the Plan will span two decades and the need for DA permits will be determined as these projects are designed. Consultation with your Regulatory Branch will be initiated at that time.
2. Your confirmation of the flood hazard information is appreciated.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,

FOR RAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

BERNARD A. COLEMAN
GOVERNOR OF HAWAII



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

November 24, 2000

EM

BRUCE S. ANDERSON, PH.D., M.P.H.
DIRECTOR OF HEALTH

IN WASH. OFFICE 999 10
P.M.

99-265B/epo

RECEIVED
NOV 30 2000

WILSON OKAMOTO & ASSOCIATES, INC.

Mr. Bill Liu, Project Engineer
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Lui:

Subject: Draft Environmental Impact Statement
West Mamala Bay Facilities Plan
Ewa, Central Oahu, and Primary Urban Center
TMK: 9-1-01 and many others

Thank you for allowing us to review and comment on the subject plan. We do not have any comments to offer at this time.

Sincerely,

GARY GILL
Deputy Director
Environmental Health Administration

c: OEQC
Wilson Okamoto & Associates

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 533-4564 • Fax: (808) 533-4587
Web site: www.cc.hawaii.gov/ddc



JEREMY HARRIS
MAYOR

RAE M. LOUI, P.E.
ACTING DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.P 01-081

February 22, 2001

Mr. Gary Gill, Deputy Director
Environmental Health Administration
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Gill:

Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu, and Primary Urban Center, Island of Oahu

Thank you for your letter dated November 24, 2000 (Ref. 99-265B/epo) indicating that you have no comments regarding the subject Draft EIS.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,

RAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

October 3, 2000


Mr. Bill Liu, Project Engineer
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Liu:

Subject: Request for Comments: West Mamala Bay Wastewater Facilities Plan,
Draft Environmental Impact Statement, Ewa, Central Oahu, and
Primary Urban Center, Island of Oahu.

We have reviewed your cover letter to us dated September 27, 2000 for the
subject project description for West Mamala Bay Facilities Plan and the Department
of Land and Natural Resources, Division of Forestry and Wildlife has no objections
nor comments to offer as it does not impact any of our programs. Thank you for
the opportunity to comment.

Sincerely yours,


Michael G. Buck
Administrator

C: DOFAW, Oahu Branch
Ms. Genevieve Salmonson, OEQC
Mr. Earl Matsukawa, Wilson Okamoto & Associates, Inc.

EM

THOMAS E. JONES
Commissioner
BUREAU OF LAND AND NATURAL RESOURCES
JANET E. SARELO
DEPUTY

AGRICULTURE DEVELOPMENT
FORESTRY
LAND AND NATURAL RESOURCES
PLANNING AND ZONING REGULATION
CONSERVATION AND RECREATION
DEPARTMENTAL AFFAIRS
COMMUNITY DEVELOPMENT
RESOURCES DEVELOPMENT
CONTRACTS
ADMINISTRATIVE SERVICES
FORESTRY AND WILDLIFE
PLANNING AND ZONING
LAND ACQUISITION
STATE PARKS
WATER AND LAND DEVELOPMENT
WATER RESOURCE MANAGEMENT

RECEIVED
OCT 13 2000

WILSON OKAMOTO & ASSOC., INC.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 522-4154 • Fax: (808) 522-4187
Web site: www.co.honolulu.hi.us



JEREMY HARRIS
MAYOR

RAE M. LOUI, P.E.
ACTING DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPI, AIA
ASSISTANT DIRECTOR
WWDE.P 01-092

February 22, 2001

Mr. Michael G. Buck, Administrator
Division of Forestry and Wildlife
Department of Land and Natural Resources
State of Hawaii
1151 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Buck:


Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu and Primary Urban Center, Island of Oahu

Thank you for your letter dated October 3, 2000 indicating that you have no objections or
comments regarding the proposed West Mamala Bay Facilities Plan, as assessed in the subject
Draft EIS.

We appreciate your participation in the EIS review process. Your letter, together with this
response, will be reproduced in the Final EIS.

If you have any questions, please call William Liu of the Wastewater Design and Engineering
Division at 527-6871.

Very truly yours,


RAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 571
HONOLULU, HAWAII 96809

November 27, 2000

LD-NRV

Wilson Okamoto & Associates, Inc.
Mr. Earl Matsukawa, Project Director
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

SUBJECT: Draft Supplemental Environmental Impact Statement
for West Mamala Bay Facilities Plan

Thank you for the opportunity to review the subject matter. Attached herewith is a copy of our Land Division Engineering Branch comments.

The Department has no other comment to offer on the subject matter.

Should you have any questions, please feel free to contact Nicholas Vaccaro of the Land Division's Support Services Branch at 808-587-0438.

Very truly yours,

DEAN Y. UCHIDA
Administrator

C: Oahu District Land Office
C&COH Department of Planning and Permitting
650 South King Street, Honolulu, Hawaii 96813

Earl

AGRICULTURE DEVELOPMENT
PLANNING SERVICES
SOILS AND SOILS REFORMATION
CONSERVATION AND
RESOURCES ENFORCEMENT
CONSERVATION AND
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
PLANNING AND
MULTI-RESOURCE MANAGEMENT

NOV 31 2000

WILSON OKAMOTO & ASSOC., INC.

DLNR-LAND DIVISION
ENGINEERING BRANCH

COMMENTS

LD/NAV
Ref: DEAWNBAY.COM

The proposed improvements do not affect our current projects.

We confirm that the existing four (4) Wastewater Treatment Plants, according to FEMA Community Panel Numbers, are located in Zones A and X as explained below.

1. Ewa WWPS - Community Panel Number 15001 0135 C, Zone A - areas with no base elevations determined.
2. West Lock Estates WWPS - Community Panel Number 150001 0110 D, Zone X - areas determined to be outside 500-year flood plain.
3. Pearl City WWPS - Community Panel Number 150001 0110 D, Zone A - areas with no elevations determined.
4. Waiaua WWPS - Community Panel Number 150001 0080 A - Zones X and A - Zone X areas determined to be outside 500-year flood plain while Zone A are areas with no flood elevations determined.

The proposed improvements must comply with the rules and regulations of the National Flood Insurance Program (NFIP) and all applicable County Ordinances. If there are questions regarding the NFIP, please contact the State Coordinator, Sterling Yong, of the Department of Land and Natural Resources at 587-0428. If there are questions regarding flood ordinances, please contact the applicable County representative.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 521-4564 Fax: (808) 521-4887
Web site: www.cc.hawaii.gov



PALE M. LOUK, P.E.
ACTING DIRECTOR
GEORGE I. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR
WWDE P 01-082

JEREMY HARRIS
MAYOR

February 22, 2001

Mr. Dean Y. Uchida, Administrator
Land Division
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Uchida:

Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu, and Primary Urban Center, Island of Oahu

Thank you for your letter dated November 27, 2000 (Ref.: DSEIPSWMBAY.RCM) commenting on the subject Draft EIS. Your Engineering Branch's confirmation of the flood district designations for the four-wastewater pump stations is appreciated. As discussed in Section 4.4.4 of the Draft EIS, all proposed improvements within flood hazard districts would comply with regulations set forth in Section 21-9.10 Flood Hazard Districts of the City and County of Honolulu Land Use Ordinance. The Final EIS will note that these regulations were enacted pursuant to the U.S. National Flood Insurance Act of 1968 (Public Laws 90-448 and 91-152), as amended, and the U.S. Flood Disaster Protection Act of 1973 (Public Law 93-234), as amended. Section 5.9 in the Draft and Final EIS lists Flood Hazard Development Approval among permits and approvals that may be required for proposed improvements.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,
Forrae M. Loui
FORRAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

'000C105PM12:14HHE&LRD

Phase review

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Land Division
Honolulu, Hawaii

December 20, 1999
March 4, 2000

Suspense Date: 10/17/00

LD/NAV
Ref.: DEAMBAY.COM

MEMORANDUM:

- TO: XXX Division of Aquatic Resources
Division of Forestry & Wildlife
Division of State Parks
XXX Division of Boating and Ocean Recreation
Historic Preservation Division
XXX Commission on Water Resource Management
Land Division Branches of:
Planning and Technical Services
XXX Engineering Branch
XXX Oahu District Land Office
Shoreline Processing Services

FROM: Dean Y. Uchida, Administrator
Land Division
Alinda Young

SUBJECT: Draft Supplemental Environmental Impact Statement for the
West Mamala Bay Facilities Plan

Please review the attached:

DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

and submit your comments (if any) on Division letterhead within the time requested above. Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0438.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments.

() We have no comments.

Comments attached.

Signed: *Andrew M. Mowden*
ANDREW M. MOWDEN, CHIEF ENGINEER

Date: 10/24/00

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 Fax: (808) 523-4887
Website: www.cca.honolulu.hi.us



GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

December 18, 2000

WWDEP 00-753

RECEIVED
DEC 1 11 21 AM

WILSON OKAMOTO & ASSOC., INC.

Mr. Earl Matsukawa, Project Manager
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Subject: West Mamala Bay Wastewater Facilities Plan
Draft Environmental Impact Statement, Ewa, Central Oahu
and Primary Urban Center, Island of Oahu

The enclosed State of Hawaii Department of Land and Natural Resources Letter
Ref.: DEAWMBAY.RC-1 of March 16, 2000, received on December 11, 2000, is submitted
for your action.

Very truly yours,

Gary Q. L. Yee
GARY Q. L. YEE, AIA
Director

Encl.

6/23/01
EMV
JF



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
PO BOX 671
HONOLULU, HAWAII 96809

March 16, 2000

LD/NAV

Honorable Gary Q. L. Yee, AIA
Director of Department of Design
and Construction
City and County of Honolulu
650 South King Street 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Yee:

SUBJECT: City and County of Honolulu Department of Design and
Construction - West Mamala Bay Wastewater Facilities
Plan, Island of Oahu, Hawaii

Thank you for the opportunity to review the subject matter.
We had submitted the subject informational material to our
appropriate divisions for their review and comment.

Enclosed is a copy of our Division of Aquatic Resources'
comment. Our Oahu District Land Office had informed us that the
proposed project does not have any significant impact to State land
or department projects.

The department has no other comment to offer on the subject
matter.

Should you have any questions, please contact Nicholas A.
Vaccaro of our Land Division Support Services Branch at 587-0438.

Very truly yours,

Dean Y. Uchida
DEAN Y. UCHIDA
Administrator

c: Oahu District Land Office

00-25209

AGRICULTURE OR WILDLIFE
PROGRAM
PUBLIC SERVICES
CONSTRUCTION AND REPAIR
CONSTRUCTION AND REPAIR
CONTRACTS
CONTRACTS
CONTRACTS
LAND DIVISION
STATE PARKS
WASTE RESOURCE MANAGEMENT

Ref.: DEAWMBAY.RCM

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
 650 SOUTH KING STREET, 11TH FLOOR
 HONOLULU, HAWAII 96813
 Phone: (808) 523-4564 • Fax: (808) 523-4587
 Web site: www.cc.honolulu.gov



SECRETARY
 HONORARY

RAE H. LOUI, P.E.
 DIRECTOR
 GEORGE T. TAMASHIRO, P.E.
 DEPUTY DIRECTOR
 ERIC G. CROSSLAND
 ASSISTANT DIRECTOR

WWDE.P 01-095

RECEIVED
 MAR 19 2001

MAILED 10:00 AM MAR 15 2001

STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 Land Division
 Honolulu, Hawaii
 December 20, 1999

LD/NAV Ref.: DEANMBAY.COM Suspense Date: 10/17/00

MEMORANDUM:

- XXX Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Division of Boating and Ocean Recreation
- Historic Preservation Division
- XXX Commission on Water Resource Management
- Land Division Branches of:
 Planning and Technical Services
- XXX Engineering Branch
- XXX-Oahu District Land Offices
- Shoreline Processing Services

TO :

FROM :

TO :

Dean Y. Uchida, Administrator
 Land Division

SUBJECT: Draft Supplemental Environmental Impact Statement for the
 West Mamala Bay Facilities Plan

Please review the attached:

DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

and submit your comments (if any) on Division letterhead within the time requested above. Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0438.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments.

