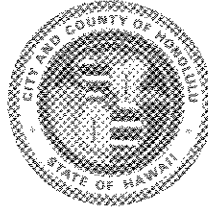


PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

RECEIVED

JEREMY HARRIS
MAYOR



'96 FEB -7 AM 1:42
CHERYL D. SOON
CHIEF PLANNING OFFICER
CAROLL TAKAHASHI
DEPUTY CHIEF PLANNING OFFICER
OFC. OF ENVIRONMENTAL
QUALITY CONTROL
ET 1/96-0042

February 1, 1996

Honorable Gary Gill, Director
Office of Environmental Quality Control
Central Pacific Plaza
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

Acceptance Notice for the Ewa
Development Projects Off-Site Water System
Final Environmental Impact Statement

We are notifying you of our acceptance of the Final Environmental Impact Statement (EIS) for the Ewa Development Projects Off-Site Water System, as satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes.

Pursuant to Section 11-200-23 (e), Chapter 200, Title 11 ("Environmental Impact Statement Rules") of the Administrative Rules, this Acceptance Notice should be published in the February 23, 1996 OEQC Bulletin.

We have attached our Acceptance Report of the Final EIS for the Ewa Off-Site Water System. Should you have any questions, please contact Eugene Takahashi of our staff at 527-6022.

Sincerely,

A handwritten signature in cursive script, appearing to read "Cheryl D. Soon".

CHERYL D. SOON
Chief Planning Officer

CDS:lh

Attachment

cc: Department of Housing and Community Development
Environmental Communications

1995 - Oahu - FEIS -
Ewa offsite water

PLANNER

FINAL ENVIRONMENTAL IMPACT STATEMENT

CHAPTER 343, HAWAII REVISED STATUTES

FOR

OFF-SITE WATER SYSTEM FOR
EWA DEVELOPMENT PROJECTS

Tax Map Key: 1st Div., 9-1-01, -05, -07, -10, -12, -17 To
-21, -25 & -28
9-4-02 & 9-4-137

FOR

Dept. Of Housing &
Community Development
City & County Of Honolulu

WITH

THE BOARD OF WATER SUPPLY

BY

Engineers Surveyors Hawaii, Inc.
Building No. 6, Suite No. 1
1020 Auahi Street
Honolulu HI 96814

And

Environmental Communications

DECEMBER, 1995

**FINAL ENVIRONMENTAL
IMPACT STATEMENT**

FOR

OFFSITE WATER SYSTEM

**EWA DEVELOPMENT
PROJECTS**

**DEPARTMENT OF HOUSING
AND COMMUNITY DEVELOPMENT**

WITH

**BOARD OF
WATER SUPPLY**

CITY AND COUNTY OF HONOLULU

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FINAL ENVIRONMENTAL IMPACT STATEMENT

OFFSITE WATER SYSTEM

EWA DEVELOPMENT PROJECTS

I.0 INTRODUCTION AND SUMMARY

1.1 Introduction; Brief Description of the Action

* (*DEIS Revisions* are indicated in boldface italic face and are provided for clarification)

This Final Environmental Impact Statement *is prepared as a planning document by the Department of Housing & Community Development, City & County of Honolulu in conjunction with the Board of Water Supply.* Preparation of this document will be in accordance with Title 11, Chapter 200, Department of Health Administrative Rules on Environmental Impact Statements, which states that Chapter 343 review is required for projects on State or County lands. As a *dual purpose* planning tool *and specific EIS document for planned DHCD projects,* , this document will examine the various physical and socio-economic impacts that could accrue from the future urbanization of the Ewa Plains. Potable water demand for the urban/residential-commercial developments for government as well as private sector projects will be examined as a twenty year forecast, taking the development period to the year 2015.

The focus of this FEIS is on the ability of the project to deliver potable water in the quantities anticipated in the event of full growth *as well as to the specific DHCD projects, West Loch Phase I & II, and Ewa Villages..* As both a *twenty year planning tool and a site specific EIS,* the *planning and design by the BWS of source development, storage capability, and transmission service lines can be scheduled, designed, and built to meet future service area needs and requirements. Future water system improvements for the actual developments to be served by the BWS future service areas will be described in EIS documents to be prepared by the future service area developments.*

Alternatives considered are provided in Section 4 and include the Do-Nothing alternative as well as alternative methods involving the recycling of various quality water.

Permits to be obtained are itemized in Section 6.3.4 and include a Development Plan Public Facilities Map (DPPF) amendment as well as water pollution control permits, grading and excavation permits, State Department of Health air and noise quality permits, as well as other land use amendments.

The proposed project is permitted in the project area and is consistent with the City's land use plans and policies, except for the DP PF Map. Unresolved issues are found in section 6.11 and deal with ability to deliver an adequate potable water supply to the year 2015.

1.2 Development Summary

Agency: Department of Housing & Community
Development with the Board of Water Supply

Agent: Engineers Surveyors Hawaii, Inc.

Accepting Authority: Planning Department, City & County of
Honolulu

Contact Person: F.J. Rodriguez
(for DEIS comments) Environmental Communications
P.O. Box 536
Honolulu, Hawaii 96809
phone: (808)528-4661 fax: (808) 528-4883

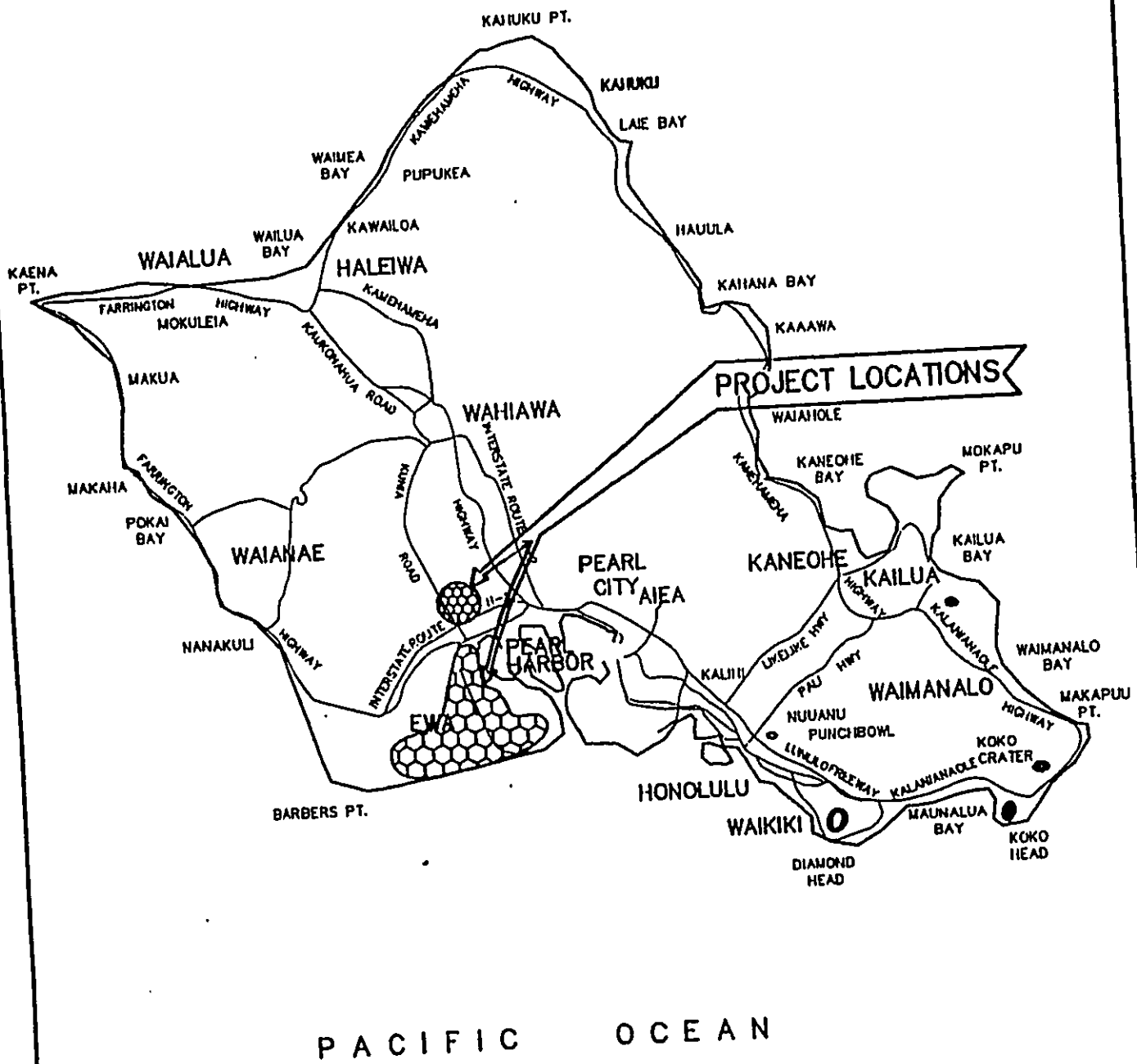
Project Location: Ewa District (See Figure 1).

Tax Map Key: 1st Div., 9-1-01, 05, 07, 10,-12- 17 to 21,- 25 & 28
9-4-02 & 9-4-137

Area: 4.5 ± acres

Land Owners: City & County of Honolulu, Dept. of Parks &
Recreation; State of Hawaii, Dept. of
Transportation; and Estate of James Campbell

State Land Use: Agriculture; Urban



REVISED: 10/31/94

BEG: 3/12/92

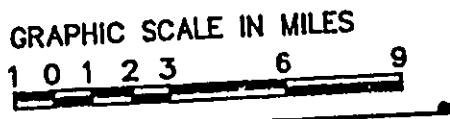
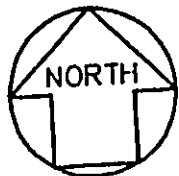


FIGURE 1 PROJECT VICINITY MAP

OFF-SITE WATER SYSTEM FOR
EWA DEVELOPMENT PROJECTS

County Development
Plan Designation:

Land Use Map: Parks & Recreation &
Agriculture
Public Facilities Map: Park (Private Funding
No time schedule) ; PW - Potable Water

Zoning: Agriculture

1.3 Brief Summary of Project

The proposed *site specific* project for the DHCD projects at West Loch Phase I & II, and Ewa Villages is a planned Source Well, Storage Reservoir, and Transmission system to be located on approximately 4.5 acres (northwest) of Interstate H-1 Highway. The well site (.5 acre), and reservoir site (1.5 acres) are mauka of the H-1. The transmission system (2.5 acres) is makai of H-1 along Fort Weaver Road.

The existing water supply sources, storage, and distribution system nearby are inadequate to serve the proposed projects of DHCD and the BWS projected future service areas. At the present time, the Ewa Plains Water Development Corporation (EPWDC) has constructed water system facilities within the service area but these facilities are unavailable to DHCD. Further, the BWS has a reserved capacity of 1.0 million gallons per day (GPD) in the existing 42-inch main by EPWDC, but that capacity has already been earmarked for various BWS improvements and uses. Therefore, the following planned improvements are for the DHCD planned projects and future BWS service areas through the year 2015.

1.3.1 - Proposed water system improvements (as shown on Figure 4)

a. Well Pump Station Site Improvements will consist of three (3) 1050 gallons per minute (GPM) submersible well pumps.

b. A 16,000 gallon glass lined steel overflow tank with a spillway elevation of 332.5 feet is required for the three well pumps. The well site will be located in a City & County of Honolulu park site on Heahea Street in the Royal Kunia Subdivision. TMK: 9-4-137: 138.

c. Transmission Main (Well Site to Reservoir) will consist of a 16-inch pipeline from the well pump station through Royal Kunia and Village Park subdivision roads and Kunia Road to the existing Kunia 228.0' 1.5 MG reservoir site.

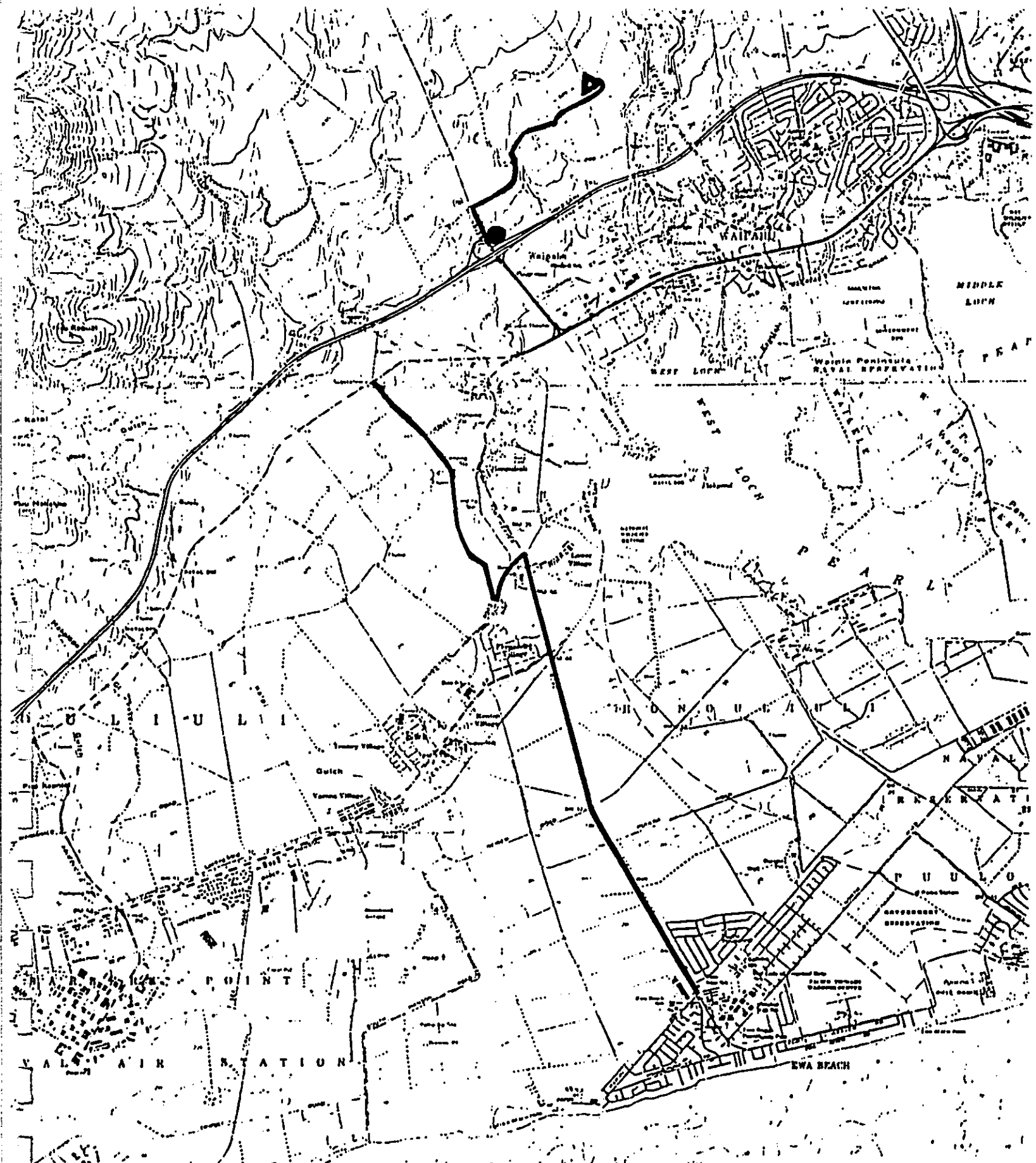


FIGURE 2 LOCATION MAP

**OFF-SITE WATER SYSTEM FOR
EWA DEVELOPMENT PROJECTS**

d. Reservoir site improvements will consist of the existing Kunia 228' reservoir and a Phase I 1.5 MG reservoir. The reservoir site will be located in open State lands north of the existing Kunia 228' reservoir 1.5 MG site along Kunia Road. TMK: 9-4-02: 25. *A future DHCD 2.0 MG reservoir site is designated below Farrington Highway at the 228' elevation. This will complete the 3.5 MG requirements for the DHCD projects at West Loch Phase I & II and Ewa Villages.*

e. A Granular activated Carbon (GAC) water treatment plant is under consideration for design should the water quality test results dictate a need for the treatment plant. The GAC plant can be located in open State land south of the existing Kunia 228' 1.5 MG reservoir site. TMK: 9-4-02: 25 .

f. **Transmission Main (Reservoir to Service Areas)**

1. A 12-inch pipeline from Farrington Highway to Puuloa Road would fulfill the DHCD requirements to serve its planned projects *at West Loch Phase I & II and Ewa Villages.*
2. In anticipation of the Board of Water Supply's future water service areas in Ewa Beach, DHCD has allowed BWS to participate in the transmission main *resulting in increasing* the main size from 12-inch to 42-inch.
3. A 42-inch pipeline from Farrington Highway (near the Farrington Booster Pump Station) will traverse along a plantation road to Mango Tree Road; then a 36-inch pipeline will run along Mango Tree Road and finally along Fort Weaver Road to serve the DHCD projects and BWS future service areas.
4. A 30-inch pipeline will be installed along Fort Weaver Road from Puuloa Road to Papi Road. Two wells will be required to serve the BWS future service areas. *Well sites are undetermined for the BWS future service areas.*

1.3.2 All water mains not located in the public right-of-way will be accessible to the Board of Water Supply at all times via an asphalt concrete paved roadway to conform to the standards of the Honolulu BWS.

1.3.3 DHCD with the assistance of the Honolulu BWS will obtain the necessary permits from the State Commission on Water Resource Management to accommodate the remaining required demands of the proposed development.

1.4 Significant Beneficial and Adverse Impacts

a. Beneficial impacts

The project will *provide a delivery system* for potable water for the number of existing and planned residential units in Ewa; will stimulate economic development in the area; and will generate needed property tax revenues.

It will also create short term employment opportunities for those in the construction industry, as well as long-term employment to service the future developments.

b. Summary of major adverse impacts and proposed mitigation measures

The following is a summary of the more significant impacts and proposed mitigation measures.

Impact: The proposed water system storage component may result in the reduction of open space.

Mitigation measures: *To mitigate concerns about open space loss, the BWS will situate the reservoir in as close proximity to the existing reservoir as technically practicable. The facility will be dependent on gravity flow to reduce the need to install pump stations to deliver the product to the transmission lines.*

Impact: The proposed water system storage component may result in the reduction of open space.

Mitigation measures: *To mitigate concerns about open space loss, the BWS will situate the reservoir in as close proximity to the existing reservoir as technically practicable. The facility will be dependent on gravity flow to reduce the need to install pump stations to deliver the product to the transmission lines.*

Impact: The proposed project will increase demands on the Pearl Harbor Groundwater Aquifer.

Mitigation measures: *The increased demand for future BWS service areas is perhaps the most significant impact of this proposed project. It will need to be mitigated by ensuring that it falls within sustainable yields as allocated and approved by the State Commission on Water Resource Management. As a long range planning tool, the need for potable water for the project is identified on an engineering basis, but will also be subject to land use policies as well as the demand that will be generated by the economics of the market place. If there is indeed a demand for the projected sustainable yield, then alternative means for producing potable water in the quantities estimated will need to be examined, The use of non-potable water for Leeward agricultural uses will also come to bear on this competition for water.*

Impact: Land use changes along the project alignment may result in changes in runoff quantity and quality which could impact the groundwater lens. The absence of significant runoff most of the year due to the historical use of agricultural acreage for sugar cane production will result in reduced percolation into the aquifer. Replacement of the agricultural fields with urban residential land uses will increase the amount of hard surfaced acreage which will preclude the percolation process.

Mitigation measures: *Design drainage facilities that will provide both the safety during de-watering as well as capability for percolation into the aquifer.*

Impact: The project will create an increase in the need for public services, including police ,fire protection, parks, schools, and economic business centers for commercial activities.

***Mitigation measures:** As a long range planning tool, this proposed water system plan is in consonance with the balance of the utilities and infrastructure necessary for the anticipated and planned future growth in Ewa. The BWS planning project does not generate the need for public services ; it attempts to satisfy one of the needs. Requirements for the balance of City & County services will be determined as each development project is reviewed and evaluated by the City & County of Honolulu. Each project, public or private sector, will need to have available, the required public services.*

Impact: Development of the property will result in increased air quality impacts, particularly during construction.

***Mitigation measures:** An effective dust control plan will be implemented to ensure compliance with state air quality regulations. Dust control measures may include watering of active work areas, use of wind screens, keeping adjacent paved roads clean, and covering open-bodied trucks. Other dust control measures include limiting the area that can be disturbed at any given time and/or mulching or chemically stabilizing inactive areas that have been worked, Exhaust emissions can be mitigated by moving construction equipment and workers to and from the project site during off-peak traffic hours.*

1.5 Alternatives Considered

Alternatives that were considered for the water system focused primarily on various site alternatives for the source development *and alignments for the transmission main*. This is due to the fact that the DHCD was mandated to provide potable water for its planned projects. The inclusion of the BWS as a cooperating partner will enable the BWS to meet future demand for the service areas outlined in the land use plan. (See Figure 4).

Alternatives considered are as follows:

- (1) no build or no action alternative;
- (2) development of alternative means of potable quality water source development;
- (3) the proposed use. The applicant has concluded that the preferred alternative will provide an economically viable potable water delivery system that does not significantly affect the environment. It is also strongly felt that as a long range planning tool, this offsite water system will be constantly reviewed on the basis that future sustainable yield will need to be examined as water demand become a reality.