(X) We have no comments.

() Comments attached.

Signed:

Date:

Shaw
 10/6/00

*The attached propose project will do
 not affect any State lands or surrounding
 projects No objections*

Mr. Dean Y. Uchida, Administrator
 Land Division
 Department of Land and Natural Resources
 State of Hawaii
 P.O. Box 621
 Honolulu, Hawaii 96809

Dear Mr. Uchida:

Subject: West Mamala Bay Facilities Plan
 Draft Environmental Impact Statement (EIS)
 Ewa, Central Oahu, and Primary Urban Center, Island of Oahu

Thank you for your letter dated December 20, 2000 (Ref: DEAWMBAY.COM) commenting on the Draft EIS. We offer the following responses to comments offered by the Division of Aquatic Resources and Oahu District Land Office:

Division of Aquatic Resources

The Division indicated that, while significant adverse effects on the aquatic environment from the proposed activities are not expected, specific impacts could not be identified at this time. Sections 4.3.2 and 4.3.3 of the Draft EIS generally discuss impacts and mitigation measures regarding surface waters and coastal waters, respectively. Section 4.4.3 specifically discusses impacts and mitigation measures regarding wetlands. In the short-term, various State of Hawaii and City and County of Honolulu regulations as well as the National Pollutant Discharge Elimination System (NPDES) permits applicable to construction activities protect water quality, including impacts on surface waters, coastal waters and wetlands. As appropriate, the Division will be consulted on specific projects that may directly impact aquatic resources such as wetlands. In the long-term, the provision of flow equalization facilities and/or collection system improvements will reduce the probability of spills and bypasses to stream and coastal waters

Mr. Dean Y. Uchida
Page 2
March 15, 2001

during storms, therefore reducing the amount of untreated wastewater entering surface and coastal waters. The operation of these proposed improvements will have an overall beneficial impact on water quality and, therefore, on aquatic resources in the Study Area as stated in Section 4.3.3 Coastal Waters. This statement is repeated in other Impact and Mitigation Measures sections.

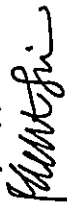
Oahu District Land Office

We acknowledge that the Office has no objections or comments regarding the proposed West Mamala Bay Facilities Plan, as assessed in the subject Draft EIS.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,



RAE M. LOUI, P.E.
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

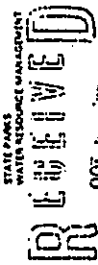


STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
Kalahele Building, Room 555
601 Kalia Boulevard
Honolulu, Hawaii 96813

THOMAS E. JOHNS, CHAIRMAN
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON PUBLIC RESOURCES SUBCOMMITTEE

DATE: 10/25/00
BY: J. L. LIU
JANET L. GARDNER
LANCE W. SPANGLER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES
DIVISION
CONSERVATION
HISTORIC PRESERVATION
LAND
STATE PARKS
WATER RESOURCE MANAGEMENT



October 25, 2000
Mr. Bill Liu, Project Engineer
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

WILSON OKAMOTO & ASSOC., INC.
LOG NO: 26395
DOC NO: 0010EJ14

Dear Mr. Liu:

SUBJECT: Chapter 6E-8 Historic Preservation Review - Draft Environmental Impact Statement (DEIS) for the West Mamala Bay Wastewater Facilities Plan Ewa, Central Oahu and Primary Urban Center
TMKs: 9-1-01-12; 17, 19, 21-25, 27-30, 32-112; 9-2-03, 06-33; 9-4-01, 02, 05-161; 9-5-01, 02, 04-69; 9-6-02-08; 9-7-19-27, 29-96; 9-8-01-18, 20, 73; 9-9-01-77

Thank you for the opportunity to review this DEIS, which is a twenty-year plan for various improvements to the wastewater collection, treatment and disposal system servicing the West Mamala Bay Subdistrict of the Mamala Bay Sewerage District.

The DEIS provides a general overview of eligible and registered sites on the Hawaii and/or National Register of Historic Places. However, an analysis as to the effect the proposed improvements would have on potential historic sites is lacking. In contrast, the DEIS for the East Mamala Bay Wastewater Facilities Plan in 1993 provided as an appendix, an archaeological assessment for the project. This assessment provided a summary of archaeological information and provided responsible preliminary recommendations for archaeological research that would be useful to planners.

We believe that similar archaeological assessment be provided for the current project. As stated in our review of the East Mamala DEIS:

"It is very likely that information on prehistory will change substantially over the period covered by the plan and that recommendations for archaeological research to comply with historic preservation laws will change correspondingly. In some instances this might result in recommendations for an increased level of archaeological research in others a decreased level."

Mr. Bill Liu, Project Engineer
Page Two

We are unable to provide further comment on the effect, if any, this project would have on historic sites. In order to provide further comment we request that an archaeological assessment be conducted to characterize the potential for historic resources in the areas to be impacted by the planned improvements.

We do note, however, that individual projects proposed as part of this twenty-year plan will be reviewed by our office, and this review should ensure that the preliminary recommendations in the DEIS are brought into line with current information and regulatory standards.

Should you have any questions, please feel free to call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

Eljck

c: Ms. Genevieve Salmonson, Director, OEQC, State of Hawaii, 235 South Beretania Street, Room 702, Honolulu, HI 96813
✓ Mr. Earl Matsukawa, Wilson Okamoto & Associates, Inc., 1907 South Beretania Street, Suite 400, Honolulu, HI 96826

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4584 • Fax: (808) 523-4387
Web Site: WWW.CCDOR.HONOLULU.HI



SELENY HARRIS
MAYOR

RAE M. LOUI, P.E.
ACTING DIRECTOR

GEORGE T. TAMASHIAC, P.E.
DEPUTY DIRECTOR

ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE-P 01-083

Dr. Hibbard
Page 2
February 22, 2001

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

February 22, 2001

Mr. Don Hibbard, Ph.D., Administrator
State Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Dear Dr. Hibbard:

Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu, and Primary Urban Center, Island of Oahu

Thank you for your letter dated October 25, 2000 (Ref.: Log. No. 26395, Doc. No. 0010EJ1-4) commenting on the subject Draft EIS. We acknowledge your concerns regarding the potential for impacts to possible historic sites, which may be located within the Study Area. The Final EIS will clarify that none of the preliminary recommendations would involve construction activities in the immediate vicinity of a listed or eligible historic site.

Inasmuch as the West Mamala Bay Facilities Plan is intended to guide wastewater facility improvements over two decades, the recommendations are conceptual in nature and subject to modification based on more definitive information available in the future. Moreover, information on pre-history as well as historic preservation laws by which these individual projects will be reviewed will also likely change over this time. Given this level of uncertainty, we feel that meaningful compliance with the requirements of Chapter 6E, HRS would be most efficiently achieved by your review of specific projects as they are proposed for implementation. Conducting an extensive and costly archaeological assessment of all areas potentially affected by the various preliminary recommendations would be of questionable value if the guidance it offers for future archeological research on individual projects would be subject to the same consultation procedures with your office than if it were not.

Very truly yours,

For RAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

SEYMOUR J. CAVITANO
DIRECTOR OF WATER



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

Ms. Bill Liu, Project Engineer
Department of Design and Construction
City and County of Honolulu
650 S. King Street
Honolulu, HI 96813

Dear Ms. Liu:

West Mamala Bay Wastewater Facilities Plan
Draft Environmental Impact Statement

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CVWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. The CVWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

- () We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.
- () We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- () We are concerned about 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 remedial requirements related to water quality.
- () A West Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.
- () The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.
- () Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- () We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that the project be conditioned upon a review by the corresponding county's Planning Department and the developer's acceptance of any remedial requirements related to erosion control.
- () If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).
- () If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.
- (X) OTHER:

It is the policy of the Commission on Water Resource Management to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

If there are any questions, please contact Lenore Nakama at 587-0718.

Secretary
Lenore Nakama
Lenore Nakama
Deputy Director

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. Earl Matsukawa, Wilson Okamoto & Associates, Inc.
Mr. Dean Uchida, DLNR, Land Division

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 15TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 527-4354 • Fax: (808) 527-4567
Web site: www.cc.hawaii.gov



JEREMY HARRIS
MAYOR

RAE M. LOUI, P.E.
ACTING DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPER, AIA
ASSISTANT DIRECTOR
WWDE P 01-091

February 22, 2001

Ms. Linnet T. Nishioka, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Nishioka:

Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu and Primary Urban Center, Island of Oahu

Thank you for your letter dated October 12, 2000 regarding the subject Draft EIS. As discussed in Section 3.5 of the Draft EIS, the West Mamala Bay Facilities Plan includes provisions for water reclamation at the Honouliuli Wastewater Treatment Plant.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,
Bill Loui
For: RAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

SEIJI UHAMA, J. CADETANO
CONFERENCE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5007



KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAIAI
GLENN H. OKAMOTO

BY REPLY REFER TO:
HWY-PS
2.0541

OCT 26 2000

Mr. Bill Liu, Project Engineer
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Liu:

Subject: West Mamala Bay Wastewater Facilities Plan Draft Environmental Impact Statement (EIS), Ewa, Central Oahu and Primary Urban Center, Island of Oahu

RECEIVED
OCT 27 2000

WILSON OKAMOTO & ASSOC., INC.

Thank you for transmitting the subject document for our review and comments.

Your reply to our comments on the Draft EIS Preparation Notice (as reproduced in Chapter 11) is satisfactory. We have no further comments.

Very truly yours,

Genevieve Salmonson
KAZU HAYASHIDA
Director of Transportation

c: Ms. Genevieve Salmonson, Director, OEQC
Wilson Okamoto & Associates, Inc., Attn: Mr. Earl Matsukawa

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4184 • Fax: (808) 523-4387
Web Site: WWW.CCD.CC.HONOLULU.HI



JEREMY HARRIS
MAYOR

RAE M. LOUI, P.E.
ACTING DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
EMIG G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.P 01-086

February 22, 2000

Mr. Brian K. Minaiai, Director-Designate
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Minaiai:

Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu and Primary Urban Center, Island of Oahu

Thank you for your letter dated October 26, 2000 (Ref: HWY-PS 2.0541) acknowledging that our reply to your comments on the EIS Preparation Notice was satisfactory and that you have no further comments to offer.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,

Brian K. Minaiai
for: RAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

PHONE (808) 594-1888



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPIOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

RECEIVED
DEC 1 2000

FAX (808) 594-1865

EWI

November 13, 2000

Mr. Gary Q. L. Yee, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

WILSON OKAMOTO & ASSOC., INC.