DOCUMENT CAPTURED AS RECEIVED

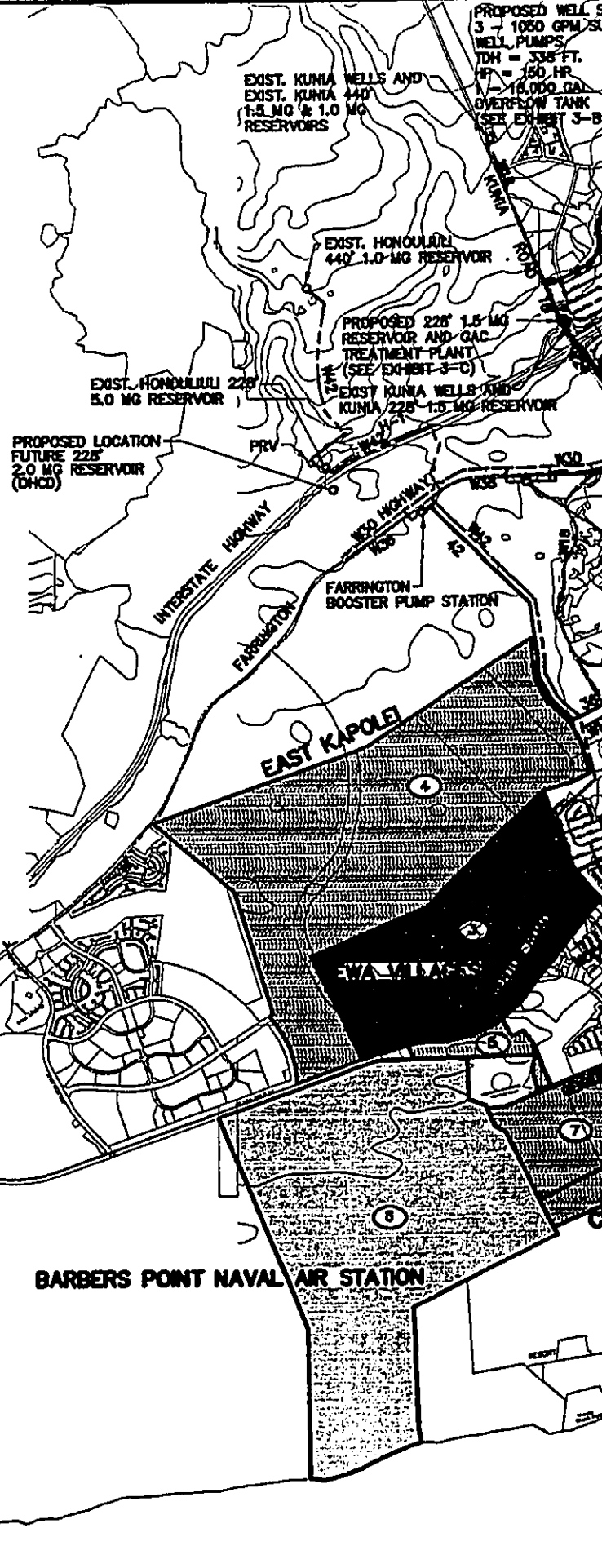
EWA DEVELOPMENTS PROJECTS — WATER SYSTEM MASTER PLAN POTABLE WATER SYSTEM — SUMMARY OF WATER DEMANDS DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT PROJECTS								
PARCEL NO.	PROJECT LOCATIONS		NO. OF UNITS	GAD	GPD/UNIT	AVE. ANNUAL DAY RATE (GPD)	MAXDAY RATE 1.5 X AVE. (GPD)	PEAK HR RATE 3.0 X AVE. (GPD)
	LAND USE	ACRES						
1	WEST LOCH PH. 1 TOTAL		883			298,500	444,750	689,500
2	WEST LOCH PH. 2 TOTAL		23	1,014		567,400	851,100	1,702,200
3	EWA VILLAGES TOTALS		79	2,242		1,370,000	2,055,000	4,110,000
DHCD PROJECT TOTALS			102	3,849		2,233,900	3,350,850	6,701,700
OTHER DEVELOPER'S PROJECTED FUTURE DEMANDS								
4	EAST KAPOLEI (1)		822	5,515		4,575,000	6,862,500	13,725,000
5	CAMPBELL ESTATE TMC 9-1-89:03 (2)		48			194,000	291,000	582,000
6	CAMPBELL ESTATE COMMERCIAL (2)		188			533,000	799,500	1,599,000
7	EWA BY GENTRY (3)			5,543		2,280,000	3,420,000	6,840,000
OTHER DEVELOPER'S PROJECT TOTALS			858	11,058		7,582,000	11,373,000	22,746,000
BWS PROJECTED FUTURE WATER DEMANDS								
8	BARBER'S PT. NAS TOTAL (4)		100	758		830,000	1,395,000	2,790,000
9	RESIDENTIAL TOTALS		20.5			51,250	76,875	153,750
10	RESIDENTIAL TOTALS		174			435,000	652,500	1,305,000
11	RESIDENTIAL TOTALS		8.6			18,500	24,750	49,500
12	RESIDENTIAL TOTALS		83			207,500	311,250	622,500
13	RESIDENTIAL TOTALS		3.7			9,250	13,875	27,750
14	RESIDENTIAL TOTALS		2.6			6,500	9,750	19,500
15	RESIDENTIAL TOTALS		2.7			6,750	10,125	20,250
16	RESIDENTIAL TOTALS		2.8			7,000	10,500	21,000
EWA PROJECTED DEMANDS (5)						1,087,000	1,600,500	3,201,000
BWS PROJECTION TOTAL			396	758		2,736,750	4,105,125	8,210,250
PROJECT TOTALS =			1,356	15,665		12,562,650	18,828,975	37,657,950

NOTES:

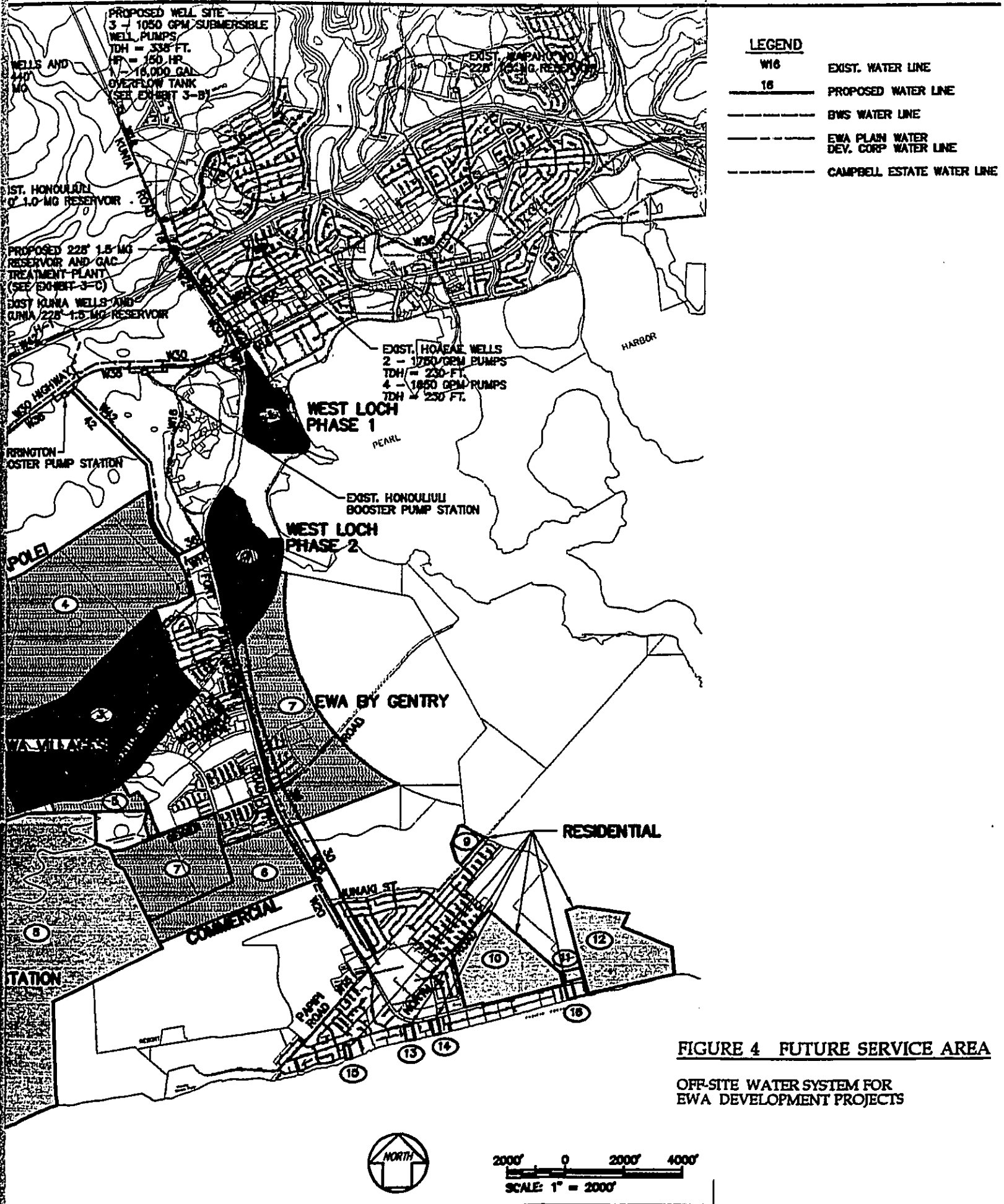
- (1) - FROM "POTABLE WATER MASTER PLAN FOR THE EAST KAPOLEI AREA" DATED OCT. 1994. REVISED WATER DEMANDS FROM HONOLULU BWS - 9/12/95
- (2) - SOURCE - HONOLULU BWS - 9/12/95
- (3) - PROJECTED DEMAND IS THE REMAINING BALANCE OF THE WATER ALLOCATION FOR EWA BY GENTRY PROJECTS (SOURCE HONOLULU BWS - 9/12/95)
- (4) - ASSUMED 1/3 OF THE PROJECTED 2,790 MGD FUTURE BARBERS POINT NAVAL AIR STATION DEMAND IS SUPPLIED THROUGH GEIGER ROAD. (SOURCE HONOLULU BWS - 9/12/95)
- (5) - THE PROJECTED DEMANDS WAS BASED ON A LINEAR REGRESSION OF PAST METERED CONSUMPTION DATA EXTRAPOLATED TO THE YEAR 2015. INCREASE SPREAD OVER THE YEARS AT ABOUT 0.08% MGD PER YEAR. (SOURCE HONOLULU BWS - 9/12/95)

SOURCE:

1. GIS BASE MAP FILE AND PROJECT LAND USES FROM DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT (DHCD), CITY & COUNTY OF HONOLULU.
2. EXIST. WATER DEMANDS, PROJECTED WATER DEMANDS AND LAND USES FROM BOARD OF WATER SUPPLY (BWS), CITY & COUNTY OF HONOLULU.



FILE: ESH94102
 SCALE: 1"=2000'
 BEG: 10/25/94
 REVISED: 09/19/95
 PM: RTY
 CDR: SMQ,SAI,RCQ
 REVISIONS: 09/19/95



Projects served by the Ewa Plains Water Development Corporation (EPWDC) are not included in the water requirement computations for this EIS. Previous reference to the EPWDC is on p.1-3, paragraph 2.

1.6 Unresolved Issues

The Draft EIS attempts to identify all potential substantive impacts and provide adequate mitigative measures for a proposed project. To the extent possible at this level of investigation, the specific impacts and their proposed mitigation are identified. However, because plans are only conceptual at this state of the permitting process, likewise their perceived impacts and proposed mitigation can only be conceptual. The more detailed analyses will occur in conjunction with the development of specific plans for the project and the submission of plans for agency review and approval. The applicant will obtain all necessary permits and approvals prior to construction. Unresolved issues will be studied and will be appropriately resolved prior to construction.

1.7 Compatibility with Land Use Plans and Policies

The project, which is in the State Land Use Agriculture and Urban Districts, is situated in the Ewa District, which is expected to experience major growth. The project's projected delivery of potable water will be to a planned area of 1376 acres comprising 15,665 residential and commercial units. These totals are derived from the land use plan prepared as a compilation of the proposed land uses for DHCD projects and the BWS projected future service areas for the existing Barbers Point Naval Air Station and various open space lands in the Ewa Beach area, and other future privately developed areas. This analysis was prepared by Engineers Surveyors Hawaii, Inc.

DHCD Projects

West Loch - Phase I

- a. 593 single family residences

West Loch, Phase II

- a. 728 single family residences
- b. 136 multi-family apartments
- c. 150 multi-family apartments for the elderly
- d. 3 acres of commercial space
- e. 20 acres of park space

Ewa Villages

- a. 2242 single family residences
- b. 400 multi-family apartments
- c. 17 acres of commercial space
- d. 33 acres of park space
- e. 13 acres for school site
- f. 6 acres for church site
- g. 10 acres for public facilities

BWS FUTURE SERVICE AREAS

Barbers Point Naval Air Station (BPNAS)

- a. Housing - 200 acres
- b. High School - 1800 students
- c. Elementary School - 475 students
- d. Park Space - 100 acres
- e. Existing golf course

Various locations in Ewa Beach

- a. 296 acres for Residential areas

Other Privately Developed Areas

- a. East Kapolei Schuler Homes - 5515 units
- b. Campbell Estate - 236 acres

1.8 Necessary Approvals and Permits Required

The following are government land use policy approvals and/or permits needed for the proposed project and the responsible government agency. Urban residential General Plan/ *Development Plan* amendments and specific zoning changes for private and public sector housing and commercial land uses, will be the responsibility of the applicant-developer and/or agency. The approvals listed below are for the *DHCD* offsite water system only. (*The DHCD via their retained engineering consultants, will prepare and process the appropriate DP PF map amendments for the PF map for the Central Oahu Development Plan Public Facilities map for the proposed well, reservoir, and 16" transmission main between the well sites and reservoir. Also necessary, will be amendments to the Ewa Development Plan Public Facilities map for the portion of the water transmission line from Farrington Highway to Fort Weaver Road.*)

Approval/Permit Needed
Development Plan Public Facilities Map

Responsible Agency
Planning Department

Well Construction Permit and
Pump Installation Permit
Water Allocation

State Commission on Water
Resource Management
State Commission on Water
Resource Management
City DPW

County Grading/Grubbing Permit

*Noise Variance

State Dept. of Health; City DPW

Coastal Zone Management
Certification (CZMA)

Office of State Planning, State of Hawaii

*National Pollutant Discharge
Elimination System (NPDES)

State Department of Health,
Clean Water Branch

* If required

1.9 Supply of non-potable water

The City has initiated a policy of conserving potable water to the best extent practicable. In this conservation effort, a condition of zoning will be the design and installation of dual water systems for irrigation of golf courses and landscaping. Dual systems currently serve or will be installed in the City of Kapolei, Ko Olina Resort, Campbell Industrial Park, Kapolei Business Park, the Villages of Kapolei, West Loch, Ewa By Gentry, Ewa Marina, and the Hawaii Prince and Puuloa Golf Courses.

Proposed sources of non-potable irrigation use water include:

1. Caprock aquifer - Developers have obtained year to year permits for withdrawing non-potable caprock water for irrigation purposes. However, the demand exceeds the present sustainable yield. The Commission on Water Resources Management (CWRM) indicated a demand for 26 MGD and a sustainable yield of 16 MGD. To balance this deficit, the CWRM has identified wastewater effluent reclamation as a promising alternative.

2. Wastewater effluent reclamation - A pilot program for effluent re-use is in the planning stages and it is anticipated that for large scale direct irrigation of golf courses and recharge via seepage trenches, spreading basins, and injection wells, this alternative is promising. Only large scale projects i.e. Kapolei and Ko Olina will be able to absorb the high costs, limited source capacity, and marginal water quality recycled effluent will provide.

3. Projects that have developed planning and construction design drawings will need to determine their abilities to

participate on a cost-effective basis. Project demand for large scale irrigation will be a critical cost factor for participation. *

****chapter 7, Section 7.1, Utilities and Drainage. Ewa Development Plan Report City and County of Honolulu, Planning Department June, 1995 (Draft)***

2.0 STATEMENT OF PURPOSE AND NEED FOR ACTION

This Final Environmental Impact Statement is prepared under the guidelines of Chapter 343, Hawaii Revised Statutes and Title 11, Chapter 200, Hawaii Administrative Rules. Chapter 343 review is required for any proposed projects involving State or County lands and/or funds.

The proposed Offsite Water System , Ewa Development Projects is for the Department of Housing & Community Development (DHCD) and the Board of Water Supply (BWS) . The DHCD will develop potable water facilities for its' planned projects and the BWS will provide technical support assistance so that future service areas can also be included in long range future planning for potable water service.

DHCD projects are identified and listed on Figure 4 together with the BWS future service areas and other future privately developed areas. BWS projections cover the long range planning for Barbers Point Naval Air Station and development areas in Ewa Beach to the year 2015. The planning program is to insure that potable water sources can be developed and built in a timely manner. The BWS will be conducting a continuing review of land use policy changes that will be employed so that as the Ewa Plains are urbanized, there is the ability for the BWS to deliver potable water in the required amounts.

3.0 PROJECT DESCRIPTION FOR DHCD PLANNED PROJECTS AT WEST LOCH, PH. I & II AND EWA VILLAGES

3.1 Location

The project is located in the Ewa District on three separate parcels. The Well Sites are planned to be built in a City & County park site on Heahea Street in the Royal Kunia Subdivision, TMK: 9-4-137: 138. Transmission to the reservoir site will be within the Royal Kunia and Village park subdivisions along existing City streets.

A storage reservoir site is planned on open State land north of the existing Kunia 228. 0' 1.5 Million Gallon (MG) reservoir site along Kunia Road. TMK: 9-4-02: 25

A Granular Activated Carbon (GAC) water treatment plant is under consideration for design should the water quality test results dictate a need for the treatment plant. TMK: 9-4-02: 25

The Transmission Main (Reservoir to Service Areas) will be placed from the reservoir site from Farrington Highway (near the Farrington Booster Pump Station) and traverse along a plantation road, thence along Mango Tree Road, along Fort Weaver Road, ending at Papipi Road. A project vicinity and location map is provided as Figure 1.

3.2 Statement of objectives

The major objective of the Offsite Water System project is to plan, design, and develop the required potable water delivery capability for DHCD planned projects and BWS future service area requirements.

3.3 General description of the action's technical, economic, social, and environmental characteristics

a. Technical characteristics

The proposed Offsite Water System would consist of: (1) a well system that would consist of three (3) 1050 gallons per minute (gpm) submersible well pumps to be contained in a well pump station. A transmission main would convey the product through the Royal Kunia and Village Park Subdivisions to the reservoir site; (2) the design and construction of a new storage reservoir at the 228' Kunia Reservoir site, and (3) the Transmission Main (Reservoir to Service Areas) will be placed

from the reservoir site on Farrington Highway to the principal Fort Weaver Road transmission system, ending at Papipi Road.

The proposed project will require less than 5 acres in total acreage, with the Well site consisting of 0.5 acres; the Reservoir site consisting of 1.5 acres; and the Transmission/Distribution lines consisting of 2.5 acres.

Existing System: The existing water supply sources, storage and distribution system nearby are inadequate to serve the proposed projects of DHCD and the BWS future service areas and other future privately developed areas.

Proposed System:

The proposed project will augment the existing system and provide potable water to planned DHCD projects and BWS future service areas and other future privately developed areas. As described in section 3.3. (a), the proposed system will involve the design and construction of a total offsite water system. A well pump station, a storage reservoir, and a distribution system will be provided to meet current and future water demand. Chapter 7 identifies the potential impacts and possible mitigative measures that may be taken to resolve the potential impacts.

Consumption Guidelines :

(The following guidelines have been established by the BWS as the applicable criteria in determining minimum requirements for the potable water system.)

The total average daily demand for the following categories is estimated as follows:

- Single Family Residential - 500 gallons/unit
- Multi-Family Low Rise - 400 gallons/unit
- Multi-Family - 300 gallons/unit
- Commercial - 3000 gallons/acre
- Industrial - 4000 gallons/acre
- Park - 4000 gallons/acre
- School - 4000 gallons/acre

Demand Factors :

- Maximum Daily Demand - 1.5 x Average Day
- Peak Hour Demand - 3.0 x Average Day

Fire Flow Requirement :

Single Family = 1000 gpm for 1 hour

PUD Townhouse/Low Rise = 1500 gpm for 1 hour

Schools/Neighborhood Business = 2000 gpm for 2 hours

Light Industry = 4000 gpm for 3 hours

Reservoir Capacity :

The reservoir capacity must meet Maximum Day Consumption.

The reservoir must be full at the beginning of the 24 hour period with no source input to the reservoir.

Meet Maximum Day rate plus fire flow for duration of fire.

Reservoir 3/4 full at start of fire, with credit for incoming flow from pumps, one maximum size pump out of service.

Minimum reservoir size shall be 100,000 gallons.

Where there are two or more reservoirs serving the same system, the design shall be made of the combined protection provided by all facilities available.

Pump Capacity :

The pump capacity must meet Maximum Day demand for an operating time of 16 hours simultaneously with fire flow required independent of the reservoir. The standby unit may be used to determine the total flow required.

Maximum Day demand during duration of fire plus fire demand less 3/4 of reservoir storage. (The largest pumping unit shall be considered out of service.)

Meet maximum day demand with an operating time of 16 hours. The largest pumping unit shall be considered out of service.

b. Socio-economic characteristics

1) Population and housing

This planning tool is to examine the long term future service area needs for the BWS. The DHCD has planned residential projects that require delivery of potable water. These are government public sector housing developments which are planned and approved. Future growth to the year 2015 is the responsibility of the BWS which is concerned over the potential urbanization of the Barbers Point Naval Air Station, as well as already developed and to be developed urban sites in Ewa Beach. More detailed data are provided on pages 5-1, 2.

2) Economic

Estimated costs for the total offsite water system is approximately \$19.9 million dollars stated in 1994 dollars. The cost estimate is a preliminary estimate and subject to change upon completion of design plans. Cost sharing of the development costs will be done on a pro-rata basis, with the DHCD paying for its' planned residential project consumption, and the BWS future service area customers paying their fair share.

c. Environmental characteristics

The planned improvements are scheduled to be built in Urban/Agricultural areas that have been highly disturbed by human activity. The single unimproved land parcel not cleared and graded is the connection from the reservoir site to the distribution lines. This is on fallowed cane lands that were operated by Oahu Sugar Company, but have since been abandoned.