(EIS #426)

Subject: West Mamala Bay Wastewater Facilities Plan
Draft Environmental Impact Statement (DEIS)
TMK's: 9-1-01 through 12, 17, 19, 21-25, 27-30, 32-112;
9-2-03, 06-33; 9-4-01, 02, 05-161; 9-5-01, 02, 04-69;
9-6-02 through 08; 9-7-19 through 27, 29-96; 9-8-01 through 18,
20, 73; and 9-9-01 through 77
Ewa, Central O'ahu, and Primary Urban Center, Island of O'ahu

Dear Mr. Yee:

Thank you for the opportunity to comment on the above referenced project. According to your DEIS, the City and County of Honolulu Department of Design and Construction is preparing a wastewater facilities plan for the West Mamala Bay Subdistrict of the Mamala Bay Sewerage District. The Office of Hawaiian Affairs offer the following comments:

Coastal Waters

During the construction and operation of the proposed and alternative wastewater facility improvements, every mitigative effort should be made to prevent any adverse effects that may occur to marine life in coastal waters near the proposed project area. For example, during the construction of the Ko Olina Lagoons, large silt plumes spread down the coast towards Waianae, causing the reported death of five sea turtles.

In addition, OHA urges that access to the beaches and shoreline waters at the proposed project area be available for public use. Access to shoreline and beaches are an important part of the Hawaiian culture for fishing, cultural and recreational activities. OHA believes that Article XIII, Section 7, of the Hawaii State Constitution as stated below, shall not be abridged:

Mr. Gary Q. L. Yee, Director
Department of Design and Construction
November 13, 2000
Page Two

"The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights."

Wetlands

According to the Section 4.4.3 of the DEIS "Much of Pearl Harbor's coastline consists of various ponds, marshes, mudflats and settling basins. These areas provide important habitat for the Hawaiian Scaup, Hawaiian Coot, Hawaiian Gallinule, Hawaiian Duck, migratory shorebirds and waterfowl." Moreover, the Pearl City wastewater pump station equalization facility alternative would be located in the vicinity of wetlands associated with the Waiala units of the Pearl Harbor National Wildlife Refuge. OHA urges that every effort be made to prevent any negative impacts to the wetlands associated with construction of the proposed and alternative wastewater facility improvements.

Historical and Archaeological Resources

According to Section 4.10 of the DEIS, "Historical and archaeological areas of concern in the Study Area are mainly in the vicinity of undeveloped areas such as wetlands." OHA urges that every mitigative effort be made to prevent any adverse effects to the historical and archaeological resources at the proposed project area.

Act 50, Session Laws of Hawaii (SLH) - Regular Session of 2000

The purpose of Act 50, SLH 2000, is to:

- 1) "Require that environmental impact statements include the disclosure of the effects of a proposed action on the cultural practices of the community and State;
- 2) Amend the definition of "significant effect" to include adverse effects on cultural practices."

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-5184 • Fax: (808) 523-5587
Web site: WWW.DDC.CITYOFHONOLULU.HI



JELENY HARRIS
MAYOR

RAE M. LOU, P.E.
DIRECTOR

GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR

ERIC G. CRISPIL, AIA
ASSISTANT DIRECTOR

WWDE.P 01-084

March 6, 2001

Mr. Colin C. Kippen, Jr.
Deputy Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Kippen:

Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu, and Primary Urban Center, Island of Oahu

Thank you for your letter dated November 13, 2000 (Ref.: EIS #426) commenting on the subject Draft EIS. The following responses are provided in the respective order of your comments:

Coastal Waters

We concur with your concerns regarding potential impacts to coastal waters in proximity to the Study Area. As discussed in Section 4.3.3 of the Draft EIS, to mitigate potential impacts on surface and coastal waters during construction, compliance with all State and City and County of Honolulu regulations governing grading, excavation and stockpiling activities is required. In the long-term, operation of the proposed improvements will have beneficial water quality impacts on coastal receiving waters by, as stated in Section 4.3.3 Coastal Waters, reducing the probability of spills and bypasses during storms.

With regard to public access to shorelines and beaches, Section 4.12 of the Final EIS will state that presently available public access to shorelines and beaches will be maintained to the extent possible, in consideration of public safety, during construction of the various proposed and alternative wastewater improvements. Moreover, shoreline access will not be restricted in the long-term as a direct, indirect or cumulative impact of these improvements.

Wetlands

We concur with your concerns regarding potential impacts to wetland resources within the Study Area. Both the U.S. Fish and Wildlife Service and State Department of Land and Natural Resources, which are responsible for protecting wetlands in the State, were consulted in the EIS review process. Section 4.3.2 of the Draft EIS discusses impacts and mitigation measures regarding surface waters, in general, and Section 4.4.3 specifically discusses wetlands.

Mr. Gary Q. L. Yee, Director
Department of Design and Construction
November 13, 2000
Page Three

OHA requests that the DEIS identify and address the effects on Hawaii's culture and traditional and customary rights pursuant to Section 343-2, Hawaii Revised Statutes, as amended.

If you have any questions, please contact Mark A. Mararagan, policy analyst at 594-1945.

Sincerely,

Colin C. Kippen, Jr.
Deputy Administrator

cc: OHA Board of Trustees
Ms. Genevieve Salmonson, Director - OEQC
/ Mr. Earl Matsukawa, Project Manager - Wilson Okamoto & Associates, Inc.

Mr. Colin C. Kippen, Jr.
Page 2
March 6, 2001

In the short-term, various State of Hawaii and City and County of Honolulu regulations as well as the National Pollutant Discharge Elimination System (NPDES) permits applicable to construction activities protect water quality, including impacts on wetlands. In the long-term, operation of the proposed improvements will have an overall beneficial water quality impact on wetland resources in the Study Area by, as stated in Section 4.4.3 Wetland, reducing the probability of spills and bypasses during storms.


Historical and Archaeological Resources

We concur with your concerns regarding the potential for impacts to possible historic sites, which may be located within the Study Area. As stated in Section 4.10 of the Draft EIS, the State Department of Land and Natural Resources State Historic Preservation Division (DLNR SHPD) will be consulted regarding the disposition of such resources in the Study Area. As specific development plans for each proposed project involving rehabilitation, reconstruction and new construction of the wastewater system are developed, copies of the plans will be provided to the State DLNR SHPD for review to determine the project's effect, if any, on historic sites. Further, should any significant archaeological, cultural or historic sites be found during construction activities, all work in the vicinity will cease and the State DLNR SHPD notified immediately.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,



RAE M. LOUI, P.E.
Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4584 • Fax: (808) 523-4587
Web Site: WWW.CC.DDC.HONOLULU.HI



RAE M. LOUI, P.E.
ACTING DIRECTOR
GEORGE T. TAMASEIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR
WWDE.P 01-088

February 22, 2001

Mr. Raynard Soon, Chairman
Hawaiian Homes Commission
Department Of Hawaiian Home Lands
State of Hawaii
P.O. Box 1879
Honolulu, Hawaii 96805

Dear Mr. Soon:

Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu and Primary Urban Center, Island of Oahu

Thank you for your letter dated October 18, 2000 indicating your support for our planning efforts. We appreciate your participation in the EIS review process.

We appreciate your participation in the EIS review process. Your letter together with this response, will be reproduced in the Final EIS.

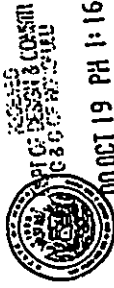
If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,

Eric G. Crispin
For RAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

cc-2/15/01
RAYNARD SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION
JOSIE M. M. YAMAGUCHI
SECRETARY TO THE CHAIRMAN



00 OCT 19 PH 1:16

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

October 18, 2000

The Honorable Gary Yee, Director
City and County of Honolulu
Department of Design & Construction
650 South King Street
Honolulu, HI 96813

Dear Mr. Yee:

Subject: West Mamala Bay Wastewater Facilities Plan, Draft EIS,
Ewa, Central Oahu, Primary Urban Center, Oahu,
Dated September, 2000

Thank you for the opportunity to review the subject application.

The Department of Hawaiian Home Lands has substantial property interest in the West Mamala Bay area and we support your efforts to plan for the long term development and management of wastewater collection, transmission and processing facilities.

If you have any questions, please call Daniel Ornellas of our Planning Office at 586-3836.

Aloha,

Daniel Ornellas
Raynard C. Soon, Chairman
Hawaiian Homes Commission

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET - HONOLULU, HAWAII 96813
TELEPHONE (808) 525-4411 FAX (808) 525-4412



JAN 10 9:37

ACTING DIRECTOR
LEI LEE A.C. CHOI
PLANNING DIVISION

Rae M. Loui, P.E. Acting Director
January 9, 2001
Page 2

correctly states the objective and policies regarding wastewater treatment and disposal in the Ewa region to the year 2020.

Section 5.6.2 correctly states that the DP Common Provisions will remain in effect for the current Central Oahu and Primary Urban Center DP's until the proposed Central Oahu Sustainable Communities Plan and the proposed Primary Urban Center DP, respectively are adopted by ordinance. Therefore, the West Mamala Bay Facilities Plan is still subject to Section 24-1.8(b)(2)(A) of the DP Common Provisions regarding the identification of wastewater collection and disposal systems shown on the DPPFM.

Section 5.6.2 of the final EIS should be revised by correcting the reference of "Section 24-1.8(2)(A)" to read "24-1.8(b)(2)(A)."

3. Land Use Ordinance

The new Waimalu Wastewater Pump Station (WPS) and the Pearl City WPS storage facilities are within the Special Management Area (SMA). Since the project cost for each facility exceeds \$125,000, both projects require a major Special Management Area Use Permit (SMP) to be processed by our department and approved by the City Council.

The FEIS should state whether all the WPS facilities mentioned in the DEIS are owned and operated by the City or by a private entity. A minor Conditional Use Permit (CUP) is required for any work proposed at a privately owned WPS.

In reviewing the DEIS, we were unable to determine at this time whether the proposed facilities at the various WPSs will comply with the development standards contained in Section 21-2.130 (Waiver Requirements) of the Land Use Ordinance (LUO). The FEIS should mention whether any waivers will be requested for the City-owned and operated WPS that do not comply with the LUO development standards.

We recommend that in the future but prior to construction, the DDC contact our department to discuss which planned improvements will need permits or if waivers or exemptions may be granted.

4. Please include a discussion of the outfall alternatives being considered or recommended to address the reconfiguration of the Ocean Pointe Marina.

Should you have any questions, please call Tim Hata of our staff at extension 6070.

RKF:js

g:\pdp\pdp\wmbdeis.wpd

MEMORANDUM

TO: RAE M. LOUI, P.E., ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: RANDALL K. FUJIKI, AIA, ACTING DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR THE
WESTMAMALA BAY FACILITIES PLAN

In response to your memorandum dated September 27, 2000, we have reviewed the DEIS and offer the following comments.

1. General Plan

Sections 1.1 and 5.5 of the DEIS state that the purpose of the West Mamala Bay Facilities Plan was prompted by Objective C, Policy 2 which encourages growth in Ewa and Central Oahu. Since the West Mamala Bay Subdistrict also includes a portion of the Primary Urban Center, the Final (FEIS) should also cite Objective C, Policy 1 which calls for the full development of the Primary Urban Center.

We note that the proposed facilities plan is based on population projections to the year 2020. In October 2000, the DPP released its latest population projections to the year 2025. A set of the latest projections was distributed to the Department of Design and Construction (DDC). We recommend that the DDC review these latest population projections with their consultant to determine if any adjustments should be made. Sections 1.1 and 5.5 of the FEIS should be revised to acknowledge the release of the latest 2025 population projections and whether these new figures will affect the recommended planned improvements. If the latest population projections will not be used then an explanation should be provided in Section 5.5 of the FEIS.