The offsite water system is located at three locations, with three differing elevations. The well site is at a mean sea level elevation of 318 feet; the proposed reservoir site is at 228 feet; and the distribution main from the reservoir to the Fort Weaver Road distribution line is at 120 feet. The topography ranges from 16 to 9 percent in a mauka-makai direction.

The existing physical environment of the project sites are in highly disturbed urban-residential, agricultural, and roadway locations. The proposed improvements will be located on existing government owned parcels, with the exception of the connection from the reservoir to Fort Weaver Road. This connection will consist of a 42-inch pipeline that will traverse along a plantation road, reducing to a 36-inch pipeline along Mango Tree Road, and finally along Fort Weaver Road. All parcels are roadway right-of-ways, abandoned cane fields, or within urban residential City & County Parks.

There will be temporary impacts to the ambient air and noise standards due to the project construction. Long term impacts from increased traffic, drainage, and other construction related activities are not anticipated to be significant. The site specific

nature of the proposed improvements added to the relatively small amounts of land to be affected indicate that significant adverse impacts will not take place. These impacts are considered typical impacts that result from the construction development process. Compliance with the applicable building code standards of the State Department of Health on Community Noise Regulations, the Clean Water Act where appropriate, and the City & County Grading Ordinance for clearing and grubbing not more than five acres will mitigate the temporary construction related impacts.

A more detailed discussion of the environmental characteristics, including anticipated impacts and proposed mitigation measures, is included in Section 7.0 .

3.4 Disclosure on the use of public funds or lands for the action

Funding for this offsite water system will be provided by the City & County of Honolulu Department of Housing & Community Development, with pro-rata sharing with the Board of Water Supply. Private developments will be assessed for connection fees on a pre-determined formula by the BWS. The public lands to be used are for the most part existing road or street rights-of-way, and will not require acquisition. A Campbell Estate parcel will also require an easement for the connection from the reservoir site to the Transmission Main connecting to the Fort Weaver Road transmission lines.

3.5 Phasing and timing of the action

The Offsite Water System is scheduled to commence operation in the fourth quarter of 1996, with the Well drilling to be completed in October, 1995 and the Pump Station completed at the end of December, 1996. The storage reservoir will commence operation in December 1997, and the Transmission Main connecting the Well site to the Reservoir will be started in December, 1996. Initial construction will provide the committed water demand for the DHCD's planned projects. The balance of the system's construction will hinge on the change in land use designations from Agriculture to Urban for the Ewa lands.

4.0 DESCRIPTION OF ANY KNOWN ALTERNATIVES TO THE PROJECT

Alternatives that were considered for the subject site are shown in the following sections. In terms of alternatives available to the Board of Water Supply and the Department of Housing & Community Development, the options were limited due to the nature of the proposed improvements.

No-Build or No Action Alternative

Leaving the various properties in their present state would retain the existing character.

However, the failure to provide potable water would delay occupancy of the developments as a commitment and obligation. Further, no jobs would be created; no housing opportunities would be created; and there would be no enhancement of the County's real property tax base.

Residential - Commercial Alternative

The fallowed cane lands are the only potential land area that could be developed for urban uses. It is not appropriately zoned and would not be considered a prime parcel for development.

Proposed Use

The proposed use will fulfill the intended plan to provide potable water for planned DHCD projects as well as serve future BWS service areas. The BWS will be reviewing the economic climate and the land use policy directives that ensue from 1995 to the year 2015. This review process will enable the BWS to plan improvements as dictated by land use policy.

5.0 DESCRIPTION OF THE ENVIRONMENTAL SETTING FOR OFFSITE WATER SYSTEM - DHCD PLANNED PROJECTS AT WEST LOCH, PH. I & II, AND EWA VILLAGES.

5.1 Description of the environment in the vicinity of the action as it exists before the commencement of the action from both a local and regional perspective

The Offsite Water System for Ewa Development Projects is located in three separate sites. The total project consists of the following items:

1. Well Source Pump Station - Located in Waipahu in the Royal Kunia Subdivision on Heahea Street, this project is situated in a City & County Park and will provide a well pump station with improvements. Transmission lines to the reservoir site will be through the Royal Kunia and VillagePark subdivisions. (See Figure 5, Well Pump Station Site Plan)

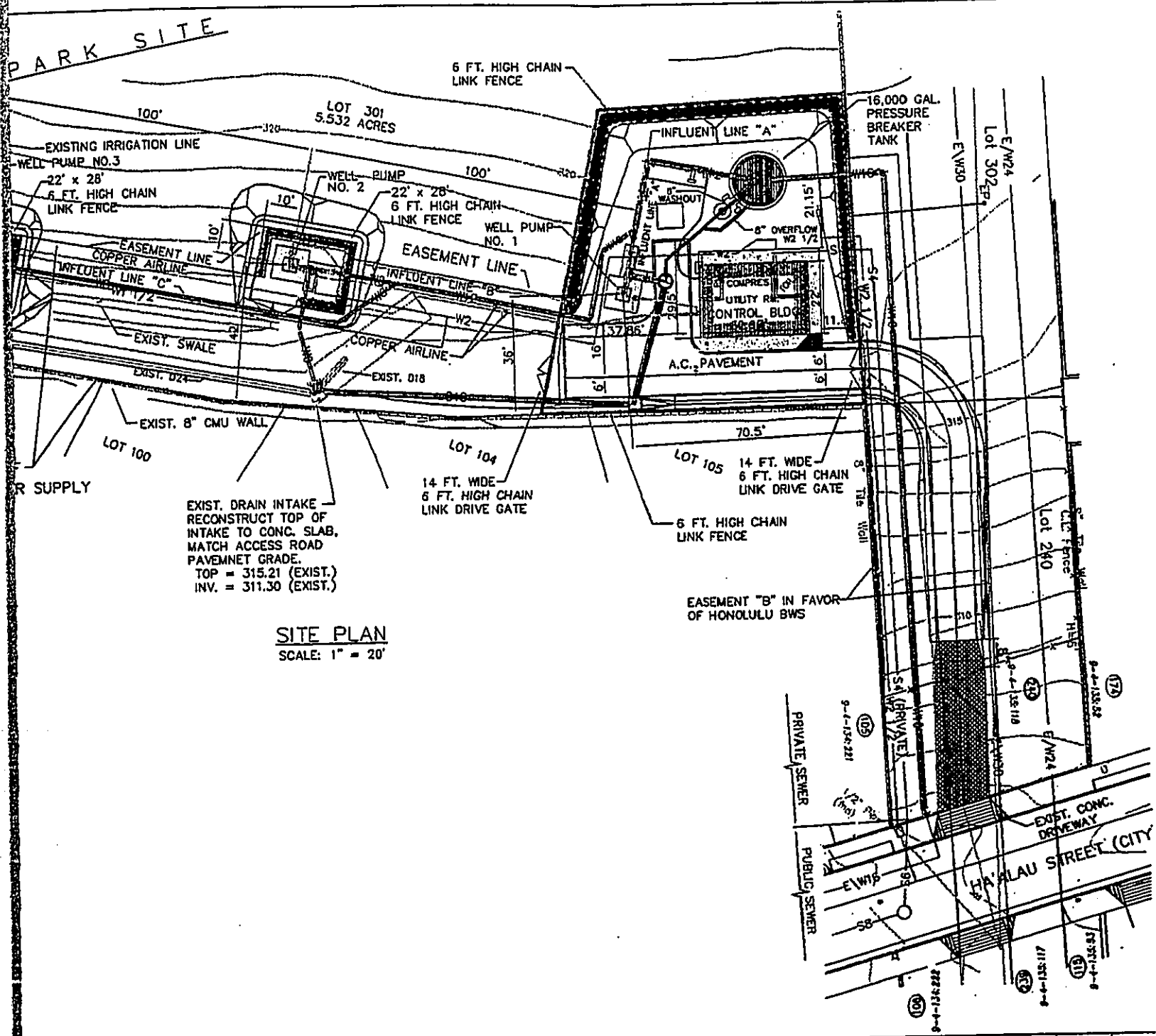
2. 228.0 ' 1.5 MG Reservoir Site - is to be located north of the existing Kunia 228.0 ' 1.5 MG reservoir site along Kunia Road, near the Interstate H-1 Freeway. The proposed site will be developed on adjacent State lands identified as Lot #25. The existing Kunia 228.0 1.5 MG reservoir is located on Lot # 14 which is owned by the City & County of Honolulu. Included in this second increment of the System is the Granular Activated Carbon (GAC) plant. (Figure 6) identifies the existing facility and the proposed improvements.

3. Transmission Mains - From Farrington Highway down towards Ewa Beach, the distribution system will consist of transmission mains and distribution lines that will take water from the storage reservoir to Fort Weaver Road, and then to Papipi Road. The distribution lines will be in existing Road Rights-of-Way , and also through a portion of fallowed cane lands owned by the Campbell Estate. There are no adverse environmental impacts that will result from the distribution phase.

5.2 Rare or unique environmental resources (including natural or man-made resources of historic, archaeological or aesthetic significance)

None.

5.3 Identification, where appropriate, of population and growth characteristics of the affected area and any population and growth assumptions.



EXIST. DRAIN INTAKE
 RECONSTRUCT TOP OF
 INTAKE TO CONC. SLAB,
 MATCH ACCESS ROAD
 PAVEMENT GRADE.
 TOP = 315.21 (EXIST.)
 INV. = 311.30 (EXIST.)

SITE PLAN
 SCALE: 1" = 20'



AKINAKA & ASSOCIATES, LTD.
 CONSULTING ENGINEERS

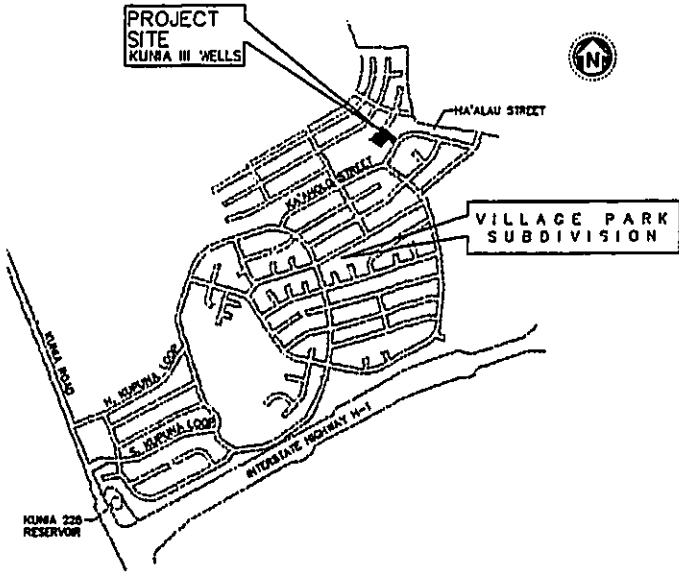
EWA DEVELOPMENT PROJECTS
 OFFSITE WATER SYSTEM, PHASE II
 KUNIA II WELLS SITE AND
 CONTROL BUILDING

**FIGURE 5 WELL PUMP
 STATION SITE PLAN**

OFF-SITE WATER SYSTEM FOR
 EWA DEVELOPMENT PROJECTS

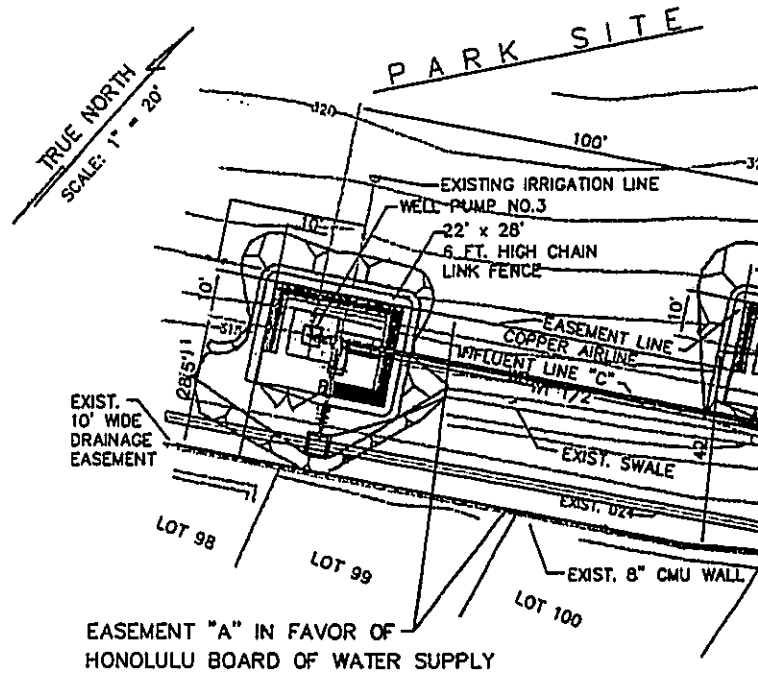
REVISION DATE	DESCRIPTION	DATE BY	APPROVED
SHEET _____ OF _____ SHEETS			

EXHIBIT 3-B



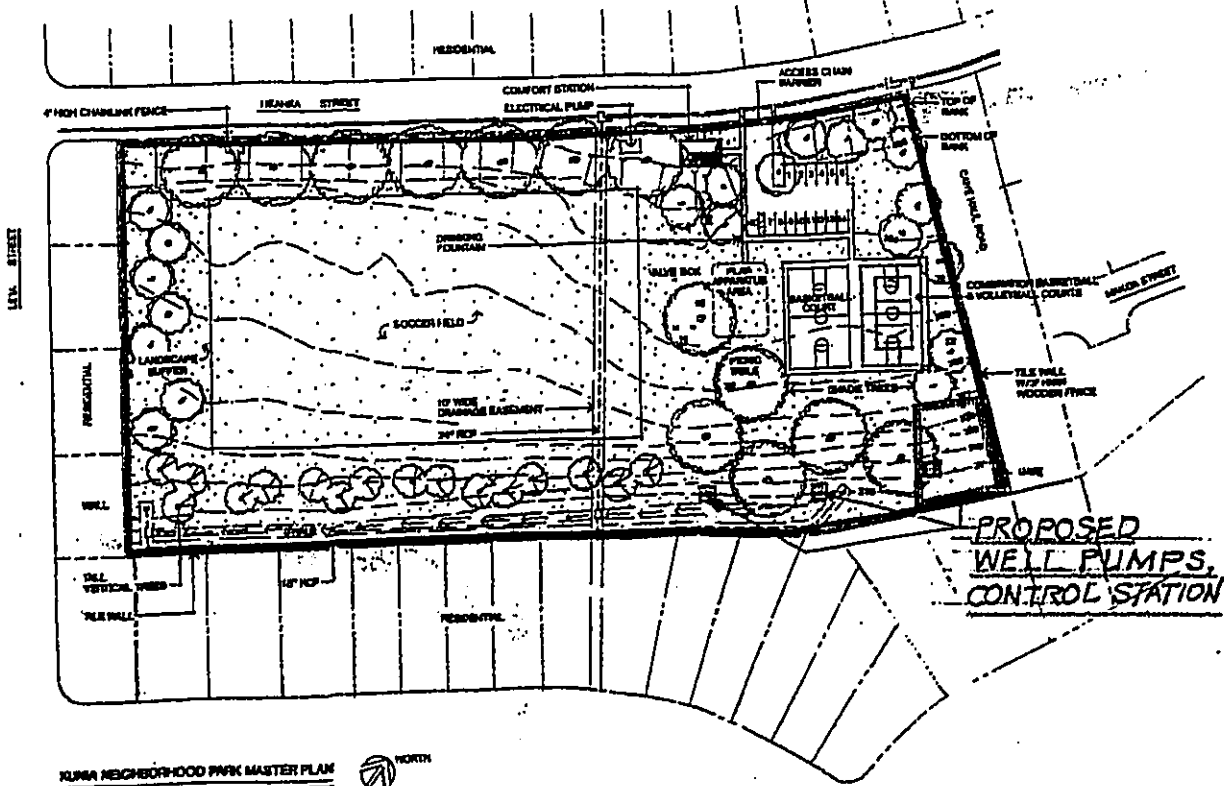
LOCATION MAP
NOT TO SCALE

TAX MAP KEY: 9-4-137:138



EASEMENT "A" IN FAVOR OF
HONOLULU BOARD OF WATER SUPPLY

EXIST. DRAIN IN
RECONSTRUCT
INTAKE TO CON
MATCH ACCESS
PAVEMNET GRA
TOP = 315.21
INV. = 311.30



**PROPOSED
WELL PUMPS,
CONTROL STATION**

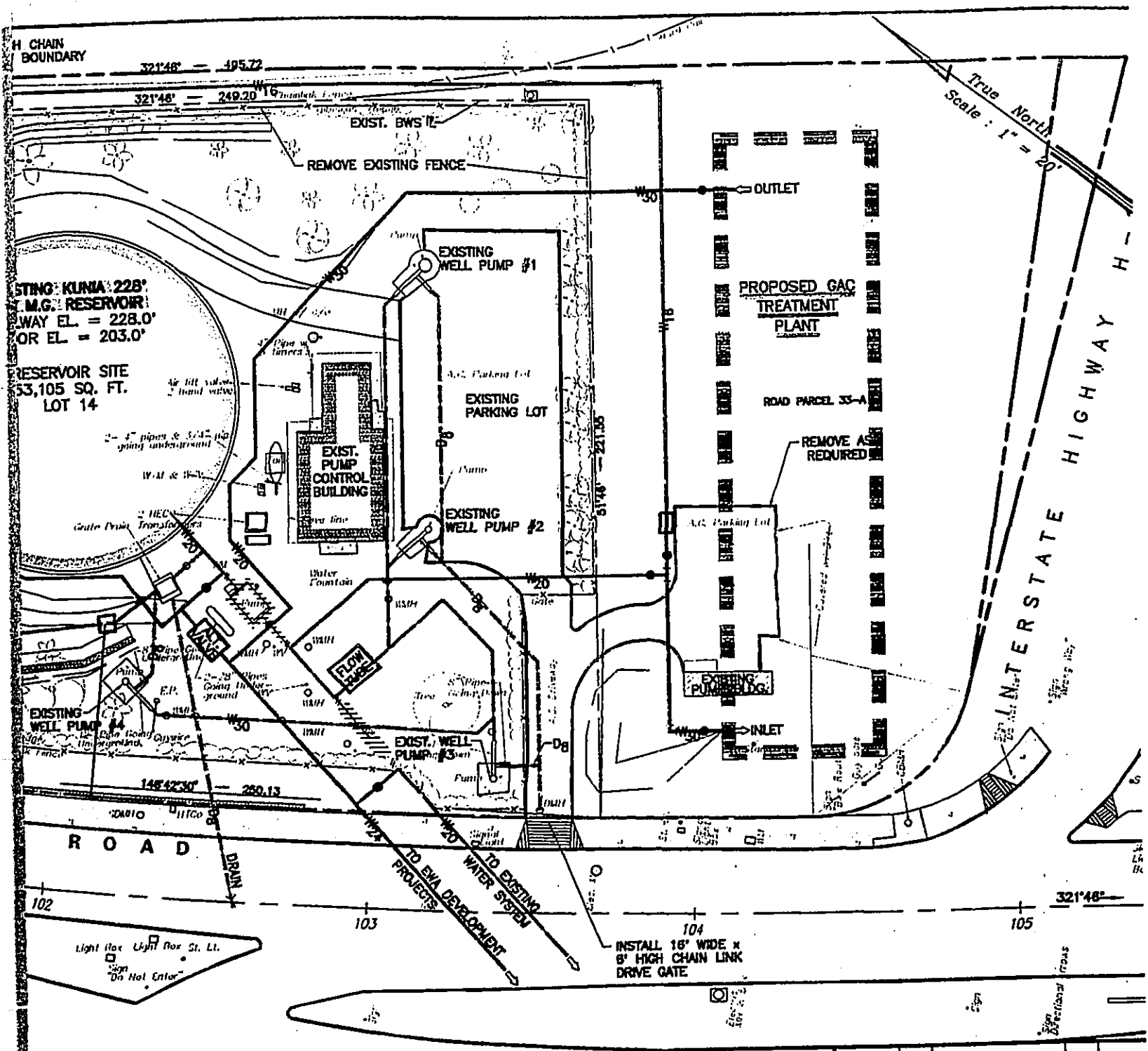
KUHUA NEIGHBORHOOD PARK MASTER PLAN
SCALE: 1" = 80' TOTAL 1/4" = 40' SURFACES

PARK SITE PLAN
SCALE: 1" = 80'

CITY
OPR: RCO
REVISED: 09/11/95

SITE
SCALE: 1" = 20'
BEG: 09/11/95

DOCUMENT CAPTURED AS RECEIVED



STING KUNA 228' M.G. RESERVOIR
WAY EL. = 228.0'
OR EL. = 203.0'

RESERVOIR SITE
53,105 SQ. FT.
LOT 14

ENGINEER: JT					
DRAFTSMAN: PM					
CHECKED BY: JT					
	REVISION	DATE	BRIEF	BY	APPROV
	ENGINEERS SURVEYORS HAWAII, INC.				
	ENGINEERS - SURVEYORS - PLANNERS				
	1020 ALMA STREET, BUILDING 4, SUITE 1, HONOLULU, HAWAII 96813 PHONE: 801-8116 FAX: 802-2003				
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT CITY AND COUNTY OF HONOLULU HONOLULU, HAWAII					
EWA DEVELOPMENT PROJECTS OFF-SITE WATER SYSTEM, PHASE III 1.5 M.G. KUNA 228' RESERVOIR					
<p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.</p> <p>JOHN L. TAMASE DATE</p>					
<p>FIGURE 6 RESERVOIR SITE PLA</p> <p>OFF-SITE WATER SYSTEM FOR EWA DEVELOPMENT PROJECTS</p>					
<p>SHEET OF SHEETS</p> <p style="text-align: right;">EXHIBIT 3-C</p>					

EarthPlan conducted a Social Impact Assessment (See Exhibit A) September, 1995, and the following excerpts are from this work.

- The study includes two Neighborhood Board areas in which the proposed project is located. The pump improvements i.e. Source development facilities, are located in the Waipahu Neighborhood Board area, in the communities of Village Park and Royal Kunia. The transmission line system is located within the Ewa/Ewa Beach Neighborhood Board area. These two population centers have and are still experiencing major growth. The Waipahu Board area grew in population from a 1980 figure of 34,000 to a 1990 figure of 51,000. The Ewa/Ewa Beach also experienced growth albeit at a less dramatic increase. Their figures went from 35,600 in 1980 to 43,000 in 1990. The study further describes the population variables of Median Age, Ethnicity, and Labor Force Population.
 - Also of particular interest was the Housing and Household Characteristics. The two study areas revealed a higher than average home ownership percentage than the islandwide figures. Oahu islandwide has a 49% home ownership and the Ewa area numbers indicated a percentage of 52%. Waipahu numbers were even higher at 60% and Village Park/Royal Kunia led the study areas at 94%. The Ewa and Waipahu areas also indicated a higher than islandwide average of 45% single family detached homes. Ewa's percentage was at 59% and Waipahu was at 57%.
 - On the average, household sizes were also larger in the two study areas. In 1990, Oahu islandwide had a household population of 3.02 persons per household; Ewa had an average of 3.65 and Waipahu had an average of 3.68 persons per household.
 - Median household incomes within the Study Area differed significantly. While the Ewa median household income (\$40,831) was similar to the Oahu median of \$40,581, the Waipahu median income was high at \$48,482, and in Village Park/Royal Kunia, the median household income was significantly higher at \$56,711.
- 5.4 Determination of secondary population and growth impacts resulting from the proposed action and its alternatives.**

The directed growth policy established by the City & County of Honolulu's General Plan policies of 1992 wherein the long range objectives and broad policy statements directed towards improving the the general welfare and prosperity of the people of Oahu reflect the long range social, economic, environmental and design objective presented in the various strategies to achieve these goals. These policies are described in more specific detail in the next section.

6.0 STATEMENT OF THE RELATIONSHIP OF THE PROPOSED ACTION * TO LAND USE PLANS, POLICIES, AND CONTROLS FOR THE AFFECTED AREA

*** OFFSITE WATER SYSTEM FOR WEST LOCH, PHASE I & II, AND EWA VILLAGES (ALL REFERENCES IN THIS SECTION ARE SITE SPECIFIC FOR THE OFFSITE WATER SYSTEM)**

6.1 State Land Use Law

The *subject site* is designated Urban and Agriculture by the State Land Use Commission. Under that designation, land use jurisdiction rests with the County and no further action from the State is required.

6.2 Hawaii State Plan

The Hawaii State Plan (Chapter 226, Hawaii Revised Statutes) establishes goals, objectives, and policies to serve as long-range guidelines for the growth and development of the state. Part I of the State Plan lists three goals toward which government must strive. These goals include a strong, viable economy, a desired physical environment, and physical, social and economic well-being. Part II addresses administrative structure and implementation of the State Plan. This is not relevant to the proposed project. Part III of the plan sets priority guidelines to address areas of concern in the state. The five major areas of statewide concern that merit concern are: economic development, population growth and land resource management, affordable housing, crime and criminal justice, and education.

The proposed *project site* will comply with all of the goals expressed in Part I of the State Plan. Development of the Offsite Water System will provide a vital segment of the necessary utilities and infrastructural requirements necessary for sound economic growth while maintaining a very high quality environment. Given the semi-rural location of the project and the planned commitments to Housing, the project will result in a significant increase of employment and resulting tax revenues to the state.

The proposed *project site* will increase economic development with a minimal impact to the environment and natural resources. Crime and the criminal justice system will not be significantly affected, either positively or negatively, by the proposed project. School enrollment will not increase significantly as a result of the proposed project since previous land use policy decisions for the amendments to the Land Use District Boundaries, the County General Plan, and

County Zoning maps have already determined that urban residential development will take place. The proposed improvements will, however, increase the state's tax base and tax revenues and this will indirectly benefit public schools.

6.3 City & County of Honolulu General Plan

The City & County General Plan provides for the long-range comprehensive development of the City & County of Honolulu. It provides direction for balanced growth in the County. The Plan contains a series of land use maps that provide direction as to policies on economic growth, population limits, and as well as placement of utilities, governmental public works facilities, and supportive infrastructure.

a. Development Plan Land Use Map

The Offsite Water System is the planning fulfillment of planned and approved residential projects for DHCD *at West Loch, Phase I & II and Ewa Villages*. By their participation, it will also provide the BWS the opportunity to prepare long range planning for future service areas in Ewa. These would include East Kapolei, lands owned by the Estate of James Campbell, and the Barbers Point Naval Air Station. (See Figure 7).

b. Economic Element

The Offsite Water System would be complementary to the economic goals and policies of the General Plan. It would provide residents with necessary utilities for urban residential land uses.

c. Energy Element

The project will not require extraordinary amounts of energy; only that amount required to keep the pumps and transmission mains functional.

d. Environmental Quality

Physical environmental impacts will consist primarily of temporary construction related impacts, i.e. fugitive dust and carbon monoxide from vehicular congestion due to queuing; and

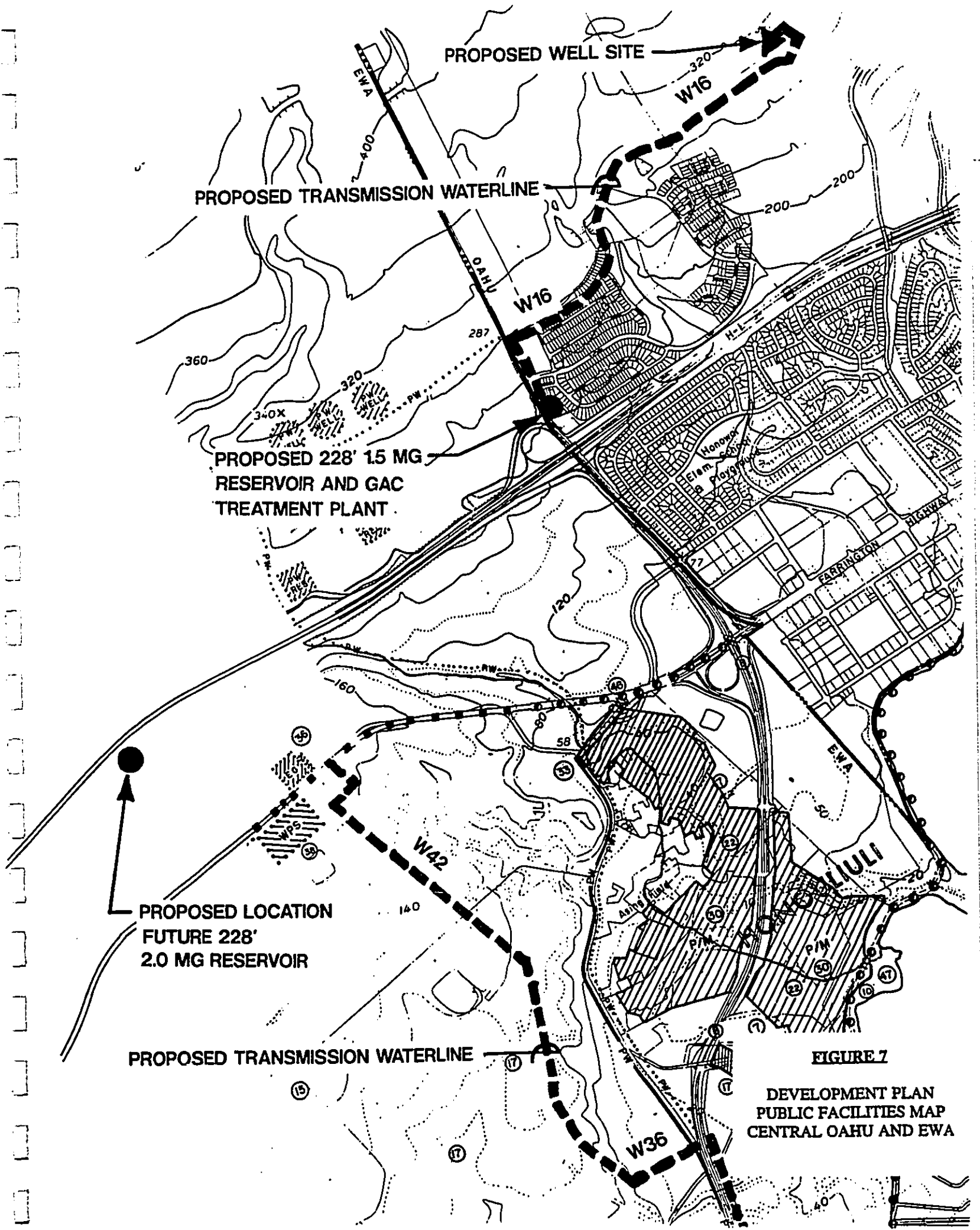


FIGURE 7
DEVELOPMENT PLAN
PUBLIC FACILITIES MAP
CENTRAL OAHU AND EWA

ambient noise from construction vehicles. Surface runoff from excavation work will not present a major impact due to the size and scope of the specific tasks. Trenching will not be extensive at any given time with surface sheet flow being limited to the exposed areas.

e. Flood Control and Drainage Element

The site is not designated as being a floodway on the US Corps of Engineers Flood Insurance Rate Map. Zone rating is "D" outside the 500 year flood zone area.

f. Historic Sites Element

It is highly unlikely that historic sites will be uncovered during the construction phase. This is due to the nature of the alignment which reflects the area disturbed by Man in the Fort Weaver Road *highway rights-of-way* and also in the fallowed cane fields. Highway construction and the cultivation of sugar cane preclude the presence of archaeological or historic sites. In the event that sites or *inadvertent uncovering of burials occur during the excavation of the alignment, all work is to cease and the State Historic Preservation Division advised.* A determination will need to be made on the age of the uncovered burial. Jurisdiction for either the SHPO for burials over 50 years old, and the State Department of Health for burials under 50 years old will be examined and determined.

g. Housing Element

The planned project will deliver potable water to the existing West Loch Estates, Fairways subdivision, and the Ewa Villages Revitalization project currently under construction.

h. Natural Beauty Element

The project will take advantage of the existing topography and terrain features. This is due to the nature of the water transmission lines which utilize gravity flow to a great extent. All lines will be below grade, and the only significant structure *will be the additional 1.5 MG storage reservoir* at the Kunia Road intersection with Interstate H-1.

i. Natural Resources and Shoreline

There will be no impacts to the established shoreline.

j. Public Facilities Element

The project will not impact the Public Facilities of the Ewa District since it is of itself, a public facility. *Amendments to the PF map will be necessary to include the portions of the System not designated by symbol.*

k. Public Utilities Element

The project will require electrical and telephone services from existing utility companies.

l. Recreation Element

The project will not require recreational amenities.

m. Transportation Element

Since the major part of the alignment is in existing Highway rights-of-way, the only additional improvements anticipated will be a paved service road at the alignment going through the sugar cane field on Campbell Estate lands.

n. Land Use Element

The land use relationship for plans and policies is discussed on Chapter 6.3 An amendment to the Development Plan Public Facilities Map will need to be processed.

6.4 Zoning

The present zoning of site is Agriculture, and the proposed facility will not require a zoning amendment.

6.5 Special Management Area (SMA)

The site is located outside the County SMA boundary, as provided under Chapter 205A, Hawaii Revised Statutes.

6.6 Land Disturbance Permits

Prior to any land disturbance activity, other permits would be required. These permits are processed administratively by either the State or County agencies. Plans for these permits will be prepared subsequent to action on the zoning application. These permits and their respective approving agency, include:

- 1) Grading/Grubbing - Department of Public Works
- 2) National Pollutant Discharge Elimination System (NPDES) Permit - State Department of Health
- 3) Disinterment Permit (If applicable) - State Department of Health and State Department of Land and Natural Resources
- 4) Building Permit - Building Department
- 5) Road Access Permit - State Department of Transportation

7.0 STATEMENT OF THE PROBABLE IMPACT OF THE PROPOSED ACTION* ON THE ENVIRONMENT (WATER SYSTEM AT WEST LOCH, PHASE I & II, AND EWA VILLAGES) *

The following is a summary of the probable direct and indirect effects of the proposed action on the environment, including a summary of current conditions, as well as proposed mitigation measures.

7.1 Socio-economic characteristics

a. Population and Housing

1. Consistency with Public Policies and Plans

The development of the Ewa region for Urban purposes is clearly stated in the City & County of Honolulu plans for a secondary urban center. It is the intent of the City to develop a second city, with facilities for commerce, finance, government services, and industrial activities. The City General Plan encourages development within the secondary urban center at Kapolei and the Ewa and the Central Oahu urban fringe areas to meet housing needs not readily available in the Primary Urban Center. By the year 2010, population guidelines estimate that the Ewa area could house between 12 and 13.2 percent of the islandwide population, with Central Oahu capturing between 14.9 and 16.5 percent. (Table 3, page 10 EarthPlan Report, Population Distribution Guidelines by Development Plan area.)

2. Impacts on Neighboring Communities

The proposed action, taken in the three development phases should not adversely impact the neighboring communities. The urban residential aspects of the source wells and the pump station facility are located within a City Park and have been designed to be low profile and unobtrusive. The second phase will be to install transmission lines to the proposed storage reservoir at the Kunia Interchange, adjacent to an existing storage reservoir. At this point, the third and remaining phase will be to install the transmission lines on existing Rights-of-Way along Fort Weaver Road. Along this alignment, connections will be made to the various planned City residential developments.

3. Potential Availability of Windward Agricultural Water

Discussion on the potential availability of windward non-potable quality water for water source development in the Leeward Districts has been considered very premature by the State Department of Agriculture (SDOA). In their EISPN comments dated August 10, 1995, the SDOA made note of its role in seeking to reserve Waiahole Ditch irrigation water for agricultural use throughout Central Oahu and part of Windward Oahu. This DEIS does not seek to take a selective position of where and to whom the Waiahole Ditch water should go. Rather, it will be the position of the EIS to advocate the BWS policy position of reducing the pumping of potable quality water from the Pearl Harbor Groundwater Aquifer for agricultural use. This position is to permit approved urban-residential planned projects to proceed under the auspices of the DHCD and the BWS. The distinction between the roles played by the applicant partners, DHCD and BWS, and the Commission on Water Resources Management (CWRM) are clear; water availability for Leeward water users is established and based on current standards for potable and non-potable uses. Source of the product and allocations should not be a factor or consideration for the purposes of this DEIS. This is best left to the State agencies, i.e. CWRM and SDOA. As a long range planning advice, this DEIS provides future potential demand for potable water as urbanization is realized by the planning year of 2015.

The State Commission on Water Resource Management is currently conducting hearings on whether Windward water will be provided to Leeward Oahu users. This FEIS is subject to the same rules and decisions of the CWRM for potable quality water that can be used for urban-residential consumption. As customers of the City BWS, the DHCD and other residential developers will be looking to the BWS for available allocations of potable quality water. They will also be subject to the rules, guidelines, and requirements for the development in the Central and Leeward Oahu districts of irrigation quality (non-potable) water to reduce further the current dependence on potable quality water for irrigation purposes. Section 1 (page 1-9), contains discussion on the current planning direction that the dual water system requirements are taking. Availability of non-potable quality irrigation water is being evaluated from sources i.e. brackish lens aquifers; recycled sewage effluent, and other sources .

In this vein, the FEIS is limiting its purpose and direction to the potable requirements of the planned DHCD projects at West Loch Phase I & II and Ewa Villages. In turn, the BWS is seeking early disclosure planning for future service areas to the year 2015. Beyond these two objectives, the FEIS will maintain an arms length distance from the discussions, leaving the source and allocation issues to the CWRM.

Impact: Construction related impacts of short term will be expected for the planned DHCD projects, but these will not be of adverse long-term duration.

Mitigation measures: None required at this time beyond the construction related traffic impacts, i.e. noise, dust, and possible surface runoff.

b. Economic

The overall development costs for the proposed DHCD projects are unknown at this time, although it is estimated that development of the three phase construction projects are expected to cost approximately \$19,900,000.

Impact: Construction of the proposed project will have the positive impact of providing an economic benefit to the state and county, by creating employment and additional tax revenues. Construction employment will also benefit from this project with infrastructure and residential units providing job related employment, as well as other service related jobs in such areas as planning, development, administration, marketing, and sales of future urban residential development. Significant increases in the tax base of the project area can also be expected.

Mitigation measure: No mitigation measures are required at this time.

7.2 Public Facilities

a. Transportation

The Fort Weaver Road Highway is one of the major roadway arterials serving this area. It provides access between the Interstate H-1 and Ewa Beach. It is a four lane State Highway (FAS 760) with a posted speed limit of 55 mph. Due to the high

speeds on the highway, existing road rights-of-way will need to be clearly marked during construction times.

Impact: Temporary delays will be experienced during the construction phases.

Mitigation: The construction will need to be coordinated with the A.M. and P. M. peak travel periods to minimize disruptions to the travel flow. All work will be in accordance with safe traffic practices, with a minimum delay during the excavation work. *Efforts will be made to schedule construction during non-peak travel time to avoid excessive traffic congestion along the proposed alignment.* For the portions of the proposed alignment that is not immediately adjacent to residential/urban areas, the possible option of night construction schedules may be considered.

b. **Water System - DHCD Planned Projects and BWS future service area planning to year 2015.**

The proposed project alignment is planned to provide potable water from the Kunia reservoir along Farrington Highway down towards Ewa Beach. This will provide for the development of West Loch Phase I & II, Ewa Villages, the East Kapolei area, development of the Estate of James Campbell lands in the area, potential urbanization at the Barbers Point Naval Air Station, and future growth potential in Ewa Beach. An estimate of the water demands for the area through the planning years to 2015 is provided.

Dept. Housing & Community Development: *

Acres: 102

No. of Units: 3849

Avg. Annual Day Rate (GPD) : 2,233,900

Max. Day Rate 1.5 x Avg. (GPD) : 3,350,850

Peak Hr. Rate 3.0 x Avg. (GPD) : 6,701,700

BWS Projected Future Water Demands

Acres: 396

No. of Units: 758

Avg. Annual Day Rate (GPD) : 2,736,750

MaxDay Rate 1.5 x Avg. (GPD) : 4,105,125

Peak Hr. Rate 3.0 x Avg. (GPD) : 8,210,250

Other Developers' Projected Future Demands (See listing in Figure 4)

Acres: 858
No. of Units: 11,058
Avg. Annual Day Rate (GPD) : 7,582,000
MaxDay Rate 1.5 x Avg. (GPD) : 11,373,000
Peak Hour Rate 3.0 x Avg. (GPD) : 22,746,000

Projection Total:

Acres: 1356
No. of Units: 15,665
Avg. Annual Day Rate (GPD) : 12,552,650
MaxDay Rate 1.5 x Avg. (GPD) : 18,828,975
Peak Hr. Rate 3.0 x Avg. (GPD) : 37,657,950

* The projected demand was created by a linear regression calculation from data based on consumption dates 1989 to 1993 and projected to the years 2015. (Source BWS)
(See Figure 4)

Impacts: The proposed project will *deliver potable water consistent with current DHCD projects as well as future demand projections*. As a planning tool, these future demand projections will be implemented on a scheduled basis as urbanization is set in place.

Mitigation measures: The increased demand for potable water will be mitigated by ensuring that it falls within sustainable yields as allocated and approved by the State Commission on Water Resource Management. To address water conservation concerns, recommendations contained in the Commission on Water Resource Management's (CWRM) Water Resources Protection Plan regarding the efficient use of conservation measures and use of alternative non-potable water resources will be implemented to the extent possible, provided there are no harmful effects to the ecosystem.

An additional proposed reservoir (1.5 MG) will be constructed above the Kunia Interchange Highway near the H-1 Freeway at the site proposed in the Master Plan Water System Study, Ewa Development Projects. This additional storage is necessary for the DHCD Ewa Villages and West Loch developments.

The minimum static pressure of the water system will be 40 pounds per square inch (psi); the maximum static pressure will be 125 psi. The water system will comply with all water requirements of the "BWS Water System Standards," City & County of Honolulu.

fire flow. The distribution system will also deliver the peak hour flow (without fire flow). The minimum capacity of the reservoir will be 1.5 million gallons .

c. Wastewater

There is currently no requirement for wastewater treatment necessary to service the project.

Impact: None anticipated.

Mitigation measures: None required.

d. Drainage

The project alignment is designated as: Zone D, "*areas of undetermined flood hazards*". Presently, there are existing improved drainage systems on the alignment. During extended periods of heavy rainfall, runoff is sheet flowed through adjacent fallowed cane fields. Vegetal cover consists of kiawe, ilima, uhaloa, feather fingergrass, buffel grass, and fallowed ratoon sugar cane .

Multiple existing pipe and arch culverts are located along Fort Weaver Road. There are two major drainage basins above the highway. The runoffs from these two areas are transferred beneath the highway by culvert.

Impact: There may be a slight , temporary construction related increase in surface runoff created from the project development. This could impact the coastal waters and groundwater lens to a minor extent.

Mitigation measures: The increase in surface runoff created from the development of the new water transmission lines will be managed by the existing drainage systems on Fort Weaver Road. If needed, drainage improvements within the proposed project area will primarily consist of augmenting roadside swales and culverts. The existing runoff will continue to be discharged into nearby creeks and streams located through the project site. The Drainage system and all computations will be done in accordance with the Department of Public Works, City & County of Honolulu, Storm Drainage Standards, October 1970.

e. Solid Waste Disposal

The proposed development will not generate solid waste after project completion. Temporary construction debris, overburden, and demolition rubble will be removed to approved waste-fill areas as non-degradable fill.

Impact: At completion, the proposed project will not generate additional solid waste which will impact on county and private disposal facilities.

Mitigation measures: None anticipated at this time.

f. Schools

The project area is served by the Ewa Elementary School and Campbell High School.

Impact: None anticipated at this time.