2. Ewa Development Plan and Ewa Public Infrastructure Map

Section 5.6.1 of the DEIS provides an appropriate discussion regarding wastewater facilities in the Ewa DP area and the DP Common Provisions, respectively. Section 5.6.1

JAN 10 10 58 AM '01

EIP

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 933-1504 • FAX: (808) 933-4587
WEB SITE ADDRESS: WWW.DDC.HONOLULU.HI



PAE M. LOUI, P.E.
ACTING DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC D. CRESPIY, AIA
ASSISTANT DIRECTOR
WVWDE.P 01-097

SECRETARY
MAYOR

February 22, 2001

MEMORANDUM

TO: MR. RANDALL K. FUJIKI, AIA, ACTING DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: RAE M. LOUI, P.E., ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION
For Doug Culp

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)
EWA, CENTRAL OAHU, AND PRIMARY URBAN CENTER,
ISLAND OF OAHU

Thank you for your memorandum dated January 9, 2001 regarding the subject Draft EIS. We offer the following responses in the respective order of your comments:

1. General Plan

Sections 1.1 and 5.5 of the Draft EIS correctly states that preparation of the West Mamala Bay Facilities Plan was prompted by General Plan Objective C Policy 2, which encourages growth in Ewa and Central Oahu. While we recognize that General Plan Objective C, Policy 1 also calls for the full development of the Primary Urban Center (PUC), the relatively small amount of projected growth in the Halawa area served by the Honouliuli WWTP was not a factor in prompting preparation of the Facilities Plan.

Thank you for providing us with your department's latest population projections. The methodology used to project future wastewater flows based on your earlier projections required extensive manual reallocation of TAZ population figures to the wastewater tributary areas used in the computer model. Therefore, the model cannot be readily rerun using your latest projections. Nevertheless, with regard to recommended and alternative facility improvements, almost all are based on accommodating projected peak wet-weather flow, as opposed to projected average dry-weather flows, which are population-driven. Therefore, we do not feel that our recommendations would be significantly different if we were to rerun the model using your latest projections.

Mr. Randall Fujiki
Page 2
February 22, 2001

The Facilities Plan is a comprehensive guide for the City to address projected wastewater facility needs based on information available when it was prepared. In the future, as specific recommendations are considered for implementation, the Facilities Plan will be consulted to determine if any of the assumptions on which they are based have changed. Updated population projections or other factors that may affect a recommendation would need to be considered in the context of the Facilities Plan as a basis for subsequent design and construction.

We will revise Section 5.5 in the Final EIS to note that your population projections are subject to periodic updating and that the specific recommendations should be evaluated based on the latest available projections as they are considered for implementation. We do not feel that Section 1.1 should be revised, as it does not discuss your population projections.

2. Ewa Development Plan and Ewa Public Infrastructure Map

Your confirmation of our discussion related to the Development Plan is acknowledged. In the Final EIS, the reference to "Section 24-1.8(2)(A)" on page 5-16, will be corrected to read "Section 24-1.8(b)(2)(A)".

3. Land Use Ordinance

Table 5-1 and Figure 5-10, indicate the location of the proposed and alternative wastewater facility improvement sites relative to the Special Management Area (SMA). Both the Waimalu WWPS Storage Facility and the Pearl City Storage Facility are indicated as lying within the SMA. As stated in Section 5.8, proposed and alternative wastewater improvements that would entail "development" within the SMA will require a SMA Use Permit.

In Section 5.7 of the Final EIS, it will be clarified that all recommended and alternative facility improvements are for City-owned wastewater facilities. Therefore, minor Conditional Use Permits (CUP) will not be required. Section 5.7 currently states that if a proposed facility exceeds a district's development standards, a Waiver of Requirements would need to be obtained from DPP. As specific plans for individual projects are developed, plans will be reviewed for compliance with the district's development standards.

4. Currently, there are no proposals or alternatives for the ocean outfall being considered by the DDC in relation to the proposed Ocean Pointe Marina.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If you have any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
 201 SOUTH BERETANIA STREET
 HONOLULU, HAWAII 96813 - AREA CODE (808) 528-3111
<http://www.honolulu.gov>
<http://www.cc.honolulu.hi.us>



JEREMY HARRIS
 MAYOR

LEE D. DONOHUE
 CHIEF
 MICHAEL CARVALHO
 ROBERT AU
 DEPUTY CHIEFS

RECEIVED
 NOV 2 2 20

OUR REFERENCE CS-LS November 20, 2000

TO: GARY Q. L. YEE, AIA, DIRECTOR
 DEPARTMENT OF DESIGN AND CONSTRUCTION
 WILSON OKAMOTO & ASSOC., INC.

ATTENTION: BILL LIU, PROJECT ENGINEER

FROM: LEE D. DONOHUE, CHIEF OF POLICE
 HONOLULU POLICE DEPARTMENT

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT
 WEST MAMALA BAY WASTEWATER FACILITIES PLAN
 TAX MAP KEYS: 9-1-01 THROUGH 12, 17, 19, 21 - 25, 27 - 30, 32 - 112; 9-2-03,
 06 - 33; 9-4-01, 02, 05 - 161; 9-5-01, 02, 04 - 68; 9-6-02 THROUGH 08; 9-7-19
 THROUGH 27, 29 - 96; 9-8-01 THROUGH 18, 20, 73; AND 9-9-01 THROUGH 77
 EWA, CENTRAL OAHU, AND PRIMARY URBAN CENTER, ISLAND OF OAHU

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
 650 SOUTH KING STREET, 11TH FLOOR
 HONOLULU, HAWAII 96813
 Phone: (808) 523-4584 • Fax: (808) 523-4587
 Web site: www.cc.honolulu.hi.us



JEREMY HARRIS
 MAYOR

RAE M. LOUI, P.E.
 ACTING DIRECTOR
 GEORGE T. TAMASHIRO, P.E.
 DEPUTY DIRECTOR
 ERIC G. CRISPH, AIA
 ASSISTANT DIRECTOR

WWDE.P. 01-085

February 22, 2001

MEMORANDUM

TO: MR. LEE DONOHUE, POLICE CHIEF
 HONOLULU POLICE DEPARTMENT

FROM: RAE M. LOUI, P.E., ACTING DIRECTOR
 DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
 DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)
 EWA, CENTRAL OAHU, AND PRIMARY URBAN CENTER,
 ISLAND OF OAHU

Thank you for your letter dated November 20, 2000 (Ref.: CS-LS) commenting on the subject Draft EIS. The following response is provided in the respective order of your comments:

- We acknowledge your concerns regarding air quality, noise, and traffic impacts during construction. All construction activities will comply with applicable regulations and requirements to mitigate such impacts, to the extent possible.
- We concur with your recommendation that contractors coordinate directly with each police district where traffic impacts are anticipated. Section 4.8 of the Final EIS will include this recommendation.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

Thank you for the opportunity to review and comment on the subject document. Police Districts 2 (Wahiawa), 3 (Pearl City), and 8 (Kapolei) will be affected by this project. We have noted that mitigation measures will be implemented in addressing construction-related dust, noise, odors, and traffic complaints that were listed in our response to the Environmental Impact Statement Preparation Notice. Although we know that they are unable to be completely eliminated, we are hoping that the proposed mitigation measures will help to minimize the volume of complaints.

As a further means of minimizing traffic-related problems, we would like to strongly recommend that the contractors work directly with the specific police districts whenever and wherever traffic is going to be impacted.

If there are any questions, please call Carol Sodelami of the Support Services Bureau at 529-3658.

LEE D. DONOHUE
 Chief of Police

By *Eugene Uemura*
 EUGENE UEMURA, Assistant Chief
 Support Services Bureau

cc: Ms. Genevieve Salmonson, OEOC
 Earl Matsukawa, Wilson Okamoto & Associates, Inc.

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
 3375 KUALA STREET, SUITE 4425 • HONOLULU, HAWAII 96819-1069
 TELEPHONE: (808) 831-7711 • FAX: (808) 831-7750 • INTERNET: www.co.honolulu.hi.us



JEREMY HARRIS
 SILENT

October 12, 2000

TO: GARY Q. L. YEE, AIA, DIRECTOR
 DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTENTION: BILL LIU, PROJECT ENGINEER

FROM: JOHN CLARK, ACTING FIRE CHIEF

SUBJECT: WEST MAMALA BAY WASTEWATER FACILITIES PLAN
 DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)
 EWA, CENTRAL OAHU, AND PRIMARY URBAN CENTER,
 ISLAND OF OAHU

We received your memorandum dated September 27, 2000, regarding the Draft Environmental Impact Statement for the West Mamala Bay Wastewater Facilities Plan.

The Honolulu Fire Department requests that the following be complied with:

1. Maintain fire apparatus access throughout the construction site for the duration of the project.
2. Notify the Fire Communication Center (523-4411) of any interruption in the existing fire hydrant system during the project.

Should you have any questions, please call Battalion Chief Kenneth Silva of our Fire Prevention Bureau at 831-7778.

John Clark
 JOHN CLARK
 Acting Fire Chief

JCKS:jo
 Ref: OL-00-159

cc: Ms. Genevieve Salmonson, Director, Office of Environmental Quality Control
 Mr. Earl Matsukawa, Project Manager, Wilson Okamoto & Associates, Inc.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
 650 SOUTH KING STREET, 17TH FLOOR
 HONOLULU, HAWAII 96813
 Phone: (808) 527-4554 • Fax: (808) 527-4587
 Web Site: www.co.honolulu.hi.us



JEREMY HARRIS
 SILENT

ATTILIO K. LEONARDI
 FIRE CHIEF
 JOHN CLARK
 DEPUTY FIRE CHIEF

February 22, 2001

MEMORANDUM

TO: MR. ATTILIO K. LEONARDI, FIRE CHIEF
 HONOLULU FIRE DEPARTMENT

FROM: RAE M. LOUI, P.E., ACTING DIRECTOR
 DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
 DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)
 EWA, CENTRAL OAHU AND PRIMARY URBAN CENTER,
 ISLAND OF OAHU

Thank you for your letter dated October 12, 2000 (Ref: OL-00-159) on the subject Draft EIS. The West Mamala Bay Facilities Plan is being prepared as a long-term (20-year) guide for the development of wastewater facilities in the area served by the Honolulu Wastewater Treatment Plant. Hence, the design and construction of specific improvements implementing the Plan will span two decades. Please be assured that as these specific improvements proceed to construction, they will comply with your request as follows:

1. Fire apparatus access will be maintained throughout the construction site for the duration of the project.
2. The Fire Communication Center will be notified of any interruption in the existing fire hydrant system during the project.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

RAE M. LOUI, P.E.
 ACTING DIRECTOR
 GEORGE T. TAMASHIRO, P.E.
 DEPUTY DIRECTOR
 ERIC G. CRISPIN, AIA
 ASSISTANT DIRECTOR
 WWDE.P 01-089

Rae M. Loui

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
830 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843



November 20, 2000

EXACT COPY
Erik
JERRY HARRIS, Mayor
CHARLES A. STED, Vice Chairman
JAN MALLY, A.M.
HONORIT S.K. KAPOA, SR.
BARBARA ION STANTON
KAZU HAYASHIDA, Esq., Office
ROSS S. SASAKAWA, Esq., Office
CLIFFORD S. JAMILE
Manager and Chief Engineer

REVIEWED
NOV 27 2000

TO: GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: BIL LIU
FROM: FOR CLIFFORD S. JAMILE

SUBJECT: YOUR TRANSMITTAL OF SEPTEMBER 27, 2000 REGARDING
THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR
THE WEST MAMALA BAY WASTEWATER FACILITIES PLAN,
EWA, CENTRAL OAHU AND PRIMARY URBAN CENTER, OAHU

WILSON OKAMOTO & ASSOC., INC.