Mitigation measures: No mitigation measures are required at this time.

g. Parks, Recreation, and Open Space

The project site consists of utilizing lands that are public rights-of-way on a major highway arterial and as such, do not require recreation space. The well sites proposed for the park space in Village Park has been determined as critical to the drilling availability in the established Kunia Well Fields. Space taken for this purpose will moderately impact the park space, but the remaining area can continue to function with the well/pump station.

Impact: No significant adverse impacts anticipated at this time.

Mitigation measures: No mitigation measures are proposed at this time.

h. Police Protection

The project site is located within the jurisdiction of the Ewa District. There will be requirements and need for police during construction, and this will be essentially for traffic control.

Impact: The project will result in increased traffic in the area, as well as an anticipated increase in the demands for police services.

Mitigation measure: No mitigation measures are proposed at this time.

i. Fire Protection

Presently, this area is serviced by the Waipahu and Ewa Beach Fire Stations. The Waipahu Station has Pumper, Ladder and Tanker companies; Ewa Beach Station has a Pumper company available for response.

Impact: The proposed project should not require fire protection service during construction or after construction completion.

Mitigation Measures: None are proposed at this time.

j. Health Care Facilities

Health care facilities in the vicinity are currently available at St. Francis Hospital, West. For construction related injuries or accidents, this medical facility will be closest to the project alignment.

Impact: The proposed project will not impact on the health care services in the area especially after completion of construction.

Mitigation measures: No mitigation measures regarding health care facilities are proposed at this time.

k. Utilities (other than water and sewer)

Electric service will be provided by the Hawaiian Electric Company Inc. Requirements for electrical service will be for the pump house at the well site, the storage reservoir, and along the transmission line (Ft. Weaver Road) for pumpage. Telephone service will be provided by GTE Hawaiian Tel.

Impact: As there is currently both electrical and telephone services extending to the project area, additional trunk lines would have to be installed to service the project.

Mitigation measures: The size of development will probably require the electrical connection to extend to the substation located approximately 3,000 feet mauka of the highway.

7.3 Physical Environment

a. Geology and soils

The soils underlying the project alignment are basically from lava flows from the Koolau volcanic shield. These soils are classified as : Molokai Silty Clay Loam 3-7% slope, (MuB); Molokai Silty Clay Loam, 7-15% slopes (MuC) ; Waipahu Silty Clay, 3-8% slopes (WkB) ; and Honouliuli Clay 0-2% slopes , and Honouliuli Clay 2-6% slopes. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii produced in 1972 by the U.S. Department of Agriculture, Soil Conservation Service.

In general, these soils occur on well drained areas on the coastal plains. Runoff is slow to moderate, and the erosion hazard is slight to moderate. Primary use is for sugar cane, pasture, and homesites. Annual rainfall amounts to 20-25 inches, most of which occurs between November and April. The area's primary economic activity is agriculture, predominantly sugar cane. The recent closure of Oahu Sugar Company will result in fallowed sugar lands. These lands will be experiencing a major transition from Agriculture to Urban-Residential, which is in turn creating a need for utilities, i.e. potable water.

Impacts: The proposed project will not create an impact on geology and soils.

Mitigation: No mitigation measures are proposed.

b. Topography

The elevation of the site varies from a maximum of 310 feet to 150 feet, mean sea level. The topography is characterized as moderately sloping in the mauka-makai direction, with slopes ranging from 12% to 19% overall, with much steeper slopes over short distances along the sides of gulches. The existing physical environment of the project site is primarily vacant, coastal grass/kiawe scrub land that provides limited habitat for exotic species.

Impact: Topographic alterations will result from onsite grading to provide drainage systems, and infrastructure improvements.

Mitigation measures: Alteration of the area's topographic features will be minimized by taking advantage of the area's natural terrain for gravity feed capabilities.

c. **Climate**

The temperature in the Ewa area averages 78 degrees Fahrenheit. Northeasterly trades prevail in the area.

Impact: The proposed project will not affect the climate of the area.

Mitigation measures: No mitigation measures are necessary.

d. **Hydrological characteristics**

Hydrological features

The hydrological features and characteristics of the site are typical of the Ewa District. The proposed project is located in a semi-arid area of Oahu with a mean annual rainfall of approximately 20-25 inches per year. The evaporation rate for the area is one of the highest in the state. Although there are no perennial streams or surface water features on the site, major drainage ways carry a large volume of water from the mauka (inland) watershed to the ocean during rare prolonged rainy periods. The shoreline consists of tidal flats which fringe the Pearl Harbor Lochs.

The project area is within the Pearl Harbor Groundwater Aquifer. The groundwater aquifer beneath the area is well characterized as being within a zone of basal water. The present status of the project schedule involves exploratory well drilling to determine quality and ability to provide sustainable yield.

Surface water and groundwater quality

Rainfall percolating into the soil mixes with the underlying groundwater lens and concentrations of dissolved nutrients in the groundwater and inshore marine waters generally reflect the naturally-occurring input of nutrients.

Impact: Development of the proposed project will temporarily cause surface runoff to increase suspended solids and silt loading into receiving waters, i.e. West Loch of Pearl Harbor.

Mitigation measures: In spite of the anticipated insignificant impact to the groundwater and coastal waters, the following precautionary measures will be taken, and are based on the assumption that containment and mitigation of surface runoff and potential impacts to the Coastal Zone are required under the Best Management Practices (BMP) requirements of the National Pollution Discharge Elimination System (NPDES). This permit requirement is managed and administered under the "Soil Erosion Standards & Guidelines, Supplement 1, Revised December, 1992" Department of Public Works, City & County of Honolulu. These procedures provide approved guidelines for the grading of parcels over one acre in size, or if a proposed cut or fill is greater than 15 feet in height. Included is a Grading, Soil Erosion, and Sediment Control Plan. Article 14 addresses permits, bonds, and inspection for Grading, Soil Erosion, and Sediment Control, while Article 15 covers Grading, Grubbing, and Stockpiling. The Contractor of record will adhere to terms and conditions outlined above. Requirements for a Federal U.S. Army Corps of Engineers Section 404 permit are pending final review after examination of the scope of work as provided in this document. Further, the Department of Health, State of Hawaii will enforce compliance with the NPDES permit conditions where appropriate.

e. **Noise**

The major source of noise on the project site will be the construction related noise associated with the project. After completion of the construction, there will be little if any operational noise impacts.

Construction-related impacts: Unavoidable, but temporary noise impacts will occur during construction of the proposed project. The total time period for construction is unknown due to the nature of the scope of design and implementation, but it is anticipated that the actual work will be moving from one location on the project site to another during that period. Adverse impacts from construction noise are not expected to be in the "public health and welfare" category due to the temporary nature of the work and due to the administrative controls available for its regulation. Instead, these impacts will probably be limited to the temporary degradation of the quality of the acoustic environment in the immediate vicinity of the project site.

Mitigation: Mandatory compliance with the Department of Health, State of Hawaii, Community Noise Regulations for operation of construction equipment in urban/residential areas. Mitigation of construction noise to inaudible levels will not be practical in all cases due to the intensity of construction noise sources (80 to 90+ dB at 50 ft. distance), and due to the exterior nature of the work (grading and earth moving, trenching, concrete pouring, hammering, etc.) The use of properly muffled construction equipment will be used on the job site. The incorporation of construction noise limits and curfew periods can also help to mitigate construction noise.

f. **Air Quality**

Although virtually no air quality monitoring data are available from the State Department of Health for the Ewa area, the existing air quality at the project site currently meets both state and national ambient air quality standards. Air quality in the vicinity of the project is mostly affected by emissions from natural, industrial, agricultural, and/or vehicular sources. The dominant factor for the past several years has been the presence of particulates from cane burning. The sugar industry had a permit to burn cane during the harvesting process to reduce cane trash. This activity has ceased with the demise of the sugar plantations, namely Ewa Plantation and Oahu Sugar Company. Other natural sources of air pollution that may affect the air quality of the site include the ocean, plants, and windblown dust. Some particulate and hydrocarbon emissions presently occur from industries located at Campbell Industrial Park and the Barbers Point Naval Air Station. Automotive emissions, primarily nitrogen oxides and carbon monoxide, from motor vehicles passing through the area on Interstate Highway H-1, Farrington Highway, and Fort Weaver Road may also reduce the ambient air quality.

Impacts: Development of the proposed project will lead to some short-term impacts on air quality. Short-term impacts from fugitive dust will likely occur during the project construction phase. To a lesser extent, exhaust emissions from stationary and mobile construction equipment, from the disruption of traffic, and from workers' vehicles may also affect air quality during construction.

After construction, long-term impacts on air quality will be minimal if not non-existent. The water lines will be

underground and will not create air quality impacts due to operations and/or maintenance.

Mitigation measures: During construction of the project, an effective dust control plan will be implemented to ensure compliance with state regulations. Dust control measures may include watering of active work areas, use of wind screens, keeping adjacent paved roads clean, and covering open-bodied trucks. Other dust control measures include limiting the area that can be disturbed at any given time and/or mulching or chemically stabilizing inactive areas that have been worked on, as well as paving and landscaping of project areas early in the construction schedule to the extent practicable. Exhaust emissions will be mitigated by moving construction equipment and workers to and from the project site during off-peak traffic hours.

g. **Visual Impacts/Open Space**

In its undeveloped state, the proposed project site includes typical highway arterials, fallowed or abandoned cane fields, and an existing reservoir tank at a highway intersection.

Impact: The proposed development will result in the minor reduction of open space and an alteration of existing viewplanes.

Mitigation measures: To mitigate potential concerns about open space interruption, *discussions with the concerned neighborhood boards, and also the urban residential communities that will be adjacent to the project alignment may be utilized to mitigate concerns over the additional reservoir.*

h. **Historic and Archaeological Resources**

At the present time, historic or archaeological sites are not considered likely due to the current status of the project alignment. With the exception of the fallowed cane field which will be included in the alignment, the majority of the project will be developed within existing road-rights-of-way. *The State DLNR provided a "No effect" determination in their review of the proposed project alignment. 11-20-95.*

Impact: There are none anticipated at this time.

Mitigation measures:

In the event that archaeological sites are uncovered during construction, work will be halted and the State Historic Preservation Division, Department of Land and Natural Resources, will be notified so that a determination as to the significance and approximate age of the finds can be made. If a burial is disturbed, *agency responsibility and jurisdiction will be determined based on the age of the disturbed burial. The DLNR exercises their jurisdiction on burials over 50 years old, and the Department of Health is the agency of record for burials under 50 years old.*

i. Flora

The flora of the proposed alignment consists primarily of introduced species, with sugar cane ratoons being the principal variety. The vegetation along the existing highway arterials are exotic weed varieties and are normally treated with herbicides. *Trenching work will take place within existing State Highway rights-of-way that have been established as part of the highway. Discussions on the existence of vegetation has been discussed in the EIS documents prepared for Fort Weaver Road.*

Impact: The proposed development of the site will not have a significant negative impact on the botanical resources. There are no botanical reasons to impose any conditions, restrictions, or impediments to the proposed use of the site.

Mitigation Measures: No recommendations are proposed at this time.

j. Fauna

The subject *Fort Weaver Road, and fallowed cane field* parcels are locales where the primary fauna species consist of introduced or exotic species of birds and mammals. There are no endemic species recorded on the project alignment; on extremely rare occasions, the Short-eared Owl or Pueo (*Asio flammeus sandwichensis*) may be seen passing through the area. Birds more commonly noted or seen are:

<u>Common Name</u>	<u>Scientific Name</u>
Gray Francolin	<i>Francoilinus pondicerianus</i>

Spotted Dove	<i>Streptopelia chinensis</i> ^{corrected}
Zebra Dove	<i>Geopelia striata</i>
Common Myna	<i>Acridotheres tristis</i>
Northern Cardinal	<i>Cardinalisa cardinalis</i>
Japanese White-eye	<i>Zosterops japonicus</i>
House Finch	<i>Carpodacus mexicanus</i>

Feral mammals observed on the project site include small Indian Mongoose (*Herpestes auropunctatus*) and cats.

Impact: Impacts to avifauna and feral mammals are expected to be minor.

Mitigative measures: Due to no endangered species located on the proposed alignment, no mitigative measures are required.

k. **Coastal Zone Management Program**

The marine environment closest to the project site is West Loch, Pearl Harbor, Oahu. Under Navy ownership and control, public access is prohibited due to Naval Defense Perimeter Restriction. The Naval Magazine Station, Lualualei is active and in a restricted zone.

The proposed project alignment is located within the Coastal Zone Management Area which now includes all projects within the State of Hawaii regardless of whether or not they are within the Special Management Area (SMA) or not.

Act 91. Session Laws of Hawaii, 1993 provides that the Coastal Zone Management Area now includes all land areas as well as marine waters extending to the limits of the State's police power and management authority.

Act 258. Session Laws of Hawaii amended Chapter 205A of the Hawaii Revised Statutes 1993 by adding two additional sets of objectives and policies, bringing the total to nine objectives and policies that must be addressed by the proposed project. These are as follows:

a. **Recreational Resources** - Not applicable

b. **Historic Resources** - No known historic or archaeological resources are located within the project alignment.

c. Scenic/Open Space Resources - The proposed project has no structural view impediment by design and will not adversely impact the Scenic or Open Space perspectives. The additional storage reservoir will be within close proximity to the existing storage reservoir and will not provide additional view plane impacts.

d. Coastal Ecosystems - Not applicable

e. Economic Uses - The proposed alignment has been designed in the most compatible location from an engineering perspective as well as being economically cost-effective.

f. Coastal Hazards - Not applicable.

g. Managing Development - The proposed project will be reviewed by Federal, State, and County agencies, public interest groups, Neighborhood Boards, and the City Council in the review process for amendments to the Development Plan Public Facilities map.

h. Public Participation - Public participation will be possible, as required by law, during the local government permit review processes. For this project, it will be the City Council who will be examining the project for amendments to the Public Facilities Map of the City Development Plan. At this early planning stage, there are no Special Management Area (SMA) permit requirements.

i. Beach Protection - Not applicable.

Impact: The proposed improvements will not negatively impact the adjacent nearshore marine environment. The annual loads of total suspended solids discharged into the ocean under existing developed land use will not increase significantly after completion of the proposed improvements.

Mitigative Measures: None required.

8.0 RELATIONSHIP BETWEEN LOCAL SHORT TERM USES OF HUMANITY'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY

8.1 Short-term actions for long-term productivity

The following is a summary of some of the short term actions which will lead to long-term productivity through the creation of employment opportunities, economic diversity, and improved recreational and cultural opportunities.

1) Short term construction for economic diversity

Although the proposed offsite water improvements are limited due to the nature of the planned facility, the temporary economic benefits that accrue from the construction of the Water System will afford the community and the economy an opportunity to regain fiscal strength. Eventually the overall region will allow social and economic integration.

2) Work opportunities to improve social services

The concept of a "Second City" in the Ewa-Kapolei area means that the current situation of bedroom community residents holding two or more jobs, or commuting a considerable distance to their places of employment can be relieved. The planned improvements will help to establish the desired work place closer to their residences by providing jobs closer to their homes, and boost the economy in the area.

8.2 Discussion of the extent to which the proposed action forecloses future options, narrows the range of beneficial uses of the environment, or poses long-term risks to health or safety

At present, the proposed project alignment exists as an existing road right-of-way. A minor deviation is through a segment of fallowed cane land. Development of the proposed project will not reduce the amount of open space and habitat for plants and animals. This impact is not expected to be significant, since the planned alignment supports only a only a limited number of exotic (introduced) plants.

9.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

The development and operation of the proposed project will result in an irreversible and irretrievable commitment of land, capital, material, labor, and energy. It will also result in a commitment of public funds and services. The commitment of these resources, however, should be evaluated in terms of the expected benefits to the community accruing from the project. Moreover, the commitment of publicly supported services and facilities will be compensated by increases in tax revenues generated from the project's delivery of the potable water product, and the subsequent development of the adjacent urban areas.

Commitment of potable quality water from the Pearl Harbor Aquifer would be an irreversible and irretrievable commitment of resource if the proposed action is implemented. According to the BWS Engineering Division, The Commission on Water Resource Management has initiated this commitment with approved allocations for 1.97 MGD.

10.0 PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

10.1 Brief summary of any effects which are adverse and unavoidable under the proposed action.

Development of the project will temporarily affect ambient air quality, existing noise levels, and surface water quality. Traffic volumes will increase due to construction related congestion, and there will be increased demands on groundwater resources for potable uses, as well as increased demands on public services. Planned residential projects will create added demand for infrastructure, i.e. sewage treatment and disposal, solid waste management, school, parks, fire protection, and police facilities. Implementation of land use policies will dictate the need for government services, and this project is a beginning.

10.2 Rationale for proceeding with a proposed action, notwithstanding unavoidable effects.

Despite the identified unavoidable effects, the project will proceed. Most of the unavoidable effects are due to the construction related impacts from the development of the project alignment. The only way that these unavoidable effects could be avoided is to maintain the historical agricultural land use.

The proposed Offsite Water System development has been mandated previously by land use plans and policies that have designated Ewa as a major urban area. The ability to provide potable water is a responsibility of the DHCD and the BWS as indicated earlier. As such, it is not a catalyst to engender urban development.

10.3 Extent to which stated countervailing benefits could be realized by following reasonable alternatives to the proposed action that would avoid some or all of the adverse environmental effects.

The countervailing benefits to the proposed action are primarily providing potable water, stimulating economic development in the area, and generating needed property tax revenues. It will create short term employment opportunities for those in the construction industry, as well as long-term employment to service the subsequent employment centers that could develop in a "Second City".

The alternatives presented in this document include: (1) no action; (2) exploration of alternative water sources, potable and non-potable quality; and (3) abandon current urban land use plans and policies.

The first alternative would retain the existing open space character. However, this alternative could exist for a predictable time period and would necessitate a change in land use plans and policies. Also, there would be no direct economic use of the property. No jobs and housing opportunities would be created, and there would be no enhancement of the City's real property tax base.

The second alternative would accelerate exploration into recycling of brackish water to potable standards, re-using treated "black water" effluent for non-human consumption, and the possible containment of surface runoff/drainage water. However, this would require extensive and expensive examination of these mechanical possibilities. The BWS has not had funding necessary to fully explore the cost-benefit analysis of these academic alternatives. A recent example was a pilot desalinization plant. Energy costs and brine disposal were not cost effective, and the BWS is concentrating on the groundwater aquifer in the Pearl Harbor Groundwater Control Area. Future consideration of these alternatives will become necessary as the 2010 Plan becomes current and a reality. Feasibility studies are being initiated for alternative sources or alternative means of recycling.

The third alternative would have greater economic impact on the City & County. Reversion to the Agricultural District would close off urban expansion, increase carrying capacity loads in the Primary Urban Center, and confuse development plans by private and public sector housing agencies. Replacement agricultural industries in the scale and size of sugar and pineapple would require extensive study, and time to provide a comparable labor intensive activity.

11.0 MITIGATION MEASURES PROPOSED TO MINIMIZE IMPACT

Mitigation measures to reduce significant, unavoidable, and adverse impacts are discussed under Chapter. 7.0.

12.0 SUMMARY OF UNRESOLVED ISSUES

The Final EIS has attempted to identify all potential substantive impacts and provide adequate mitigative measures for a proposed project. To the extent possible at this level of investigation, the specific impacts and their proposed mitigative measures are identified. However, because plans are only preliminary at this state of the permitting process, likewise their perceived impacts and proposed mitigations can only be conceptual. The more detailed analyses will occur in conjunction with the development of specific plans for the project and the submission of plans for agency review and approval.

Some of the identified unresolved issues are as follows:

- 1) The source development exploratory well sites will need to confirm the ability to provide a sustainable yield of 3.5* MGD.
** The DEIS stated a quantity of 4.54 MGD; this was corrected in a revised engineering Master Plan Study to the present amount of 3.5 MGD.*
- 2) The phasing of the total offsite water system is at the present time, concentrating on the DHCD planned projects. Delivery of the potable product is a first priority to DHCD. The future service areas of Barbers Point Naval Air Station and Ewa development areas will be dependent on the ability of the BWS to respond to project demand. As a planning tool, this FEIS will assist the BWS in maintaining communication with the Ewa development projects in terms of timing and demand.
- 3) Social and Community attitudes on the issue of windward water availability may be a divisive issue to the adjacent communities. Community meetings and briefings will need to provide these private sector groups the opportunity to put forth their positions.

Unresolved issues will be studied and will be appropriately resolved prior to construction.

13.0 DISCLOSURE OF PARTIES CONSULTED IN THE PREPARATION OF THE ENVIRONMENTAL IMPACT STATEMENT AND DISCLOSURE OF THE IDENTITY OF THE PREPARERS OF THE STATEMENT

13.1 List of government agencies, other organizations, and private individuals to be consulted in preparing the environmental impact statement with date of comment.

	<u>Date</u>
<u>Federal</u>	
Department of Agriculture, Soil and Conservation Service	
Department of Commerce, National Marine Fisheries Service	
Department of the Interior, Fish and Wildlife Service	
U.S. Army Corps of Engineers, Operations Branch	
U.S. Navy	12-7-95
<u>State</u>	
Dept. of Accounting./General Services	10-20-95
Department of Agriculture	
Department of Business and Economic Development Energy Office	10-12-95
Housing Finance & Development Corporation	11-14-95
Department of Education	
Department of Hawaiian Home Lands	
Department of Health, Environmental Management Division	11-20-95
Department of Land and Natural Resources	11-20-95
Aquatic Resources Division	
Commission on Water Resources Management	
Forestry and Wildlife Division	
Office of Conservation and Environmental Affairs	
State Historic Preservation Division	11-20-95
Water and Land Development Division	
Department of Transportation, Highways Division	11-15-95
Office of Environmental Quality Control	10-5-95
Office of Hawaiian Affairs	11-6-95
Office of State Planning	
University of Hawaii at Manoa, Environmental Center	
University of Hawaii at Manoa, Water Resources Research Center	
<u>City & County of Honolulu</u>	
Department of Parks and Recreation	10-13-95
Department of Public Works	10-13-95
Board of Water Supply	11-24-95
Fire Department	10-27-95
Department of Housing and Community Development	
Planning Department	12-7-95
Police Department	
Department of Land Utilization	

Offsite Water System
Ewa Development Projects

December, 1995

Department of Transportation Services
Building Department

11-21-95
10-13-95

Public Utilities

Hawaiian Electric Company, Inc.
The Gas Company
GTE Hawaiian Telephone Company

11-15-95

Private and Community Groups

Waipahu Neighborhood Board No. 22
Ewa / Ewa Beach Neighborhood Board No. 23
Estate of James Campbell
Gentry Homes, Ltd.
Schuler Homes, Ltd.
Ewa Plains Water Development Corp.
Village Park Community Association

13.2 Identity of the persons, firms, or agency preparing the statement

F. J. Rodriguez
Environmental Communications
P.O. Box 536
Honolulu, Hawaii 96809
phone: 528-4661

Engineers Surveyors Hawaii, Inc.
1020 Auahi Street, Bldg. No. 6 Suite 1
Honolulu, Hawaii 96814

Akinaka & Associates, Inc.
250 N. Beretania Street Suite 300
Honolulu, Hawaii 96817

Offsite Water System
Ewa Development Projects

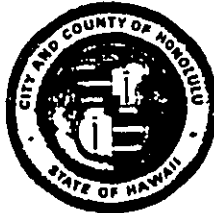
December, 1995

**14.0 REPRODUCTIONS OF ALL SUBSTANTIVE COMMENTS
AND RESPONSES**

The following pages are reproductions of all comments received on the Draft Environmental Impact Statement (DEIS) and the responses provided.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498



JEREMY HARRIS
MAYOR

ROLAND O. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 15, 1995

Ms. Linda M. Colburn, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813-5249

Dear Ms. Colburn:

Subject: Draft Environmental Impact Statement (DEIS)
for Offsite Water System for Ewa Development Projects
Ewa, Oahu, Hawaii

Thank you for your comments dated November 6, 1995 on the subject project. We respond as follows:

Your comments as provided have been forwarded to the engineering consultants who prepared, in two parts, the engineering plans for the two DHCD projects that are planned and approved. These projects are identified in Figure 4 as West Loch, Phases I and II, and Ewa Villages. The engineering planning has proceeded in consultation with the Board of Water Supply engineering and design staff. For the 3.5 million gallons of water indicated, the design for the well source, the storage reservoirs, and the transmission lines have been completed and will be put out to bid this calendar year. Pending funding approvals, the project is designed to be completed in scheduled phases of construction in 1998 at an estimated cost of approximately \$20 million dollars.

The second portion of the DEIS provides background planning for future BWS service areas to the year 2015. Providing the infrastructure based on planning projections is necessary to service the needs of future households on a timely basis. The BWS based its initial projections on a twenty-year horizon to determine how much water would be needed for the Ewa Plains development as mandated by both the State and City and County of Honolulu.

The process of land use policy changes that will begin with the State Land Use Commission, the City and County General Plan, Development Plan Land Use Map and Public Facilities Map amendments, and will conclude with zoning changes will take some time before being

Ms. Linda M. Colburn
December 15, 1995
Page 2

completed. In this light, the BWS is not *justifying* the need for a water system for Ewa development projects. The BWS is meeting the spirit of Chapter 343, HRS, by early disclosure of impacts anticipated with the best information available. As each private and/or government entity establishes their water requirements based on density and type of development proposed, the BWS can adjust or verify the assumptions contained in this document.

We will clarify in the FEIS use of the term "sustainable yield." All withdrawals must be approved by the Commission of Water Resource Management, Department of Land and Natural Resources. DLNR on October 19, 1994 approved the withdrawal of 1.97 MG from the Waipahu-Waiawa aquifer system as the initial water demand for the DHCD projects at West Loch. OK

We believe the flora section as drafted is adequate since the alignment from the well source to the Kunia Reservoir, through the fallowed cane field, and along Fort Weaver Road within existing State Department of Transportation rights-of-way are devoid of vegetation including indigenous, rare or threatened species. The BWS and DHCD determined that based on previous experience and visual examination that the identification of varieties of vegetation (i.e., weeds) would add little to the quality of the DEIS in disclosing impacts. DOT's periodic application of EPA-approved herbicides further substantiates this position.

In conclusion, the EIS document provides the information needed for the known developments the water system is expected to serve and to the extent possible provides the available advance planning information for other planned developments. We look forward to working with OHA on this and other projects. Thank you for your timely comments.

Sincerely,


ROLAND D. LIBBY, JR.
Director

cc: Environmental Communications



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813-5249
PHONE (808) 594-1888
FAX (808) 594-1865

November 06, 1995

Ms. Cheryl Soon
Chief Planning Officer
Dept. of Housing & Community Development
650 S. King St.
Honolulu, HI 96813

Dear Ms. Soon:

Thank you for the opportunity to review the draft environmental impact statement (DEIS) for Off-Site Water System for Ewa Development Projects, Island of Oahu. The focus of the DEIS is outlined in page 1.1,

"The focus of this DEIS is on the ability of the project to develop a sustainable yield of potable water in the quantities anticipated in the event of full growth. As a twenty year planning tool, the planning and design of source development, storage capability, and transmission service line can be scheduled, designed and built to meet project need as development takes place."

As expressed above, the DEIS is deemed as a twenty year planning tool for the Ewa District. This may be an overstatement as we find the DEIS and supporting documentation substantially weak in justifying the need for a water system for Ewa development projects. We particularly have a hard time in grasping the overall intent of the project based on the focus outlined above. Our basic understanding of EIS's is that they provide a clear and concise picture of the proposed development highlighting major reasons why it should take place, what are the benefits and adverse impacts stemming from, and what are the mitigation alternatives.

TWZ

Letter to Ms. Soon
Page Two

Among other things, we find the DEIS's narrative vague and lacking substance in addressing key questions such as: What are the current and potential water demands of the project? What is the rationale for requiring a Phase I 1.5 MG reservoir in addition to the Kunia 228.0' reservoir? Is there a Phase II or III? If so, what is the overall scope and timetable? Is there a rationale for the changes in pipeline size back and forth along the transmission system?

We are troubled by the use of technical terms out of context, i.e., "sustainable yield" (p. 1.1 and 1.5) and "variety" (p. 7-13). Our understanding of sustainable yield is that it is a hydrological term that expresses forced withdrawal of ground water at a rate that could be sustained indefinitely without affecting either the quality of the pumped water or the rate of pumping; variety, in turn, is a term used in plant taxonomy to name and/or describe progenies of a given plant species. We also find the Flora section (p. 7-13) particularly poor in (i) identifying and describing existing vegetation, (ii) assessing impacts, and (iii) determining mitigation measures.


We also find the DEIS preparers somewhat disingenuous in addressing the impact of the proposed water demand on the sustainable yield of the Pearl Harbor Aquifer. In page 1-5, the preparers not only fail to establish what is the overall water demand for the development but outline mitigation measures which say very little about mitigation at all. Particularly troubling is the following statement in page 1-5, (the word in parentheses is added for clarity):

"The increased (water) demand is perhaps the most significant impact of the proposed project. It will need to be mitigated by ensuring that it falls within sustainable yields as allocated and approved by the State Commission on Water Resource Management."

We find the above statement incomplete and vague as it neither does provide a quantifiable measure of the impact of the water demand on the sustainable yield of the Pearl Harbor aquifer nor indicates the amount of water requested to the Commission on Water Resource Management. Since the size and feasibility of the project will ultimately depend upon the size of the water allocation, it could be in the best interest of the preparers to include a narrative explaining the size of the water allocation requested to the Commission on Water Resource Management and what is the status of that request.

Letter to Ms. Soon
Page Three

In conclusion, we find the DEIS in need of a major overhaul to substantiate the Board of Water Supply's intent to develop an off-site water system for the Ewa District. Please contact me, Linda Delaney (594-1938), or Luis Manrique (594-1935), should you have any questions on this matter.

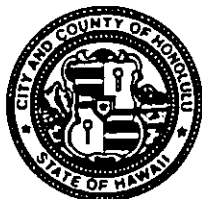
Sincerely yours,

Linda M. Colburn
Administrator

LM:lm

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498

JEREMY HARRIS
MAYOR



ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 15, 1995

MEMORANDUM

TO: Cheryl D. Soon, Chief Planning officer
Planning Department

FROM: Roland D. Libby, Jr., Director

SUBJECT: Draft Environmental Impact Statement
for Off-Site Water system for Ewa Development Projects


We have your comments on the subject project DEIS dated December 7, 1995 and we respond as follows. The responses have been provided with assistance from your staff as to the content of the responses being required. In Items 1-12, the changes have been made in the Final EIS in the specific section cited. To differentiate between the Draft EIS and Final EIS, the changes and additions are reflected in boldface italicized typeface. We further provide the following specific responses:

1. Section 1.1 clarifies the dual nature of the EIS document as a site specific EIS for the DHCD projects and also the BWS future service area planning effort. We have also identified *the site specific clarification in the Section 3.0 chapter heading by adding the designated DHCD projects. BWS long range planning for future service areas will require the planning, design, and construction of source development, (wells), storage reservoirs, and transmission mains. At this time, the BWS is in the preliminary stages of well site exploration and does not have final determination of the potential sources of potable water. The Phase I storage reservoir at the existing Kunia 228" reservoir is for the use of the DHCD housing projects and will consist of a total of 3.5 MG necessary for the West Loch Phases I and II and Ewa Villages use. Other phases are part of the BWS future service areas and specific locations and sizing have not yet been determined.*
2. The specific identification of the existing water system between the 228' water reservoir and the Fort Weaver Road transmission line is discussed on Pages 1-4, 3-1 and 5-1 with the pump station and the transmission main.

Memorandum to Cheryl D. Soon
December 15, 1995
Page 2

3. The discussion on the Ewa Plains Water Development Corporation and the role that it does not play is identified on Page ~~7~~ 1-8. ^{Pub. Fac.} DAQ
4. The site specific identification of the DHCD projects is qualified on Page 1-9. *DHCD will submit applications to amend the DP/PF maps for Central Oahu and Ewa to reflect the well site, the transmission main from the well site to the reservoir, and portions of the transmission main between Farrington Highway to Fort Weaver Road.* DAQ
5. We concur with the recommendation that consultation with the Planning Department is in order to determine the amendments to the Development Plans. ✓
6. A map has been prepared and included as ~~Figure 7~~ ^{SIB-F-3} Figure 7 (no legend) p. 6-2 (this is a PF map) ✓
7. A statement on the City's position on the Waiahole/Windward agricultural water is provided on Pages 7-2 and 7-3. We will limit the discussion on this EIS to the DHCD projects and the BWS future service areas only. ✓
8. The missing discussion on transportation impacts has been provided on Page 7-4. ✓
9. Additional discussion on the impacts on flora/fauna has been provided on Page 7-14. DAQ
10. A response in the affirmative to the comment of irreversible/irretrievable commitment of water as a resource is on Page 9-1. ✓
11. The 4.54 MG reservoir storage capacity was reduced to 3.5 MG as a result of the revised Engineering Water Master Plan. The correction is noted on Page 12-1. ✓
12. The discussion on potential impacts and proposed mitigation measures have been expanded where applicable. ✓

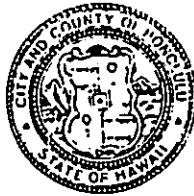
Thank you for your interest and continuing cooperation from your staff.

Sincerely,

ROLAND D. LIBBY, JR.
Director

cc: Environmental Communications

PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813



JEREMY HARRIS
MAYOR

CHERYL D. SOON
CHIEF PLANNING OFFICER
CAROLE TAKAHASHI
DEPUTY CHIEF PLANNING OFFICER

ET 10/95-2083

December 7, 1995

MEMORANDUM

TO: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: CHERYL D. SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR OFF-SITE
WATER SYSTEM FOR EWA DEVELOPMENT PROJECTS

Thank you for giving us the opportunity to review the Draft Environmental Impact Statement (DEIS) for the proposed Off-Site Water System for Ewa Development Projects. We have reviewed the subject document and offer the following comments:

1. Sections 1.3 or 3.0 which give a description of the project would be the appropriate place to describe and clarify the joint nature of this project between the Department of Housing and Community Development (DHCD) and Board of Water Supply (BWS). The 30" line along Fort Weaver Road will be installed from Puuloa Road to Papipi Road. *not done* Puuloa Road should be identified on the project map. The report also states that two wells will be required to serve BWS future service areas. The EIS should describe the proposed location and size of these wells. The proposed 1.5 MG reservoir to be located at the existing Kunia 228' reservoir is identified as a Phase I reservoir. What are the descriptions of the other phases? The EIS should clearly indicate the need for the project and, to meet this need, provide a full description.
2. The Final Environmental Impact Statement (FEIS) should describe the existing water system between the 228' water reservoir and Fort Weaver Road. The FEIS should also describe how this existing water system relates to the proposed improvements.
3. FEIS should describe how the proposed improvements relate to the Ewa Plains Water Development Corporation (EPWDC) water system. The FEIS should describe the EPWDC, their service area and projects that they serve as compared to this proposal.

Roland D. Libby, Jr., Director
Department of Housing and Community Development
December 7, 1995
Page 2

4. Section 1.8, Necessary Approvals and Permit Requirements, should be revised to include a brief explanation as to how the various approvals and permits apply to the proposed project. *no done*

The proposed project would not require an amendment to the Development Plan Land Use Map.

5. An amendment to the Central Oahu Development Plan Public Facilities map would be required for the proposed well, reservoir, and 16" water transmission main between the well and reservoir.

The Ewa Development Plan Public map currently shows water transmission lines along Fort Weaver Road. Portions of the proposed water transmission main between Fort Weaver Road and Farrington Highway would require an amendment to the Ewa Development Plan Public Facilities Map. We recommend a consultation with the Planning Department to determine the amendments needed to the Development Plans.

6. Chapter 6.0, Statement of the Relationship of the Proposed Action to Land Use Plans, Policies, and Controls for the Affected Area, should be amended to include a map showing the appropriate Development Plan Land Use Map designations and zoning. *not done*
A map of State Land Use District Boundaries is already provided as Figure 3.

7. Section 7.1.a.3, Potential Availability of Windward Agricultural Water should be reviewed and, possibly, rewritten to clarify the issues being raised. *OK*

8. Section 7.2 (a) of the DEIS should include a discussion of the impacts on transportation if any. This section is currently lacking such a discussion. *OK*

9. Section 7.2 (j) should explain why impacts to avifauna and feral mammals are expected to be minor. *not done*

10. In Section 9.0, page 9-1, would groundwater from the Pearl Harbor aquifer be included as a resource irreversibly and irretrievably committed if the proposed action is implemented? *OK*

11. In Section 12, what is the basis for the 4.54 mgd of water mentioned. Supporting data appears to be lacking. Is the 4.54 mgd the proposed allocation from the CWRM? *not answered*

12. We recommend that the content of the DEIS be improved by expanding the discussion on potential impacts and proposed mitigative measures. *? (somewhat)*

Roland D. Libby, Jr., Director
Department of Housing and Community Development
December 7, 1995
Page 3

Enclosed for your review are the comments received from the following agencies:

City Agencies

Honolulu Fire Department
Department of Public Works
Department of Parks and Recreation
Department of Transportation Services
Board of Water Supply

State Agencies

Office of Environmental Quality Control
Department of Accounting and General Services
Department of Business, Economic Development, and Tourism
Department of Transportation
Housing Finance and Development Corporation
Office of Hawaiian Affairs
Department of Land and Natural Resources
Department of Health

Private

Hawaiian Electric Company, Inc.

Please send us a copy of any additional comments you may have received.

Should you have any questions, please contact Eugene Takahashi of our staff at 527-6022.

Cheryl D. Soon
CHERYL D. SOON
Chief Planning Officer

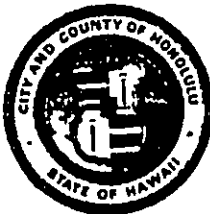
CDS:lh

cc: Mr. Fred J. Rodriguez
OEQC

Enclosures

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498



JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 19, 1995

Mr. Stanford B. C. Yuen, P. E.
Department of the Navy
Commander Naval Base Pearl Harbor
Box 110
Pearl Harbor, Hawaii 96860-5020

Dear Mr. Yuen:

Subject: Draft Environmental Impact Statement
for Offsite Water System Ewa Development Projects

We have received your recent comments dated December 7, 1995. We respond to them as follows:

- a. Yes. The tests are required by the Board of Water Supply as part of the determination to establish adequate quantity as well as potable quality water.
- b. The Commission on Water Resources Management (CWRM) determines sustainable quantities of potable quality that can be withdrawn from the Pearl Harbor aquifer. At the present time, the CWRM has approved the withdrawal of 1.97 million gallons (MG) from the Waipahu-Waiawa aquifer system for the specific housing projects detailed in the EIS.
- c. Our Department and the Board of Water Supply will be subject to the findings of fact and conditions of law that are finalized at the end of the CWRM hearings. The long-term future use of non-potable water for irrigation is of concern to all water consumers on the windward and leeward side of Oahu but not an issue considered in this EIS.

Mr. Stanford B. C. Yuen
December 19, 1995
Page 2

- d. In keeping with its water resource management responsibility, the CWRM will determine the availability of water from the Pearl Harbor aquifer, as well as the transport of water from the windward side to the leeward side of Oahu.
- e. The methodology of determining recharge of Waiahole Ditch water is not the subject under discussion in this EIS. This matter is under the jurisdiction of the CWRM.
- f. Board of Water Supply (BWS) engineering and planning staff do not anticipate adverse impacts to the Navy wells at Waiawa or Naval Air Station Barbers Point from this proposed project. Prior to this project, there had been withdrawal from the Kunia III well fields with little if any adverse impacts to the Navy wells.
- g. The BWS is providing early disclosure in the calculations shown on Figure 4. Without definitive plans as to the actual planning and construction of developments in the Ewa Plains, the BWS is providing early disclosure of the potential potable water requirements, should future planned developments in the Ewa Plains by private and public sectors take place to the year 2015.
- h. The continued Navy water system use for the BPNAS is acknowledged.
- i. The State Historic Preservation Officer, Department of Land and Natural Resources (SHPO/DLNR), advised the DHCD in correspondence dated November 20, 1995 that a "no effect" determination had been made. Further, the mitigation measures governing the treatment of inadvertent uncovering of burials is provided by the SHPO/DLNR and made a part of the revisions contained on Page 7-13, 7-14
- j. This project is not subject to federal funding, permits or approvals, and as such, criteria for Section 106 of the National Historic Preservation Act do not apply. However, as the State custodian of project review for both the State and Federal laws, the SHPO reviews and determines compliance with the criteria.
- k. See Item I.
- l. We stand corrected on the listing of endemic avifauna species listed on Pages 7-14 and 7-15. Only the Pueo (*Asio flammeus sandwichensis*) is rarely seen in the area. The Hawaiian Hawk and Yellow-billed Cardinal are not on Oahu. Corrections have been made to the inaccurate spelling (*Spotted Dove Streptopelia Chinensis*) and Yellow-billed Cardinal. The cardinal is being excised from the list. ✓

Mr. Stanford B. C. Yuen
December 19, 1995
Page 3

- m. The nature of the alignment provided the basis for the statement that there are no known historic or archaeological resources. Cane fields are highly unlikely to provide either historic or archeological resources, and the Fort Weaver Road is also an unlikely candidate for these undiscovered finds.
- n. The "no effect" determination was also corroborated in the November 20, 1995 advice from the SHPO that the project alignment does not lend itself to historic or archaeological resources. The SHPO reviewed the alignment shown in the EIS; construction drawings are not required in this instance.

Thank you for your timely comments.

Sincerely,


ROLAND D. LIBBY, JR.
Director

cc: Environmental Communications



DEPARTMENT OF THE NAVY
COMMANDER
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96860-5020

IN REPLY REFER TO:

5090P
Ser N42(23)/ 6852
07 Dec 95

Ms. Cheryl Soon
Chief Planning Officer
Planning Department
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Ms. Soon:

Thank you for the opportunity to review the Draft
Environmental Impact Statement for Off-Site Water System for Ewa
Development Projects. The Navy's comments are provided as
enclosure (1) for your use and consideration in preparing the
Final Environmental Impact Statement:

If you have any questions, the Navy's point of contact is
Mr. Stanford Yuen, Facilities Manager at 474-0439 or by facsimile
transmission at 474-2328.