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement for the West Mamala Bay Wastewater Facilities Plan.
Our previous comment of July 7, 2000 on the Environmental Impact Statement Preparation Notice regarding the benefits of effluent reuse is still applicable.

As part of the City and County's Sewer Rehabilitation and Infiltration and Inflow Minimization plan (SI Program), we understand a salinity study was undertaken to investigate and assess the extent of saltwater intrusion in the City's wastewater collection system islandwide. We are concerned about maintaining chloride levels of secondary effluent into the Honouliuli water reclamation facility. Saltwater intrusion into the West Mamala Bay wastewater collection system should be minimized to keep the chloride content within the water quality specifications referenced in the Honouliuli reclamation facilities contract.

If you have any questions, please contact Barry Usagawa at 527-5235.

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.
Office of Environmental Quality Control

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 Fax: (808) 523-4587
Website: www.cc.honolulu.gov



JERRY HARRIS
MAYOR

September 27, 2000

WMDE.P 00-649

P-683/00 PE
RECEIVED
BO OF WATER SUPPLY
Oct 3 2 59 PM '00
GARY Q. L. YEE, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

MEMORANDUM

TO: MR. CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY
FROM: FOR GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY WASTEWATER FACILITIES PLAN
DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)
TAX MAP KEYS: 9-1-01 THROUGH 12, 17, 19, 21 - 25, 27 - 30,
32 - 112; 9-2-03, 06 - 33; 9-4-01, 02, 05 - 161; 9-5-01, 02, 04 - 69;
9-6-02 THROUGH 08; 9-7-19 THROUGH 27, 29 - 96; 9-8-01 THROUGH
18, 20, 73; AND 9-9-01 THROUGH 77.
EWA, CENTRAL OAHU, AND PRIMARY URBAN CENTER,
ISLAND OF OAHU

Enclosed for your review is the Draft EIS for the West Mamala Bay Facilities Plan which was prepared pursuant to Chapter 343, Hawaii Revised Statutes, and Title 11, Chapter 200 Administrative Rules, Department of Health, State of Hawaii.

The Draft EIS will be published in the October 8, 2000 issue of the Office of Environmental Quality Control's Environmental Notice. Please send your original comments to:

Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813
Attention: Mr. Bill Liu, Project Engineer

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 533-4564 • FAX: (808) 533-4567
WWW.DDC.CITYOFHONOLULU.HI

MAH 17 2000



JEREMY HARRIS
MAYOR

RAE M. LOUI, P.E.
DIRECTOR
GEORGET TAMASIMBO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.P 01-093

March 6, 2001

MEMORANDUM

TO: MR. CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: RAE M. LOUI, P.E., DIRECTOR *RAM*
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)
EWA, CENTRAL OAHU AND PRIMARY URBAN CENTER,
ISLAND OF OAHU

September 27, 2000

-2-

Mr. Clifford S. Jamile

Please send copies of the comments to the following:

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 S. Beretania Street, Room 702
Honolulu, Hawaii 96813

and

Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
Attention: Mr. Earl Matsukawa, Project Manager

Your comments must be postmarked by November 22, 2000. Your input on the Draft EIS is appreciated.

Enclosure

cc: Mr. Earl Matsukawa, Wilson Okamoto & Associates, Inc.

Thank you for your letter dated November 20, 2000 regarding the subject EIS. We offer the following responses in the respective order of your comments:

We acknowledge your previous comment regarding the benefits of effluent reuse that was offered in your letter of July 7, 2000. As discussed in Section 3.5 of the Draft EIS, the West Mamala Bay Facilities Plan includes provisions for water reclamation at the Honouliuli Wastewater Treatment Plant.

Regarding chloride levels entering the Honouliuli water reclamation facility, it is not anticipated that the contracted limit of 232 mg/l for R1 Reclaimed Water will be exceeded in the foreseeable future. In conjunction with the City's Sewer Rehabilitation and Infiltration & Inflow Minimization Plan we are currently preparing a Salinity Study Update assessing the extent of saltwater intrusion in the City's wastewater collection system island wide. The Pre-Final Report of the Salinity Study Update indicates no high wastewater salinity areas in the collection system served by the Honouliuli Wastewater Treatment Plant. Hence, no recommendations to address such problem areas are offered.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If you have any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

PACIFIC PARK PLAZA • 211 KAPOLAHU BOULEVARD, SUITE 1300 • HONOLULU, HAWAII 96813
PHONE: (808) 523-4228 • FAX: (808) 523-4720



JEREMY HARRIS
MAYOR

WILSON OKAMOTO & ASSOC., INC.

CHERYL D. SOON
DIRECTOR
JOSEPH M. MAGALON, JR.
DEPUTY DIRECTOR

November 22, 2000

TPD10/00-04822R

MEMORANDUM

TO: GARY Q.L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: BILL LIU, PROJECT ENGINEER

FROM: CHERYL D. SOON, DIRECTOR

SUBJECT: WEST MAMALA BAY WASTEWATER FACILITIES PLAN

In response to your September 27, 2000 memorandum, the draft environmental impact statement for the subject project was reviewed. The following comments are the result of this review:

1. The list of City permits and approvals on Page S-6 should reflect that the Street Usage Permit is issued by this department instead of the Department of Planning and Permitting.
2. We concur with the conclusion in Section 4.8 Traffic that the proposed long-term improvements to the wastewater collection, treatment and disposal system should not adversely impact the City's roadway network. However, some of the projects may have traffic impacts during construction. As specific projects have not yet been developed to implement the plan, Section 4.8 should include a discussion regarding the future coordination anticipated. This discussion should include identifying potential traffic impacts and proposed mitigation measures in detail.

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

cc: Ms. Genevieve Salmanson,
Office of Environmental Quality Control
Mr. Earl Matsukawa, Wilson Okamoto & Associates, Inc.

CHERYL D. SOON

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4564 • FAX: (808) 523-4587
WWW.DCD.HONOLULU.HI



JEREMY HARRIS
MAYOR

RAE M. LOUI, P.E.
ACTING DIRECTOR
GEORGE T. TAMASUHO, P.E.
DEPUTY DIRECTOR

ERIC G. CRUSPH, AIA
ASSISTANT DIRECTOR

WWDE.P 01-094

February 22, 2001

MEMORANDUM

TO: MS. CHERYL D. SOON, ACTING DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

FROM: RAE M. LOUI, P.E., ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: WEST MAMALA BAY FACILITIES PLAN
DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)
EWA, CENTRAL OAHU AND PRIMARY URBAN CENTER,
ISLAND OF OAHU

Thank you for your letter dated November 22, 2000 (TPD 10/00-04822R) regarding the subject Draft EIS. We offer the following responses in the respective order of your comments:

1. Your clarification that the Street Usage Permit is issued by the Department of Transportation Services, not the Department of Planning and Permitting, is appreciated. The Final EIS will reflect this correction.
2. We are pleased that you concur with our finding that the proposed wastewater collection, treatment and disposal improvements should not adversely impact the City's roadway network in the long-term. We also acknowledge, however, that traffic impacts may occur during the construction of these improvements. Section 4.8 of the Draft EIS provides examples of measures that construction contractor for specific improvements may be required to implement to mitigate traffic impacts. These include appropriate coordination with DTS, the State Department of Transportation and providers of emergency services and public transportation. In addition, the Section 4.8 of the Final EIS will note that as specific improvements are developed and designed, the DTS and State Department of Transportation will be consulted. If necessary, potential traffic impacts will be assessed in detail and mitigation measures developed for implementation during construction.

We appreciate your participation in the EIS review process. Your letter, along with this response, will be reproduced in the Final EIS.

If you have any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

The Senate
of the
State of Hawaii
STATE CAPITAL
HONOLULU, HAWAII 96813



TO GET TO THE
HONOLULU CITY

October 4, 2000

Mr. Gary Yee
Department of Design and Construction
650 S. King St.
Honolulu, Hawaii 96813

Dear Mr. Yee,

The Halawa WWPS storage facility is shown in the parking lot area of the Aloha Stadium. Any loss of parking at the stadium does impact the neighboring communities.

Will the installation of this underground storage facility permanently eliminate any stadium parking?

Will the construction be scheduled to minimize the impact of high or anticipated periods of need for capacity parking?

Thank you for your time, and it would be much appreciated if you could respond to the above inquiries.

Sincerely,

Norman Sakamoto

Norman Sakamoto
Senator, 16th District

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 527-4564 • Fax: (808) 933-4567
Web site: www.do.dc.honolulu.gov



JEREMY HARRIS
MAYOR

RAE M. LOUI, P.E.
ACTING DIRECTOR
GEORGET. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRESPIEN, AIA
ASSISTANT DIRECTOR
WWDE.P 01-087

February 22, 2001

The Honorable Norman Sakamoto
State Senate
District 16
State Capitol
Honolulu, Hawaii 96813

Dear Senator Sakamoto:

Subject: West Mamala Bay Facilities Plan Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu and Primary Urban Center, Island of Oahu

Thank you for your letter dated October 4, 2000. We offer the following responses in the respective order of your comments:

1. The construction of the proposed flow equalization facility at the Halawa WWPS will temporarily eliminate some stadium parking in the immediately adjacent area. Approximately 250 - 300 parking stalls will be affected.
2. Inasmuch as construction of a flow equalization facility will span approximately one year, it may not be possible to avoid impacts on major annual and seasonal events. In the future, however, as the project progresses through the planning and design, details regarding construction start dates, phasing to allow limited use during construction and alternate parking plans will be developed to minimize inconveniences to stadium patrons.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If there are any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,

William Liu

For: RAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-0001

EISEA
01-2608

DEC 20 2000

December 18, 2000



Scott W.H. Seu, P.E.
Manager
Environmental Department

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

Attention: Mr. Bill Liu, Project Engineer

Subject: West Mamala Bay Facilities Plan

Thank you for the opportunity to comment on the September 2000 Draft EIS for the West Mamala Bay Facilities Plan, as proposed by the Department of Design and Construction, City and County of Honolulu. We have reviewed the subject document and have no comments at this time.

HECO shall reserve further comments pertaining to the protection of existing powerlines bordering the project area until construction plans are finalized. Again, thank you for the opportunity to comment on this Draft EA.

Sincerely,



WINNER OF THE EDISON AWARD
FOR DISTINGUISHED INDUSTRY LEADERSHIP

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 522-3564 • Fax: (808) 522-4587
Web site: WWW.CO.HONOLULU.HI



JEREMY HARRIS
MAYOR

RAEM LOUI, P.E.
ACTING DIRECTOR
GEORGET. TANUSHIRO, P.E.
CITY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR
WWDE.P 01-096

February 22, 2001

Mr. Scott Seu, Manager
Environmental Department
Hawaiian Electric Company
P.O. Box 2750
Honolulu, Hawaii 96840-0001

Dear Mr. Seu:

Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu, and Primary Urban Center, Island of Oahu

Thank you for your letter dated December 18, 2000 indicating that you have no objections or comments regarding the proposed West Mamala Bay Facilities Plan, as assessed in the subject Draft EIS.