Sincerely,

15/
Stanford E.C. Yuen, P.E.
By direction

Copy to:
Ms. Gail Kaito
Department of Housing and Community
Development
650 South King Street
Honolulu, HI 96813

Mr. Fred Rodriguez
Environmental Communications
P.O. Box 536
Honolulu, HI 96809



SUMMARY REVIEW COMMENTS

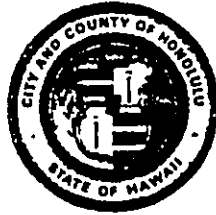
- a. Will there be sustainable yield pumping tests for the proposed project? ✓
- b. If sustainable yield pumping tests are not conducted, what will be used to determine the impact of the additional withdrawal? ✓
- c. Considering that the Waiahole Ditch controversy may not be settled soon, if sustainable yield tests are conducted, how will the impact of Waiahole Ditch recharge or non-recharge be factored in? ✓
- d. Again, considering that the Waiahole Ditch controversy may not be settled soon, if sustainable yield tests are not conducted, how will the impact of Waiahole Ditch recharge or non-recharge be factored in? ✓
- e. If a model is used to determine the impact of Waiahole Ditch recharge or non-recharge, what if it's wrong? Will the proposed new wells be closed? ✓
- f. What will be the impact to Navy wells at Waiawa and Naval Air Station (NAS) Barbers Point? ✓
- g. On Figure 4 (Future Service Areas), what is the basis for serving 758 dwelling units at NAS Barber's Point? ✓
- h. p. 1-8 BWS FUTURE SERVICE AREAS includes existing golf course at NAS Barbers Point. This golf course will be retained by the Navy and water service will continue to be from the Navy water system.
- i. p. 6-3, f. Historic Sites Element. This is not an adequate coverage of potential archaeological sites. There is no argument as to why "it is highly unlikely that historic sites will be uncovered." The mere presence of sugar cane fields does not preclude the presence of archaeological sites. Previous highway construction impacts only a small part of this project area. Any excavation requires concurrence from the State Historic Preservation Officer (SHPO) that sites are not being affected. SHPO needs to be provided with drawings of the proposed excavation. ✓
- j. p. 7-12, h. Historic and Archaeological Resources. As noted in comment #i, this is not sufficient. A determination must be made as to Section 106 criteria of "no effect", "no adverse effect", etc. when the actual plans are known. ✓
- k. p. 7-13, Mitigation measures. The Native American Graves Protection and Repatriation Act of 1990 must be complied with, including provisions for notifying Native Hawaiian organizations in case of inadvertent discovery. PreContact burials cannot be moved with a Disinterment Permit. Recommend this section be redone by an archaeologist. ✓
- l. p. 7-13, j. Fauna. Recommend this section be redone by a biologist. The endangered Hawaiian Hawk and Yellow-Billed Cardinal are found only on the island of Hawaii. Half of the scientific names of the birds are misspelled. ✓

m. p. 7-14, b. Historic Resources. What is the basis for stating there is no known historic or archaeological resources? As a minimum provide references. ✓

n. SHPO letter of August 7, 1995 on Environmental Impact Statement (EIS) Preparation Notice. What was the "no effect" concurrence based on? Were drawings submitted to SHPO and are they the same for the work proposed in this EIS? ✓

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498



JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 5, 1995

Mr. Gordon Matsuoka
Department of Accounting and
General Services
Kalanimoku Building
1151 Punchbowl Street, Room 412
Honolulu, Hawaii 96813


Dear Mr. Matsuoka:

**Subject: Draft Environmental Impact Statement for the Off-Site Water
System for Ewa Development Projects - Ewa, Oahu, Hawaii**

We have reviewed your comments dated October 20, 1995 and duly note the proposed Ewa II Elementary School construction located in the subject study area. As this proposed off-site water system progresses, the Board of Water supply will program the construction of future off-site water system improvements.

Thank you for your continuing cooperation.

Sincerely,


ROLAND D. LIBBY, JR.
Director

cc: Environmental Communications

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P. O. BOX 119, HONOLULU, HAWAII 96810

10/15/95 2:19P
SAM CALLEJO
COMPTROLLER
MARY PATRICIA WATERHOUSE
DEPUTY COMPTROLLER

LETTER NO (P) 1721.5

OCT 20 1995

Ms. Cheryl Soon
Chief Planning Officer
Planning Department
City and County of Honolulu
Honolulu, Hawaii


Dear Ms. Soon:

Subject: Offsite Water System
Ewa Development Projects
Ewa, Oahu, Hawaii
Draft Environmental Impact Statement

Thank you for the opportunity to review the subject document. The Department of Accounting and General Services is in the first increment construction phase for the proposed Ewa II Elementary School, which is located in the subject study area. We are in support of the City's efforts to improve the water system in the Ewa area since they are beneficial to the aforementioned school.

If there are any questions regarding the above, please call Mr. Ralph Yukumoto of the Planning Branch at 586-0488.

Very truly yours,

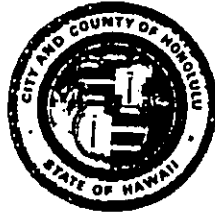

GORDON MATSUOKA
State Public Works Engineer

RY:jy
cc: Dept. of Housing & Community Dev.
Environmental Communications

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498

JEREMY HARRIS
MAYOR



ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 4, 1995

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


Dear Mr. Hayashida:

Subject: Draft Environmental Impact Statement (EIS) for Off-site Water System for
for Ewa Development projects

Thank you for your comments dated November 15, 1995 on the subject project. We respond
as follows:

1. Plans for all proposed construction projects will be provided to State DOT, Highways Division, for review and approval. Water main locations will be coordinated with your office.
2. Setback requirements as cited for the Kunia Road intersection will be provided for SDOT review to insure that all setbacks for potential well pumps and the proposed GAC treatment plant are in compliance with SDOT requirements.
3. All plans for construction in the right-of-way will also be made available to SDOT for prior review and approval.

Sincerely,


ROLAND D. LIBBY, JR.
Director

BENJAMIN J. CAYETANO
GOVERNOR



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

NOV 15 1995

1145-2-342
KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
JERRY M. MATSUDA
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-PS
2.8071

Ms. Cheryl Soon
Chief Planning Officer
Planning Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Ms. Soon:

Subject: Draft Environmental Impact Statement (EIS) for
Off-Site Water System for Ewa Development Projects

Thank you for the opportunity to review the draft EIS.

We have the following comments:

1. We have long-range plans to widen both Kunia and Fort Weaver Roads. Proposed water main locations should be coordinated with the Highways Division.
2. Construction plans for proposed improvements on TMK: 9-4-02: 14 and 25 should be submitted to the Highways Division for review and approval. To accommodate planned improvements to the Kunia Road intersection with the H-1 Freeway, we require about a 10-foot setback along the east side of the existing Kunia Road right-of-way (ROW) and a small tapered setback at the northeast corner of the intersection. Existing well pump #3 and the footprint of proposed GAC treatment plan may need to be relocated.
3. All plans for construction within the State highway ROW must be submitted for our review and approval.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Kazu Hayashida".

KAZU HAYASHIDA
Director of Transportation

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498

JEREMY HARRIS
MAYOR



ROLAND G. LIBBY, JR.
Acting Director

ROBERT AGRES, JR.
Deputy Director

October 26, 1995

Mr. Gary Gill, Director
Office of Environmental Quality Control
220 South King Street, Fourth Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Draft Environmental Impact Statement (DEIS)
Ewa Development Projects Off-site Water System
Tax Map Keys: 9-1-1, 5, 7, 10, 12, 17-21, 25 and 28; 9-4-2 and 137

We have received your agency comments dated October 5, 1995 and the consultants with the Board of Water Supply provide the following:

1. Figure 1 (project location map) is the best available at the present time. If a new and clearer map can be produced, it will be included in the FEIS. We have also identified the designations for land uses in Figure 2.
2. According to the Board of Water Supply (BWS) Engineering Division, "Granulated Activated Carbon (GAC) removes contaminants by a natural process known as Physical Adsorption. The contaminants diffuse into the granular carbon particles and adsorb or attach themselves onto the walls of the pores of the carbon. Due to the physical properties of the contaminants and the carbon, the contaminants adhere to the surfaces of the carbon. This type of plant is selected because it is the best available technology (BAT) according to the EPA drinking water standards for the removal of such contaminants as DBCP, TCP, EDB and DCP which have been detected in waters in the area. We acknowledge that there are other treatment alternatives and final treatment selection will be based on the results of the water quality testing at the Kunia Wells III site."
3. According to the BWS Engineering Division, "The DelMonte Superfund site is located approximately 4.5 miles above the proposed Kunia III project. The effect of the DelMonte Superfund site on the Kunia Wells III site cannot be determined until the water quality analysis is performed. This usually occurs at the end of the long term testing. The water quality is more related to the conditions of the water in the area rather than a particular well."

Mr. Gary Gill
October 26, 1995
Page 2

4. According to the BWS Engineering Division, "The State Department of Land and Natural Resources Commission on Water Resources Management sets the standard for the sustainable yield for each aquifer sector. The proposed sustainable yield for the Pearl Harbor aquifer is 184 MGD. Water allocations are approved on the basis that there are no negative impacts to the aquifer.

We estimate approximately 83 MGD is being pumped from Pearl Harbor aquifer. This is about 45% of the sustainable yield.

The Department of Housing has been allocated 1.27 MGD for their new projects and 0.700 MGD has been transferred to this site for their existing usage.

Kunia Wells III and the 16-inch transmission main is the source for the Ewa Villages project and future BWS growth in Ewa Beach.

The proposed reservoir site will be solely for the Department of Housing and Community Development (DHCD) projects (West Loch Phases I and II and Ewa Villages).

The new 42-inch and 36-inch transmission mains along Fort Weaver Road will serve the following developments:

- a. DHCD's Ewa Villages Project and West Loch Fairways Project.
- b. Campbell Estate's proposed Laulani project and development of land at TMK: 1-6-9: 03.
- c. Barbers Point Naval Air Station.
- d. Proposed East Kapolei development area.
- e. BWS projected future growth in Ewa Beach."

Thank you for your continuing interest and cooperation.

Sincerely,


ROLAND D. LIBBY, JR.
Acting Director

cc: Environmental Communications

10/95 20-603

BENJAMIN J. CAYETANO
GOVERNOR



GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-2452

RECEIVED
5 PM: 3:30
HONOLULU

October 4, 1995

Roland Libby, Jr.
Department of Housing and Community Development
650 South King Street
Honolulu, Hawaii 96813

Attention: Gail Kaito

Dear Mr. Libby:

Subject: Draft Environmental Impact Statement (EIS) for Ewa Development
Projects Offsite Water System; TMK 9-1-1, 5, 7, 10, 12, 17-21, 25 & 28;
9-4-2 & 137

We have reviewed your distribution list for this draft EIS. In addition to the recipients on the list you have prepared, please also send a copy to the Ewa Plain Water Development Company. You may begin distribution at any time.

If you have any questions please call me at 586-4185.

Sincerely,

Nancy Heinrich
Planner

c: Cheryl Soon, City & County of Honolulu Planning Department
Fred Rodriguez, Environmental Communications

BENJAMIN J. CAYETANO
GOVERNOR



GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4186
FACSIMILE (808) 586-2482

October 5, 1995

Roland Libby, Jr.
Department of Housing and Community Development
650 South King Street
Honolulu, Hawaii 96813

Attention: Gail Kaito

Dear Mr. Libby:

Subject: Draft Environmental Impact Statement (EIS) for Ewa Development
Projects Offsite Water System; TMK 9-1-1, 5, 7, 10, 12, 17-21, 25 &
28; 9-4-2 & 137

In the final EIS please include the following:

1. For Figure 2 (project location map) please provide a clearer map. For Figure 3 (State Land Use District boundary map) please add a key explaining the one-letter abbreviations used in the map.
2. Please provide an explanation of a granular activated carbon waste treatment plant, its pros and cons, and why this type of plant was selected for possible use.
3. Please consult with the Environmental Protection Agency and discuss the effect of the DelMonte superfund site (polluted well water in Kunia) on the proposed system.

Roland Libby, Jr.
October 5, 1995
Page 2

4. Please discuss the cumulative impact of withdrawing water from the Pearl Harbor aquifer. How much of the sustainable yield has already been allocated and to which developments? Describe other water development projects by private and government entities in the region and how they relate to your proposed system.

If you have any questions, please call Nancy Heinrich at 586-4185.

Sincerely,



GARY GILL
Director

GG/NH:kk

c: Cheryl Soon, City & County of Honolulu Planning Department
Fred Rodriguez, Environmental Communications



DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT, AND TOURISM

ENERGY DIVISION, 335 MERCHANT ST., RM. 110, HONOLULU, HAWAII 96813 PHONE: (808) 587-3800 FAX: (808) 587-3820

BENJAMIN J. CAYETANO
Governor

SELI F. KAYA
Director

RICK EGGED
Deputy Director

073 Png Dept

October 9, 1995

Ms. Cheryl Soon
Chief Planning Officer
Department of Planning
City and County of Honolulu
650 South King Street, Fourth Floor
Honolulu, Hawaii 96813

Dear Ms. Soon:

SUBJECT: Off Site Water System - Ewa Development Projects
Tax Map Key: 9-1-01, 05, 07, 10, 12, 17 to 21, 25 & 28.
9-4-02 & 9-4-137

We wish to inform you that we have no comments regarding the subject Off Site Water System - Ewa Development Projects.

Thank you for the opportunity to submit any comments or recommendations.

Sincerely,

Maurice H. Kaya
Energy Program Administrator

MHK:aw

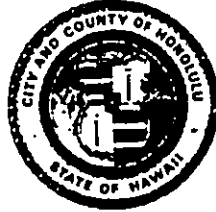
c Ms. Gail Kaito, Dept., of Housing & Community Development
Mr. Fred Rodriguez, Environmental Communications. ✓

NO RESPONSE REQUIRED

OCT 12 1995

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498



JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 7, 1995

Mr. Roy S. Oshiro, Executive Director
Housing Finance and Development Corporation
677 Queen Street, Suite 300
Honolulu, Hawaii 96813

Dear Mr. Oshiro:

Subject: Draft Environmental Impact Statement (DEIS)
for Offsite Water System for Ewa Development Projects

We have received your comments on the subject project dated November 14, 1995 and we respond as follows:

1. Your advice that the State land bank area as shown on Figure 4 may be incomplete has been provided to the engineering consultant who prepared the Offsite Water System Master Plan for the Honolulu Board of Water Supply. Information as shown in the figures provided was developed in conjunction with the BWS and are shown as the service area that can be provided water by the 228' system. While the State land bank area extends up to and beyond Farrington Highway, Figure 4 only shows the 228' service area.
2. The references on Page 2-1 to BWS projections to the year 2015 for the Barbers Point Naval Air Station as well as government and private sector projects are for planning purposes and do not reflect any specified development projects that in turn could identify types of development, i.e., Residential, Commercial, Agricultural, etc. It should be pointed out at this point that there are several steps remaining to establish appropriate land use designations at the State Land Use Commission, City and County General Plan, Development Plan, and zoning levels. When these specific land use policy steps have been initiated, the BWS will have a clearer picture of the type of development being considered by the various landowners.

Mr. Roy S. Oshiro
December 7, 1995
Page 2

3. The engineering consultants did consider one other alignment alternative and this was on the old Fort Weaver Road. Due to water system hydraulics and mechanics, this alternative was discarded on the basis of not being cost-effective to install and operate.
4. The inability of Schuler Homes to develop residential development in the Kapolei/State land bank area will be closely monitored by the BWS. The Water Master Plan was developed recently and as development plans change, the BWS will be responsive to the future service area demands.
5. The main trunk line that is presently planned for connection to the Fort Weaver Road transmission system is designed on engineering principles that utilize gravity feed from the storage reservoir to the transmission lines. Your concern is appreciated and we urge your participation in the planning process with the BWS by advising their planning staff of your future development plans. This can result in savings of design and construction by consolidating system designs.

Thank you for your concerns and continuing cooperation.

Sincerely,


ROLAND D. LIBBY, JR.
Director

cc: Environmental Communications

11/15/95 2377

BENJAMIN J. CAYETANO
GOVERNOR



ROY S. OSHIRO
EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
877 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813
FAX (808) 587-0600

IN REPLY REFER TO:
95:DEV/6515

November 14, 1995

Ms. Cheryl Soon, Chief Planning Officer
Planning Department
City & County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

Dear Ms. Soon:

Subject: Draft Environmental Impact Statement (DEIS) for
Off-Site Water System for Ewa Development Projects

Thank you for the opportunity to comment on the DEIS. The Housing Finance and Development Corporation (HFDC) is in support of the City's efforts to improve the water system in anticipation of future growth on the Ewa Plain.

We have reviewed the subject report and have the following comments to make:

1. We would like to point out that the State land bank area, known as "East Kapolei," appears to be inaccurately represented in Figure 4. Why is the upper line of area 4 for "East Kapolei" at an angle? Is it not safe to assume that development would extend up to Farrington Highway, if not beyond? This potential area demand, to include the University of Hawaii at Kapolei, should be included in the water system table?
2. On Page 2-1, the DEIS indicates that the Board of Water Supply (BWS) projections include Barbers Point Naval Air Station (BPNAS) and development in Ewa Beach. What type of development is being considered for the remaining area of the Ewa Plain (i.e., East Kapolei)? Also, if BPNAS is being considered, does this include the upgrades needed to bring the existing infrastructure up to current BWS standards?
3. What were the other alignments being considered? A description should be included in Section 4.0, Description of Any Known Alternatives to the Project.



Ms. Cheryl Soon
November 14, 1995
Page 2

4. Since Schuler Homes will not be the developer of the State land bank area in East Kapolei, using the Schuler forecast in Section 1.7 for water demand may leave this area short of water within a few short years.
5. The location of the main trunk line from the existing booster pump station to Ft. Weaver Road seems to be far from the primary growth areas as depicted in Figure 4. Would not the new North/South Road or at least the old Palehua Cane Haul Road be a better alignment to serve areas 3, 4 and 5 which are projected to become the larger future growth areas? If the alignment is no longer flexible, perhaps the DEIS should address how these areas are to be serviced in the future.

Should you have any questions regarding our comments, please call me at 587-0640, or Stephen Thomas, Kapolei Project Manager, at 587-0541.

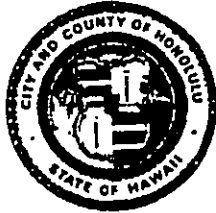
Sincerely,



ROY S. OSHIRO
Executive Director

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498



JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 7, 1995

Mr. Michael D. Wilson, Chair
Board of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Subject: Draft Environmental Impact Statement (DEIS)
for Offsite Water System - Ewa Development Projects

We have received your Department comments dated November 20, 1995, and we respond in the following:

Division of Aquatic Resources - Construction activities which could have potential adverse impacts on Waialeale Stream and subsequently Pearl Harbor will be monitored with care by the general contractor. All suggested measures will be considered and made a part of the construction documents.

Responding to Items 1, 2 and 3, the trenching for placement of water line pipe is extremely limited in scope of effort. The typical width for a waterline is dependent on the size of the pipe being installed. For example, a 36" pipe requires a trench width of approximately 54"; a 42" pipe requires a trench width of approximately 66". The typical depth of trench excavation in accordance with Board of Water supply construction standards is approximately 3 to 5 feet of cover material above the installed pipe. The pipe is bedded with engineered fill and basalt aggregate to insure stability of pipe placement. All excavated materials are retained for replacement, with the exception of the initial cover material. Construction is scheduled to take place for the most part within the State DOT highway rights-of-way.

The single exception is the transmission line from the proposed reservoir to Fort Weaver Road. This segment will cut through abandoned or fallowed cane lands to make the

Mr. Michael D. Wilson
December 7, 1995
Page 2.

connection in as short a period as possible. Extensive clearing and grubbing are not anticipated at this time since the principal effort is to trench and place pipe lines. All County grading requirements will be complied with the contractor of record responsible for his housekeeping to control potential pollutants from blowing or leaching into the aquatic environment.

Historic Preservation Division

1. We acknowledge the "no effect" on historic sites determination.
2. Revisions to mitigation measures on pages 7-13 regarding the differential of the age on inadvertently discovered burials are acknowledged. Further, we will revise the affected section as follows: *"If a burial is disturbed, agency responsibility and jurisdiction will be determined based on the age of the disturbed burial. The DLNR exercises their jurisdiction on burials over 50 years old, and the Department of Health is the agency of record for burials under 50 years old."* We trust that this further detail will suffice.

Commission on Water Resource Management


1. The Board of Water Supply will be the driving force on the physical installation of the proposed system, and this includes the well facilities, the storage reservoir, and the ultimate transmission lines. As stated in the DEIS, this document is a planning tool to the year 2015 and will reflect design and construction planning contingent on demand for potable water in the Ewa Plains. The initial effort will be to provide replacement water for the DHCD projects already committed for construction. All system designs and construction plans will be in compliance with BWS and DPW standards. The required NPDES permits and water quality requirements from the State Department of Health will assist in the abatement of potential pollution impacts. All work during the initial phases are for and by government. Private sector projects will be required to assist in development costs through the connection fee program.
2. Permit requirements for well construction and pump installation have been obtained for this project.
3. A water use permit has been approved by the Commission on Water Resource Management. It is acknowledged that the proposed source site is within a designated management area.

Mr. Michael D. Wilson
December 7, 1995
Page 3

4. Discrepancies between the stated pump capacities in the DEIS and the pump installation permits are still contingent on the final well test report to the Commission. The quality of the pumped water may require granular activated carbon treatment prior to transmission of water depending on the water quality test results. Based on the quantities (1.97 MGD) approved from the Waipahu-Waiawa Aquifer System, it may require a permit modification in the event that projected demands exceed previously approved allocations. All approvals will be prepared and processed in a timely manner.

Thank you for your prompt attention to reviewing the DEIS. We look forward to working with the DLNR on this planning document.

Sincerely,


ROLAND D. LIBBY, JR.
Director

cc: Environmental Communications

BENJAMIN J. CAYETANO
Governor of Hawaii



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. Box 621
Honolulu, Hawaii 96809

Chairperson
MICHAEL D. WILSON
Board of Land and Natural Resources

Deputy Director
GILBERT COLOMA-AGARAN

Aquaculture Development
Aquatic Resources
Boating and Ocean Recreation
Bureau of Conveyances
Conservation and Environmental Affairs
Conservation and Resources Enforcement
Forestry and Wildlife
Historic Preservation
Land Management
State Parks
Water and Land Development

FILE: 96-150

RECEIVED
NOV 22 10:10:55
HONOLULU

Ms. Gail Kaito
City & County of Honolulu
Department of Housing & Community Development
650 South King Street
Honolulu, Hawaii 96813

NOV 20 1996

Dear Ms. Kaito:

SUBJECT: Draft Environmental Impact Statement for Off-Site Water
System - Ewa Development Projects

We have completed our review of the subject matter and have the following comments:

Division of Aquatic Resources

The proposed project(s) is not expected to have significant adverse impact on aquatic resource values in the area. However, the Division is concerned because the project site is located within the vicinity of Pearl Harbor and Waialeale Stream. In particular, Waialeale Stream provides habitat for a number of native freshwater fauna. Therefore, construction activities could have potential short-term impacts on aquatic resources such as temporary turbidity, biota displacement and disturbance.

We would suggest the following measures (as an inclusion) to minimize erosion and siltation during construction:

- 1) site work be scheduled for periods of minimal rainfall;
- 2) lands denuded of vegetation be replanted or covered as quickly as possible to control erosion;
- 3) construction materials, petroleum products, and debris should be prevented from falling, blowing, or leaching into the aquatic environment.