We appreciate your participation in the EIS review process. Your letter, together with this response, will be reproduced in the Final EIS.

If you have any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,

for RAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.



FOR 2000-2001
OCT 17 2000

WILSON OKAMOTO & ASSOCIATES, INC.

October 17, 2000

Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Attention: Mr. Bill Liu, Project Engineer

Gentlemen:

Subject: Draft Environmental Impact Statement (EIS)
West Mamala Bay Wastewater Facilities Plan

Please be advised that The Gas Company maintains underground utility gas mains and gas transmission lines in the project vicinity, which serves commercial and residential customers in the area. We would appreciate your consideration during the project planning and design process to minimize any potential conflicts with the existing gas facilities in the project area as is stated in Section 4.8 of the study.

Thank you for the opportunity to comment on the Draft Environmental Assessment. Should there be any questions, or if additional information is desired, please call me at 594-5570.

Very truly yours,

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

CEC:SA
00-181

cc: Ms. Genevieve Salmonson, Director, Office of Env. Quality Control
Mr. Earl Matsukawa, Project Manager, Wilson Okamoto & Assoc.

THE GAS COMPANY
615 Kamehameha Avenue, Honolulu, Hawaii 96814
PO Box 3000 Honolulu, Hawaii 96802-3000
Telephone 808-531-5600 Fax 808-531-5600

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 522-4564 • Fax: (808) 523-4587
Web site: www.cd.honolulu.gov



JEREMY HARRIS
MAYOR

RAE M. LOUI, P.E.
ACTING DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR
WWDE.P 01-090

February 22, 2001

Mr. Charles E. Calvet
Manager, Engineering
The Gas Company
515 Kamakee Street
Honolulu, Hawaii 96814

Dear Mr. Calvet:

Subject: West Mamala Bay Facilities Plan
Draft Environmental Impact Statement (EIS)
Ewa, Central Oahu and Primary Urban Center, Island of Oahu

Thank you for your letter dated October 17, 2000 regarding the subject Draft EIS.

The West Mamala Bay Facilities Plan is being prepared as a long-term (20-year) guide for the development of wastewater facilities in the area served by the Honolulu Wastewater Treatment Plant. Hence, the design and construction of specific improvements implementing the Plan will span two decades. Please be assured that as these specific improvements are designed, all agencies and public utilities with facilities that could be impacted will be consulted.

We appreciate your participation in the EIS review process. Your letter, along with this response, will be reproduced in the Final EIS.

If you have any questions, please call William Liu of the Wastewater Design and Engineering Division at 527-6871.

Very truly yours,

RAE M. LOUI, P.E.
Acting Director

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

ORIGINAL

PUBLIC HEARING

IN RE WEST MAMALA BAY FACILITIES PLAN EIS

The above-entitled matter came on for hearing at the Ewa Elementary School, 91-1280 Renton Road, Ewa Beach, Hawaii 96813, commencing at 6:35 p.m. on Tuesday, November 14, 2000.

REPORTED BY: JOLENE C. HANECA, CSR #132
Notary Public, State of Hawaii

ATTENDED BY:
Tracy Fukuda
Earl Matsukawa
James Honke
Noreen Endo
Garrett Leong
Bill Liu
Tim Steinberger
Laura Mau
Daniel Meyer
Harold Yee

- 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

-000-

MR. HONKE: Good evening. We don't want to intimidate you, but it looks like you're the only public here tonight. You have to sign in to testify.

I would just like to welcome you to tonight's public hearing on the West Mamala Bay Facilities Plan EIS.

We have from the City Tim Steinberger and Bill Liu, who are heading this project, and I'm James Honke, chief of the Wastewater Design Engineering Division.

We also have our consultants from Wilson Okamoto & Associates, and Earl Matsukawa will be doing most of the presentation, and Brown & Caldwell, subconsultants.

The West Mamala Bay Facilities Plan is to ensure that the infrastructure needs for wastewater for the area called the West Mamala Bay Sewer Subdistrict is met through the year 2020 and the Draft EIS is to assess the impacts of the preliminary recommendations that have developed in the planning process.

This public hearing is being held to solicit your testimony and input on the preliminary Facilities Plan recommendations and the findings of

3
1 the Draft EIS, and if you want to testify, could you
2 please sign up at the front table. If you don't want
3 to testify, we still ask you to sign in so we can
4 inform you of subsequent actions regarding this plan.

5 Earl will conduct the meeting. Earl.

6 MR. MATSUKAWA: Again, I'm Earl Matsukawa
7 with the firm of Wilson Okamoto & Associates. From
8 Wilson Okamoto, we have Laura Mau, Tracy Fukuda and
9 Noreen Endo. And from Brown & Caldwell Consultants,
10 who are handling wastewater treatment and disposal,
11 we have Garrett Leong sitting back there.

12 On this agenda tonight, as part of the public
13 hearing, I'm going to be providing a brief summary of
14 the West Mamala Bay Facilities Plan and findings of
15 the EIS. These are very large documents that I have.
16 One of these is the Facilities Plan and the other is
17 the Draft EIS.

18 So it's going to be a really brief overview,
19 because, otherwise, I'd be talking all night. I'm
20 going to give like a 20-minute overview of these
21 documents and then we'll have questions and answers.
22 Just to kind of clarify, if you have any specific
23 questions about any particular part of the plan or
24 any particular aspect of the EIS, then we can answer
25 those questions to get a clearer idea of what we're

4
1 presenting.

2 Then what I will do is we'll just stop the
3 meeting and then open the public hearing portion, at
4 which time you may present your testimony. Since we
5 don't have too many people, we're not going to limit
6 you to a time limit on that.

7 So moving on, this is the study area for the
8 West Mamala Bay Facilities Plan and it extends from
9 Haliwa all the way to West Beach, Ko' Olina, from Ewa
10 Beach all the way to Milliani. It doesn't include
11 Wahiawa and Schofield Barracks. Almost this entire
12 area is served by the Honouliuli Wastewater Treatment
13 Plant that discharges through an ocean outfall.

14 This is the project schedule that we went on in
15 preparing these documents. We prepared an Interim
16 Plan Report back in June and we held a public meeting
17 back then in June 1999 and there was a public comment
18 period associated with that.

19 Then in December last year, we published the
20 Pre-Final Plan Report, and that Pre-Final Plan Report
21 had a number of preliminary recommendations for the
22 collection, treatment and disposal system.

23 We also had two public meetings in January held
24 back to back, and then there was almost a two-month
25 comment period in which time we received written

1 comments on the Pre-Final Plan Report. Soon
 2 thereafter, we started the Environmental Impact
 3 Statement Preparation Notice. There was a 30-day
 4 comment period associated with that.
 5 We've been preparing the Draft EIS and we
 6 published that in the beginning of October last
 7 month, and we are currently in the public comment
 8 period, 45-day public comment period, and we're
 9 currently holding the public hearing. Now, the
 10 public comment period extends to November 22nd.
 11 That's the public comment deadline.

12 Within your agenda, the handout that you got
 13 which contains the agenda, there's also a listing of
 14 libraries where you can review the Draft EIS and
 15 we've also included in that a fold-out document, a
 16 fold-out letter that you can write your comments on,
 17 and it's pre-addressed and you can just mail that as
 18 comments of the EIS or recommendations of the
 19 Facilities Plan.

20 After the public comment period ends, we will
 21 be preparing a Final EIS and, hopefully, we'll get
 22 that out by January or February of next year and then
 23 we'll finalize the Facilities Plan Report for
 24 publishing sometime in March or April.

25 The preliminary recommendations cover two basic

1 parts: One is the collection system and the other is
 2 the treatment and the disposal system, and I'll be
 3 discussing the collection system first.

4 This is the east and west interceptor systems.
 5 This is the major lines that serve the west, areas
 6 west of the treatment plant, and then the east
 7 interceptor is a major collection line serving the
 8 rest of the service area. The treatment plant,
 9 Honouliuli Wastewater Treatment Plant is located here
 10 and there's a deep ocean outfall where treated
 11 wastewater has been discharged.

12 For the Kapolei area, there is a Sewer Master
 13 Plan, which the City has accepted. It basically
 14 outlines the developer-financed improvements to the
 15 west interceptor to collect the wastewater from the
 16 new developments in this area.

17 So the preliminary recommendation is basically
 18 for the City to implement that, make sure that the
 19 Sewer Master Plan is implemented as more development
 20 proceeds in this area so that the needs of this area
 21 can be accommodated.

22 Then we looked at the east interceptor system.
 23 What is driving the needs for the east interceptor,
 24 unlike the west interceptor where we're looking for a
 25 lot of development to drive the needs for the sewer

1 system, the east interceptor is really limited by
2 peak wet weather flows.

3 Those are flows that are generated when there
4 are major storms and the rainwater gets into the
5 collection system, so suddenly you have a lot more
6 highly diluted wastewater coming down the collection
7 system, and since it's all -- once all the water gets
8 in the whole liquid stream, it's wastewater that
9 needs to be treated and disposed of.

10 The improvements that are being proposed in
11 this area are based on a modeling of that peak wet
12 weather flow. The line in this area basically can
13 handle the average flow generated in here, the
14 regular wastewater flow, with the limitation then of
15 the peak wet weather flow.

16 And to address the peak wet weather flow needs
17 in the east interceptor system, we looked at three
18 alternatives. One is to upgrade the lines and the
19 pump stations and all of the facilities that convey
20 all of that storm water to the Honouliuli Wastewater
21 Treatment Plant.

22 Another alternative is to build flow
23 equalization facilities. These are basically huge
24 storage reservoirs that will catch all of the excess
25 storm flow and then pump it back into the system at a

1 slower rate so it's not overtaxed. Then, finally,
2 there's a combination of the two.

3 Basically, this is the upgrade system
4 alternative. There will be like a new Waimalu relief
5 sewer tunnel, upgrading pump stations, upgrading some
6 lines, upgrading the Waipahu wastewater pump station
7 and relief interceptor line in here. Basically, it's
8 increasing the capacity of these facilities. They
9 should be able to accommodate the design storm which
10 was used in the model.

11 The flow equalization within the system calls
12 for the construction of four storage facilities.
13 I'll show them to you as we go on here.

14 The first one would be in the Aloha Stadium
15 parking lot. It's kind of hard to see, but this is
16 Salt Lake Blvd. coming down here. The Stadium is
17 here, the parking lot is here.

18 Right alongside Salt Lake Blvd. next to Halawa
19 Stream, there is a wastewater pump station, and the
20 collection of -- the storage basin and storage
21 facility will be built under the parking lot and next
22 to the pump station. You can see the Stadium in the
23 background.

24 And, basically, once you build this thing, it
25 will be underground. It will have remotely

1 a year at the most and there will probably be some
 2 years where they're not used at all.
 3 The fourth one is at the Millilani Pre-Treatment
 4 Facility. It used to be the wastewater treatment
 5 plant on the very makai end of Millilani. This is a
 6 photo of the pre-treatment facility.
 7 This design, the conceptual design for this
 8 could either be an open basin-type facility, or if
 9 odors are found to be a major concern, it could be an
 10 underground facility. That still is yet to be
 11 determined, and the City has an ongoing study of this
 12 facility.
 13 The hybrid alternative is a combination of the
 14 two we just talked about. For example, the Waimalu
 15 relief sewer tunnel could be, is interchangeable with
 16 the Halawa storage facility. Likewise, there are
 17 some facilities in here, that if these improvements
 18 and upgrades are made, then the facility at Pearl
 19 City would not be needed.
 20 So depending on the kinds of concerns that
 21 might be expressed and the cost and other
 22 considerations, we could recommend a combination
 23 whereby we could build one and not build the other.
 24 So there are basically four combinations, each
 25 one of these related to the four storage facilities

1 controlled internal cleaning devices and the parking
 2 lot will be built right back over it.
 3 The second storage facility will be at
 4 Blaisdell Park along Kamehameha Highway in Waimalu
 5 next to the Waimalu wastewater pump station. It's in
 6 the park area, the highway here.
 7 Basically, again, like the Aloha Stadium
 8 facility, it will be built fully underground. All of
 9 them are about one million gallons storage capacity,
 10 built underground, and then the park will be restored
 11 over it.
 12 The third facility will be on the Pearl City
 13 Peninsula on Navy land at the former wastewater,
 14 Pearl City wastewater treatment plant. That plant is
 15 no longer in operation, it's been abandoned, and the
 16 facility will be built somewhere, the exact location
 17 hasn't been set out at this point. It's a
 18 conceptual plan.
 19 This facility, because there are no nearby
 20 residences, the option is probably going to be an
 21 open basin, a big open basin where the storm water
 22 will flow in and will be pumped back out into the
 23 system and then cleaned.
 24 We anticipate that, according to the model, all
 25 of these storage basins will be used just a few times

1 and four alternatives for upgrading the system that
2 we can interchange.

3 So I covered basically the west interceptor
4 system, the east interceptor system, and there are
5 also what we call isolated system deficiencies.

6 The east interceptor is the major line that
7 runs, and the west interceptor are the major lines
8 that serve these areas, but there are also some other
9 smaller lines within the system that need to be
10 upgraded regardless of which alternatives we choose,
11 and these are -- some of these are really deficient
12 manholes that have corroded a lot.

13 And we have identified these in the plan.
14 There are numerous such deficiencies which need to be
15 corrected. So there are also these things that are
16 covered in the Draft EIS.

17 Finally, there are the unsewered areas. There
18 are, actually, four unsewered areas within the study
19 area, but only two of these do not have specific
20 plans for eventual sewerage.

21 So this plan addresses two of these areas, the
22 Honolulu unsewered area mauka of here, the whole
23 residential area along Fort Weaver Road, and then it
24 has a recommendation for sewerage this Eva Beach
25 area, again an old subdivision also served by

cesspools. In the future, we would want to hook that
into the collection system for wastewater treatment.

Now, I'll get into the recommendations for
treatment and disposal. Basically, the needs
identified include the need to handle the peak wet
weather flow in the future, again comparable to what
we have done with the collection system; the need to
meet the national pollutant discharge elimination
system permit limits for the ocean outfall;
requirements or goals from the 309 Consent Decree
related to reusing the reclaimed water as well as
reusing biosolids.

We also need to address the limitations of the
ocean outfall in the future as the amount of the flow
increases; and, finally, odor control as more
development in this, in the area encroaches upon the
Honouliuli Wastewater Treatment Plant.

The recommendations, the preliminary
recommendations offered in the Pre-Final Plan include
an on-site laboratory basically to better monitor the
functioning of the plan, odor control, including
assessment, recommendations to assess the existing
odor control facilities and their effectiveness to
provide odor control for future planned facilities,
as well as a recommendation to establish a buffer

1 zone so we don't get development that could be
 2 affected by odors occurring near the plant, a
 3 recommendation to increase the liquid treatment
 4 capacity to 51 mgd -- it is currently 38 mgd -- to
 5 accommodate future flows as the area grows.

6 There's also a recommendation to change over to
 7 an anaerobic digestion dewatering system, which is
 8 compatible with the program to reuse, beneficially
 9 reuse, biosolids.

10 This system would also replace the current
 11 thermal treatment system for the solids. The current
 12 system does contribute to some of the odors from the
 13 plant.

14 The effluent reuse recommendation, the City has
 15 purchased the U.S. Filter Project, it's a water
 16 reclamation project, and this will also go towards
 17 meeting the 309 Consent Decree goals.

18 And then the final recommendation is to
 19 accommodate the future flows from the outfall, flows
 20 through the outfall by installing a pump station to
 21 force the effluent out.

22 As far as the Draft EIS, the primary impacts
 23 and adverse impacts identified by the EIS are
 24 short-term environmental impacts and this is mostly
 25 to deal with the construction of the various

1 facilities that we talked about.

2 These are real typical construction types of
 3 problems or impacts, including noise from
 4 construction equipment and traffic, the dust as we do
 5 the excavation and grading, traffic and parking
 6 problems, particularly when you dig up streets to put
 7 in new sewer lines or to replace sewer lines.

8 A lot of the -- most of the City sewer lines
 9 run along streets, and if you have to replace them or
 10 run new lines, a lot of them will be along City
 11 streets and that does cause problems with traffic,
 12 lane closure and that sort of thing, limitations on
 13 street parking and emissions from construction
 14 equipment, as well as when traffic builds up, there
 15 will be more emissions from cars, traffic congestion.

16 With regard to the alternatives for the east
 17 interceptor system, the system to upgrade
 18 alternative, because of the upgrade of water sewer
 19 lines along streets, a lot more residences and
 20 businesses that are located adjacent to the streets
 21 there will be impacted. Where construction occurs,
 22 it will impact these residences and businesses, so
 23 more residences and businesses will be impacted.

24 The flow equalization alternative, we talked
 25 about installing these storage facilities. It would

1 impact the site, but not as many people are impacted
 2 because you're not really building along the road,
 3 but you would restrict usage like at the Aloha
 4 Stadium parking lot and Blaisdell Park.

5 We estimate, roughly, to construct these
 6 facilities, it would take about a year. So that
 7 portion of the parking lot and that portion of
 8 Blaisdell Park will not be usable for about a year.

9 The impacts at Honouliuli Wastewater Treatment
 10 Plant, basically because it occurs within the plant
 11 and is not really close to residences and businesses,
 12 it will not have a major impact in the short-term
 13 while the construction is going on.

14 With regard to long-term environmental impacts,
 15 the basic benefit will be to the surface, coastal
 16 waters and associated wetlands.

17 Basically, the major improvement is that when
 18 these storms occur, you know you won't get wastewater
 19 spillages. You will be able to handle the additional
 20 flow that comes during storms, and by containing
 21 that, there will be a beneficial impact on other
 22 receiving waters where spillages might occur.

23 In upgrading the system, on the east
 24 interceptor system, basically once you put in the
 25 upgrades, once you put in the larger sewer lines,

1 build the road back over it, you really don't have
 2 any long-term impacts. It will be all covered up.

3 Flow equalization, again, for most cases, for
 4 at least Aloha Stadium parking lot and Blaisdell
 5 Park, it will be rebuilt over that so there will be
 6 no long-term impacts.

7 For those open-basin-type facilities, the other
 8 two at Pearl City and possibly Milliani, because they
 9 will be storing wastewater for periods of up to 24
 10 hours until that storm water can be pumped back into
 11 the system, there will be some odors associated with
 12 that, but, again, these are not located very close to
 13 residences so the impacts will be minimal.

14 With regard to the Honouliuli Wastewater
 15 Treatment Plant, the long-term benefit would be the
 16 system that would provide for the reuse of reclaimed
 17 water and biosolids and for improved odor control.

18 So, basically, that summarizes what was covered
 19 in the preliminary recommendations, as well as the
 20 Draft EIS. At this point, I'm going to open it up
 21 for questions. There may be some particular area
 22 you're interested in. Then after the
 23 question-and-answer, we'll move on to the actual
 24 formal public hearing, if any of you have testimony
 25 to offer. Yes?

1 MR. NEYER: On the open-storage tanks,
2 would that not add to water, non-sewer water entering
3 into the system or how are they going to contain the
4 surface water flooding into them from overflowing?

5 It's designed for sewer flow. If it's open,
6 the external water is going to be coming into that
7 area to that tank. Is that going to be considered in
8 the designing of the tank to allow for the surface
9 water flowing in?

10 MR. MATSUKAWA: Yes, what you would design
11 that for is so that surface water, you wouldn't get
12 like the floods. You will design so the flood would
13 not come in.

14 Of course, if it's open, you're going to get
15 some rainwater in directly, but the intent is to
16 collect flows and overflows, because what happens is
17 the collection system basically channels all that
18 water, so you get a lot of water coming in, and
19 that's what you want to get into the temporary
20 storage. There's about a million gallons.

21 MR. NEYER: So it's going to be raised up?

22 MR. MATSUKAWA: Yes.

23 MR. NEYER: So if there's two feet of
24 water running through, it won't flood?

25 MR. MATSUKAWA: You won't get the surface

1 flows in. You will get the rain falling down, of
2 course.

3 MR. NEYER: At Pearl City, instead of
4 using Blaisdell Park, can you put it at the
5 corporation yard?

6 MR. MATSUKAWA: The reason it's located at
7 the Blaisdell Park is that there is a pump station.
8 What you want to do is locate these facilities near a
9 pump station so basically once it fills up, because
10 what happens is that usually at the pump stations,
11 that's when you get a bottleneck.

12 You know, it's all coming in and you can't
13 go -- the pump station can't pump it out fast enough.
14 So what you do is you capture it there, and then once
15 you've captured it and a pump station is used, then
16 you can use the pump station to pump it back into the
17 system.

18 MR. NEYER: The area to the left of
19 Blaisdell Park, before the water -- that pump station
20 will give all -- the City parking lot, could we use
21 that area instead of the park area?

22 MR. MATSUKAWA: It's a consideration.

23 MR. NEYER: What would -- the blasting to
24 put the tanks in underground, what effect would that
25 have on coral and stabilization of the coral above

1 the waterline?

2 MR. MATSUKAWA: Soil studies still have to
3 be considered. At this point we're really doing some
4 conceptual ideas, but your idea of the location, I
5 think that the City will take into account whether or
6 not the corporation yard, because that's like a City
7 function. They would have to take that into
8 consideration. Yes, we still have to do the soil
9 studies to find out what kind of foundations we have.
10 MR. NEYER: It may be better to put the
11 tanks completely out of the park over at the City
12 facilities, and if needed, concrete over it, improve
13 the parking lots and all at the same time still have
14 the park, 100 percent park.

15 MR. MATSUKAWA: That's something we can
16 take under consideration. I think there's good
17 reason to look at that alternative. Yes, we will
18 note that as a possibility.

19 Any other questions? Are you offering
20 public testimony?

21 MR. NEYER: No, I'm just here learning.

22 MR. MATSUKAWA: I think at this point,
23 then, if there are any more questions, we can just
24 talk one-on-one, if that's okay with you.

25 MR. NEYER: The private sewer systems that

1 going to be hooked into this, that are hooked in, are
2 they going to be upgraded?

3 MR. MATSUKAWA: What happens is they have
4 to -- when they submit their plans for any kind of
5 sewerage, any kind of private development, the City
6 would have to review the plans to make sure that
7 they're adequate to serve the areas, their
8 development.

9 They also look down the line, is the line in
10 which they're hooking into adequate to accommodate,
11 you know, what they're producing. So, you know, it's
12 a complete check all the way down the line.

13 The Sewer Master Plan we talked about, at some
14 point, when the developers need it, they're the first
15 ones to put in this line, because it's really sized
16 for future development, and those are going to be a
17 lot larger because they're not going to have one
18 developer put in a line just big enough to handle his
19 and the next developer comes along and they have to
20 upgrade the line because suddenly there's more flow.

21 So that was the Sewer Master Plan. All the
22 developers in this whole area submit a master plan
23 for a real grand plan, because at some point when
24 they start building the line, it will be oversized
25 for the development, but in the future, as all the

1 development occurs, it's intended to address that
2 future need.

3 MR. NEYER: How much of the effluent water
4 have we accounted for in the areas that it can be
5 used and how much of the effluent water can be used
6 in this area? Have we identified that, the areas it
7 can be used and how much it is?

8 MR. MATSUKAWA: On this Facilities Plan,
9 what we are -- I talked to you about the goals for
10 reclamation. There are specific goals that have been
11 set out as part of the Consent Decree.

12 The City, our plan is intended to meet those
13 goals, the requirements for the amount of reuse
14 required. Our plan is for the wastewater facilities
15 so that the water, the reclaimed water will be there.

16 This plan does not look at the usage side of,
17 you know where that water is actually used. There
18 are ongoing studies on that side of the issue, but
19 we're just taking it up to making sure that water
20 will be, reclaimed water, will be available.

21 MR. NEYER: You're going to make so many
22 available?

23 MR. MATSUKAWA: Right.

24 MR. NEYER: And if the system goes like
25 from 38 to 45, would then the percentage increase of

1 the available go up, would that be part of it?

2 MR. MATSUKAWA: The goals are set. I
3 think like there's 13 mgd, million gallons per day,
4 now. The numbers are not at my fingertips.

5 MS. MAU: 38 and 51.

6 MR. MATSUKAWA: No, in terms of reclaimed
7 water, there's 13 mgd goals that has been met and
8 then there's another, a future goal for the usage.
9 So these are there. These goals are set and, in
10 fact, basically the system is designed so that the
11 City can meet those goals.

12 MR. STEINBERGER: The Consent Decree
13 specifically calls that we must use 10 million
14 gallons a day. That is a must.

15 There is another study going on that's being
16 sponsored by the Board of Water Supply and the
17 Department of Land and Natural Resources Water
18 Commission which looks at the water issue.

19 They do know that the total need in this area
20 for non-potable-type water for irrigation from the
21 year 2020 is going to be about 26 million gallons a
22 day.

23 Now, how much of that is going to be
24 supplemented by reclaimed water will be decided under
25 this integrated resource plan that is being

1 undertaken by the Board of Water Supply and the Water
2 Commission.

3 MR. NEYER: Okay.

4 MR. MATSUKAWA: Any more questions? We
5 don't have anybody to sign up to testify, so at this
6 point we'll close this meeting. Thank you.

7 (Hearing concluded at 7:05 p.m.).

8 -oOo-

C E R T I F I C A T E

1 I, Jolene C. Haneca, C.S.R., in and for the
2 State of Hawaii, do hereby certify:

3 That I was acting as shorthand reporter in
4 the foregoing matter on the 14th day of November,
5 2000;

6 That the proceedings were taken down in
7 computerized machine shorthand by me and were
8 thereafter reduced to print under my supervision;
9 that the foregoing represents, to the best of my
10 ability, a correct transcript of the proceedings had
11 in the foregoing matter;

12 I further certify that I am not counsel for
13 any of the parties hereto, nor in any way interested
14 in the outcome of the cause named in the caption.

15 Dated: NOV 30 2000

16 *Jolene C. Haneca*
17 Jolene C. Haneca, C.S.R. #132
18 Certified Shorthand Reporter
19
20
21
22
23
24
25

Chapter 12

References

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

12. REFERENCES

1. City and County of Honolulu Planning Department. *Central Oahu Development Plan Public Review Draft Summary Brochure*. July 1995.
2. City and County of Honolulu Planning Department. *Revisions to the Proposed Ewa Development Plan (related to the University of Hawaii West Oahu)*. July 24, 1996.
3. City and County of Honolulu Planning Department. *Honolulu GIS Maps*. 1997.
4. City and County of Honolulu Department of Parks and Recreation. *Index of Oahu Parks and Facilities*. April 1997.
5. Ducks Unlimited, Inc. *Environmental and Enhancement Plan for Pouhala Marsh, Oahu, Hawaii*. January 2000.
6. Earth Tech, Inc. *Site Summary Report Pearl City Peninsula Geographic Study Area*. Prepared for the Department of the Navy. August 2000.
7. Engineering Concepts, Inc. *Sewer Master Plan for the Regional Interceptor Sewer System for the Developments of the Estate of James Campbell in the Kapolei Area*. May 1992.
8. Federal Emergency Management Agency, *Flood Insurance Rate Map (FIRM) Community Panel Numbers 150001 0135 C, 150001 0110 D, and 150001 0080 A*.
9. Giambelluca, Thomas W., Michael A. Nullet and Thomas A. Schroeder, *Rainfall Atlas of Hawai'i, Department of Land and Natural Resources, Honolulu, Hawaii, 1986*.
10. Hawaii Pacific Engineers. *Mililani Reclamation Facility Feasibility Study*. Prepared for the City and County of Honolulu Department of Design and Construction. September 30, 1999.
11. Macdonald, Gordon A., A.T. Abbott and Frank L. Peterson. *Volcanoes in the Sea, The Geology of Hawaii, Second Edition*. 1986.
12. State of Hawaii, Department of Health. *Amendment and Compilation of Chapter 11-62 Hawaii Administrative Rules*. Date of Adoption August 30, 1991.

13. State of Hawaii, Department of Health, Wastewater Branch. *Guidelines for the Treatment and Use of Reclaimed Water*. November 22, 1993.
14. State of Hawaii, Department of Land and Natural Resources, Commission on Water Resource Management, *Oahu Groundwater Sectors and Aquifer Systems Map*, 1990.
15. State of Hawaii, Department of Land and Natural Resources. *The Hawaii Register Historic Places, Volume II, Hawaii Interim Preservation Plan*. March 1974.
16. United States Department of Agriculture Soil Conservation Service. *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii*. August 1972.
17. University of Hawaii, Department of Geology, *Atlas of Hawaii, Second Edition*, 1983.
18. Wilson Okamoto & Associates, Inc., *Draft Environmental Impact Statement Schofield Barracks Wastewater Treatment Plant*, April 1998.
19. Wilson Okamoto & Associates, Inc. *West Mamala Bay Facilities Plan Pre-Final Plan Report*. Prepared for City and County of Honolulu Department of Design and Construction. December 1999.
20. George A. L. Yuen & Associates, Inc., *Water Resources Protection Plan, Volume 1*, 1992.

END

CERTIFICATION

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

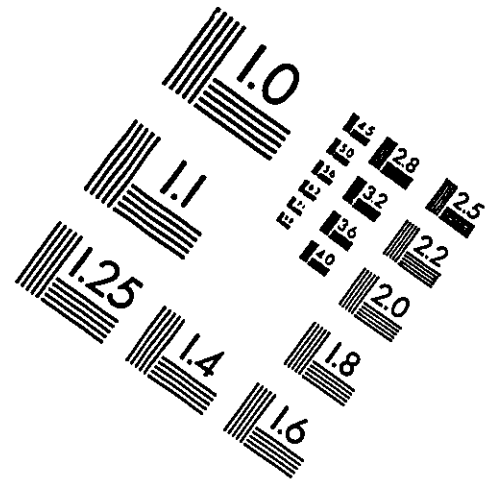
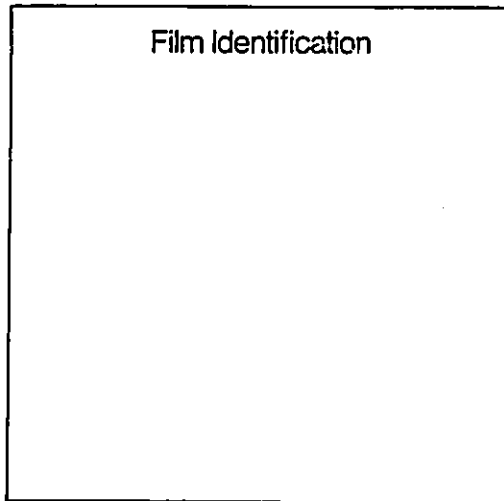
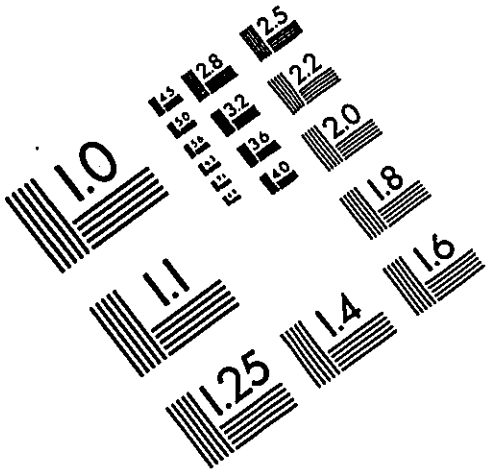
2006

DATE

Catharina Mijnsius

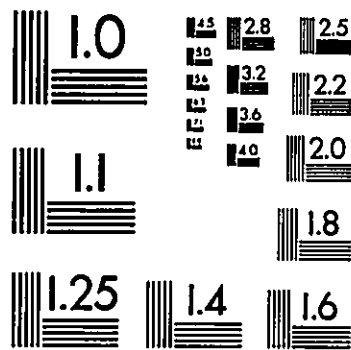
SIGNATURE OF OPERATOR

TOP



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

PRECISIONSM RESOLUTION TARGETS

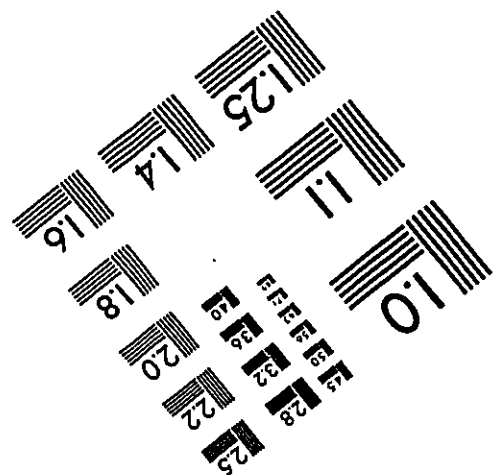
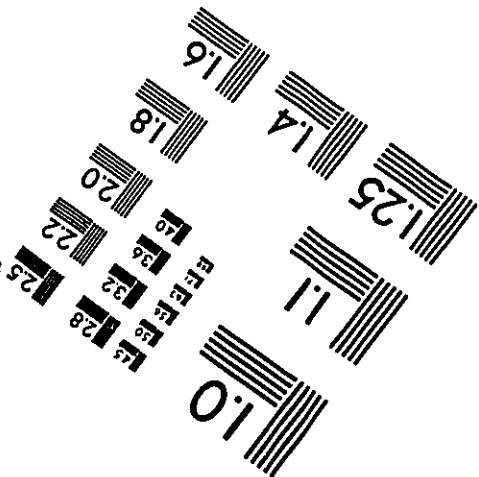


LEFT

RIGHT

150 MM

6"



PA-3 8½"x11" PAPER PRINTED GENERAL TARGET

DENSITY TARGET



ADVANCED MICRO-IMAGE SYSTEMS HAWAII