Ms. Gail Kaito

FILE: 96-150

Historic Preservation Division

The proposed water system follows established Board of Water Supply rights of way along roads through former sugar cane fields and in developed residential areas. It is extremely unlikely that historic sites will be found in these circumstances, due to the nature and extent of modern development. Therefore, we believe this project will have "no effect" on historic sites.

Page 7-13 of the DEIS incompletely summarizes the process for treating inadvertently discovered human burials. If a burial is more than 50 years old, then it falls under DLNR's jurisdiction and is treated according to HRS 6E-43. The Department of Health permit is needed only for inadvertently discovered burials that are less than fifty years old.

Commission on Water Resource Management

We have the following comments:

1. 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.
2. A Well Construction Permit and a Pump Installation Permit from the Commission on Water Resource Management would be required before ground water is developed as a source of supply for the project.
3. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission on Water Resource Management would be required prior to use of this source.
4. Section 1.3.1 states that proposed pump station site improvements will consist of three 1050 gpm submersible pumps. On October 19, 1994, the Commission approved pump installation permits for the three wells, provided that the final determination for pump capacities will be made in light of the aquifer test results and approved ministerially by signature of the Chairperson.

Ms. Gail Kaito

FILE: 96-150

The wells are currently allocated 1.97 mgd from the Waipahu-Waiawa Aquifer System. The projected demands for the project (shown in Figure 4) exceed the current allocation. An application to modify the water use permit must be approved prior to any additional use of the wells.

Thank you for your cooperation in this matter. Please contact Cathy Tilton of our Office of Conservation and Environmental Affairs at 587-0447, should you have any questions.

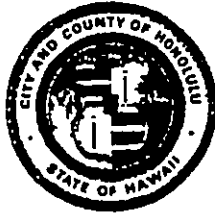
Aloha,

Cathy Tilton
for MICHAEL D. WILSON

xc: Ms. Cheryl Soon, City & Cnty Planning Dept.
Mr. Fred Rodriguez, Environmental Communications

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498



JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 4, 1995

Mr. Lawrence Miike, Director
State of Hawaii
Department of Health
P. O. 3378
Honolulu, Hawaii 96801

Dear Mr. Miike:

Subject: Draft Environmental Impact Statement (DEIS)
Off-Site Water System - Ewa Development Projects

We have received your Department comments dated November 20, 1995 and we respond as follows:

Drinking Water: All requirements pertaining to Hawaii Administrative Rules, Title 11, Chapter 20, "Rules Relating to Potable Water System," will be complied with wherever appropriate. This would include: all connections for the various users on this planned system; development of new sources; engineering report analyses; and design review for new or modified distribution systems.

Thank you for your timely comments.

Sincerely,


ROLAND D. LIBBY, JR.
Director

11/6/95-2403

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



LAWRENCE MIKE
DIRECTOR OF HEALTH

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

In reply, please refer to

November 20, 1995

95-112A/epo

Ms. Cheryl D. Soon
Chief Planning Officer
Planning Department
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Ms. Soon:

Subject: Draft Environmental Impact Statement (DEIS)
Off Site Water System--Ewa Development Projects
Oahu

Thank you for allowing us to review and comment on the subject document. Besides the comments that are contained in our letter dated August 9, 1995 (enclosed), we have the following additional comments to offer at this time:

Drinking Water

1. Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules, Title 11, Chapter 20, "Rules Relating to Potable Water Systems."
2. The draft EIS indicates that the project will include the development of new sources of potable water. Section 11-20-29 of Chapter 20 requires that all new sources of potable water serving a public water system be approved by the Director of Health prior to its use. Such an approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.
3. The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses,

NOV 21 1995

NOV 21 1995

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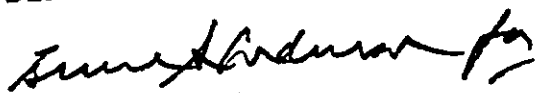
Ms. Cheryl D. Soon
November 20, 1995
Page 2

performed by a laboratory certified in the State of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional tests may be required by the Director upon his review of the information submitted.

4. Section 11-20-30 requires that new or substantially modified distribution systems for public water systems be approved by the Director. However, if the water system is under the jurisdiction of the County of Honolulu, the Board of Water Supply will be responsible for the review and approval of the plans.

If you should have any questions, please contact Ms. Queenie Tan of the Safe Drinking Water Branch at 586-4258.

Sincerely,



Lawrence Miike
Director of Health

Enclosure

c: Environmental Communications
Department of Housing & Community Development
Safe Drinking Water Branch

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801
August 9, 1995

LAWRENCE MIKE
DIRECTOR OF HEALTH

In reply, please refer to:

95-112/epo

Mr. F. J. Rodriguez
Environmental Communications
P. O. Box 536
Honolulu, Hawaii 96809

Dear Mr. Rodriguez:

Subject: Environmental Impact Statement Preparation Notice
Off-Site Water System For Ewa Development Projects
Ewa, Oahu

Water Pollution

1. The applicant should contact the Army Corps of Engineers to identify whether a Federal permit is required for this project. A Section 401 Water Quality Certification (WQC) from the Department of Health is required for "Any applicant for Federal license or permit to conduct any activity, including the construction or operation of facilities which may result in any discharge into the navigable waters....," pursuant to Section 401 (a) (1) of the Federal Water Pollution Act.
2. If the project involves the following activities with discharges into State waters, an NPDES general permit is required for each activity:
 - a. Discharge of storm water runoff associated with construction activities, including clearing, grading, and excavation that result in the disturbance of equal to or greater than five (5) acres of total land area;
 - b. Construction dewatering effluent;
 - c. Non-contact cooling water;
 - d. Hydrotesting water; and
 - e. Treated contaminated groundwater from underground storage tank remedial activity.

Mr. F. J. Rodriguez
August 9, 1995
Page 2

3. If there is any type of process wastewater discharge from the facility into State waters, the applicant may be required to apply for an Individual NPDES permit.

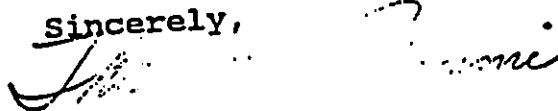
Should you have any questions regarding this matter, please contact Ms. Hong Chen, Engineering Section of the Clean Water Branch at 586-4309.

Wastewater Reuse

There are plans to provide treated wastewater effluent for non-potable purposes in the Ewa Plains development area. The Department of Health (DOH) recommends that the use of reclaimed wastewater for non-potable purposes be considered in the planning and design of the Off-Site Water System Improvements. The DOH has a publication entitled, "Guidelines for the Treatment and Use of Reclaimed Water", which might be useful to the applicant.

If you have any questions regarding the use of reclaimed wastewater, please contact Mr. Tomas See of the Wastewater Branch at 586-4294.

Sincerely,

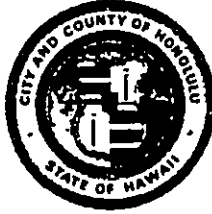


for LAWRENCE MIIKE
Director of Health

c: CWB
WVB
SDWB

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498



JEREMY HARRIS
MAYOR

ROLAND D. LIBBY JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 5, 1995

Mr. William A. Bonnet, Manager
Environmental Department
Hawaiian Electric Company, Inc.
P. O. Box 2750
Honolulu, Hawaii 96840-0001

Dear Mr. Bonnet:


Subject: Draft Environmental Impact Statement (DEIS)
for Off-site Water System for Ewa Development Projects

We have received your comments dated November 15, 1995 on the subject project and we respond as follows:

1. The additional 1000 feet of primary underground line is duly noted and the design engineering firm is advised by copy of this response.
2. As the future 20-year planning process by the Board of Water supply progresses with demand for potable water, your firm will be advised as the developments being planned are in their preliminary stages.

Thank you for your timely comments.

Sincerely,


ROLAND D. LIBBY, JR.
Director

cc: Environmental Communications

11/15-2348



William A. Bonnet
Manager
Environmental Department

16 NOV 1995
NOV 15 1995
November 15, 1995

Mrs. Cheryl Soon
Chief Planning Officer
Planning Department
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Ms. Soon:

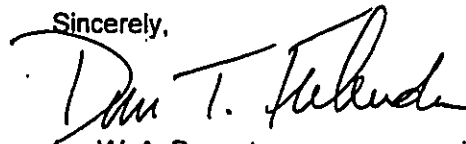
Subject: **Draft Environmental Impact Statement for
Off Site Water System - Ewa Development Projects**

Thank you for the opportunity to comment on your October 1995 draft EIS report for the water system development project, as proposed by the City & County Department of Housing & Community Development. HECO has the following comments:

1. The well pump site will require an additional 1000 feet of primary underground line extension to provide pump meter supply.
2. Further review and consideration of additional electrical facilities is required to determine whether existing facilities are capable of supporting the project's proposed load demand.

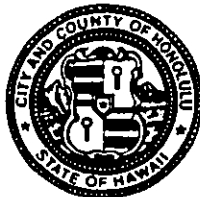
HECO will reserve further comments pertaining to the protection of existing powerlines bordering the project area until construction plans are finalized. Our point of contact for this project, and the originator of these comments, is Bill Muench (543-5657), Senior Distribution Engineer. I suggest your staff and consultants deal directly with Bill to coordinate HECO's continuing input on this project.

Sincerely,


for W. A. Bonnet

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498



JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 5, 1995

MEMORANDUM

TO: Anthony J. Lopez, Chief
Honolulu Fire Department

FROM: Roland D. Libby, Jr., Director

SUBJECT: Off-Site Water System for Ewa Development Projects
Tax Map Keys: 9-1-001, 005, 007, 010, 012, 017 - 021, 025 & 028; 9-4-002;
9-4-137

Thank you for your comments dated October 27, 1995 on the subject project. We respond as follows:

Revisions will be made to the Fire Protection section on page 7-7, amending the paragraph to reflect the service areas for the specific project locations.

Thank you for your continuing cooperation.


ROLAND D. LIBBY, JR.
Director

cc: Environmental Communications

10/95 - 2238

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

3375 KOAPAKA STREET, SUITE H425
HONOLULU, HAWAII 96819-1869



JEREMY HARRIS
MAYOR

ANTHONY J. LOPEZ, JR.
FIRE CHIEF

ATTILIO K. LEONARDI
FIRE DEPUTY CHIEF

October 27, 1995

TO: CHERYL D. SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

FROM: ANTHONY J. LOPEZ, JR., FIRE CHIEF

SUBJECT: OFF SITE WATER SYSTEM FOR
EWA DEVELOPMENT PROJECTS

I have reviewed the Draft Environmental Impact Statement for the above referenced project. The following changes need to be made to the Fire Protection section.

Presently, this area is serviced by the Waipahu and Ewa Beach Fire Stations. The Waipahu Fire Station has Pumper, Ladder and Tanker companies; and the Ewa Beach Fire Station has a Pumper company available for response.

This project should not affect our ability to provide fire and emergency protection to the Ewa area. Should you have any questions, please call Captain Robert Lee of our Administrative Services Bureau at 831-7735.

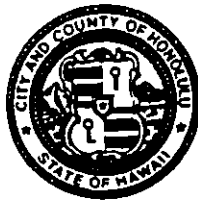

ANTHONY J. LOPEZ, JR.
Fire Chief

AJL/RL:ay

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498

JEREMY HARRIS
MAYOR



ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 5, 1995

MEMORANDUM

TO: Raymond H. Sato, Manager and Chief Engineer
Board of Water Supply

FROM: Roland D. Libby, Jr., Director

SUBJECT: Draft Environmental Impact Statement (DEIS), Ewa Offsite Water System
Projects, Tax Map Keys: 9-1-01, 05, 07, 12, 17 to 21, 25 and 28; 9-4-02 and
9-4-137, Ewa, Oahu, Hawaii

We have received your comments dated November 24, 1995 on the proposed offsite water system and we provide the following responses:

1. Dual water systems have been included in Section I on page I-9. Discussions with your environmental planning staff and engineering design staff provided the necessary references to include in the Final EIS. It was acknowledged that the current planned projects for the Department of Housing and Community Development (DHCD) have been reviewed and approved by the Board of Water (BWS) Supply and will be proceeding as designed. For future service areas that the BWS will be planning for, the dual water system will be required.
2. References to reservoir site improvements on page 1-3 have been expanded to include the proposed 2.0 MG reservoir site below Farrington Highway at the 228' elevation. This is shown on Figure 4.
3. Discussions with the engineering consultants indicate that the 16-inch pipeline sizing has been evaluated and accepted in the BWS review of the planned projects for DHCD.

Memorandum to Raymond H. Sato
December 5, 1995
Page 11

4. Ewa by Gentry water requirements have been reviewed by the Water Master Plan engineering consultants and at the present time, the deletion of their future requirements can be accommodated. However, as their water demand is firmed up, a review by the BWS and the Ewa Plain Water Development Corporation will be necessary to insure delivery of the potable water requirements necessary for the Gentry development.

Thank you for your continuing cooperation and timely comments on our DEIS.


ROLAND D. LIBBY, JR.
Director

cc: Environmental Communications

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU



11/25-2473
COPY

November 24, 1995

RECEIVED
NOV 28 PM 5:52
CITY AND COUNTY OF HONOLULU

Mr. Frederick J. Rodriguez
Environmental Communications
P. O. Box 536
Honolulu, Hawaii 96809

Dear Mr. Rodriguez:

Subject: Draft Environmental Impact Statement (DEIS) for the Proposed Off-Site Water System - Ewa Development Projects, TMK: 9-1-01, 05, 07, 10, 12, 17 to 21, 25 and 28, 9-4-02 and 9-4-137, Ewa, Oahu, Hawaii

Thank you for the opportunity to review the DEIS for the proposed water system development. Our previous comments of June 22, 1995 and August 11, 1995, have been adequately addressed and are included in Chapter 14 of the document. We have the following additional comments:

1. The DEIS should address the dual water systems which will be required for irrigation use within the project area. The potable water demands should be revised accordingly and the environmental impacts of the nonpotable system should be addressed.
2. Page 1-3: The DEIS should address the total storage requirements for the Ewa Development Projects. In particular, Department of Housing and Community Development (DHCD) Ewa Villages and West Loch developments alone will require a total storage capacity of 3.5 million gallons (MG) in accordance with current Water System Standards. The DEIS should address the 2.0 MG of storage that will be required in addition to the proposed 1.5 MG reservoir.
3. Page 1-4: We have determined that a minimum 16-inch transmission main, instead of 12-inch pipeline, would be required to fulfill the sole requirements of DHCD's planned projects. Cost participation for the transmission main oversizing should be based on this minimum pipe size. Pipeline sizing is addressed in the Master Plan Water System Study, Ewa Development Projects.



COPY

Mr. Frederick J. Rodriguez
Page 2
November 24, 1995

4. Figure 4 and Page 7-4: The water requirements of the Ewa By Gentry development were included in the Ewa Water Master Plan for the Ewa Plain Water Development Corporation. The necessary improvements have been incorporated in the existing water system. Ewa By Gentry should not be included in the future demand projections used in designing the proposed water system for the Ewa Development Projects.

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

Very truly yours,

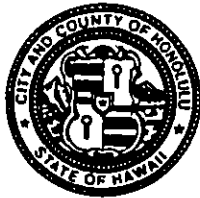
RAYMOND H. SATO
Manager and Chief Engineer

cc: ✓ Planning Department, City and County of Honolulu
Department of Housing and Community Development, City and County of Honolulu

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498

JEREMY HARRIS
MAYOR



ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 5, 1995

MEMORANDUM

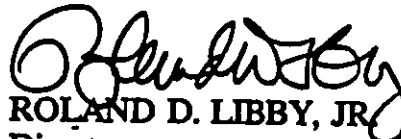
TO: Dona L. Hanaïke, Director
Department of Parks and Recreation

FROM: Roland D. Libby, Jr., Director

SUBJECT: Draft Environmental Impact Statement for Off-Site Water System,
Ewa Development Projects, Ewa, Oahu, Hawaii - Tax Map Keys: 9-1-001, 005,
007, 010, 012, 017 - 021, 025 and 028; 9-4-002; 9-4-137

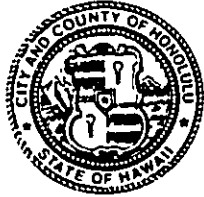
We have received your comments dated October 13, 1995 and we note the "no comments" determination.

Thank you for your continuing cooperation.


ROLAND D. LIBBY, JR.
Director

cc: Environmental Communications

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU HAWAII 96813



JEREMY HARRIS
MAYOR

DONA L. HANAIKE
DIRECTOR

ALVIN K. AU
DEPUTY DIRECTOR

October 13, 1995

TO: CHERYL SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

FROM: DONA L. HANAIKE, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT PURSUANT TO
CHAPTER 343, HRS, FOR OFF-SITE WATER SYSTEM FOR
EWA DEVELOPMENT PROJECTS
EWA, OAHU, HAWAII
TAX MAP KEYS 9-1-001, 005, 007, 010, 012, 017-021,
025 & 028; 9-4-002; 9-4-137

We have reviewed the draft environmental impact statement for the above-described project affecting Kunia Neighborhood Park and have no comments to offer.

Thank you for the opportunity to review this project.

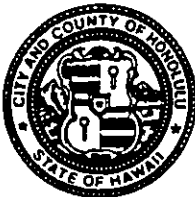
If you have any questions, please contact Lester Lai of our Advance Planning Branch at extension 4696.


For DONA L. HANAIKE
Director

DLH:ei

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498



JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

December 4, 1995

MEMORANDUM

TO: Charles O. Swanson, Director
Department of Transportation Services


FROM: Roland D. Libby, Jr., Director

SUBJECT: Draft Environmental Impact Statement for Off-Site Water System
for Ewa Development Projects

We have received your Department comments dated November 21, 1995 and we respond as follows:

1. The discussion on impacts on transportation that was not included in Section 7.2 on page 7.3 has been added in the Final EIS.
2. All construction plans that are planned for the City and County right-of-way will be provided to your Department for review and approval.

Thank you for your timely comments.


ROLAND D. LIBBY, JR.
Director

11-15-95 3:43

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

PACIFIC PARK PLAZA
711 KAPIOLANI BOULEVARD SUITE 1200
HONOLULU HAWAII 96813



CHARLES O. SWANSON
DIRECTOR

JEREMY HARRIS
MAYOR

11-22-95 3:43

10/95-04791R

November 21, 1995

MEMORANDUM

TO: CHERYL SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

FROM: CHARLES O. SWANSON, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR
OFF-SITE WATER SYSTEM FOR EWA DEVELOPMENT PROJECTS

We have reviewed the subject draft environmental impact statement and have the following comments:

1. The discussion of the impacts on transportation (Section 7.2) that should be on Page 7-3 is missing.
2. Our previous comments (memorandum dated July 13, 1995) responding to the environmental impact statement preparation notice are still applicable. Construction plans for all work within the City's right-of-way should be submitted to our department for approval.

Should you have any questions regarding these comments, please contact Faith Miyamoto of my staff at Local 6976.

f. Swanson

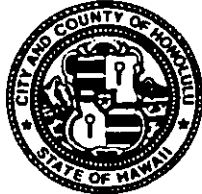
CHARLES O. SWANSON

cc: Department of Housing and Community Development
Environmental Communications

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498

JEREMY HARRIS
MAYOR



ROLAND D. LIBBY, JR.
Acting Director

ROBERT AGRES, JR.
Deputy Director

October 26, 1995

MEMORANDUM

TO: RANDALL K. FUJIKI, DIRECTOR AND BUILDING SUPERINTENDENT
BUILDING DEPARTMENT

FROM: ROLAND D. LIBBY, JR., ACTING DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
EWA DEVELOPMENT PROJECTS OFF-SITE WATER SYSTEM

Thank you for your comments dated October 13, 1995 regarding the subject project. We have reviewed the comments and respond as follows:

Egress and ingress to all access points along Fort Weaver Road will be maintained during the construction phase of the proposed project. All work is planned to be contained in the Right-of-Way along Fort Weaver Road and there will be no traffic disruption.

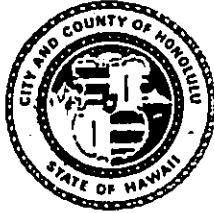
Sincerely,


ROLAND D. LIBBY, JR.
Acting Director

cc: Environmental Communications

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813



JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI
DIRECTOR AND BUILDING SUPERINTENDENT

ISIDRO M. BAQUILAR
DEPUTY DIRECTOR AND BUILDING SUPERINTENDENT

PB 95-762

October 13, 1995

Environmental Communications
P. O. Box 536
Honolulu, Hawaii 96809

Attn: Fred Rodriguez

Gentlemen:

Subject: Off-Site Water System - Ewa Development Projects
Draft Environmental Impact Statement (DEIS)

This is in response to your request to review and comment on the above subject matter.

The City and County of Honolulu operates a Mobile Satellite City Hall on Wheels (CHOW) in Ewa Beach. This mobile CHOW is presently located in the Ewa Beach Shopping Center near McDonald's. The location of the mobile CHOW vehicle is in the shopping center parking lot in an area fronting Ft. Weaver Road.

It appears from your Draft EIS that the proposed project calls for the installation of a new 30-inch water line in the vicinity of Ft. Weaver Road.

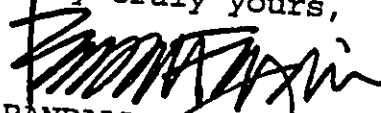
Please advise us if your construction activities will interfere with the continued operation of the Ewa Beach Shopping Center Mobile Satellite City Hall on Wheels. We request your assistance to minimize disruptions to the operation of the mobile CHOW so that it can provide reliable satellite city hall service to Ewa Beach residents.

OCT 19 1995

Environmental Communications
Page 2
October 13, 1995

Thank you for the opportunity to comment on the document.
Should there be any questions, please contact Douglas Collinson at
527-6375.

Very truly yours,



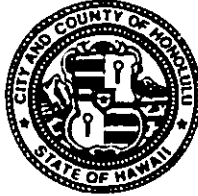
RANDALL K. FUJIKI
Director and Building Superintendent

cc: G. Tamashiro
Office of Information & Complaint

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5498

JEREMY HARRIS
MAYOR



ROLAND D. LIBBY, JR.
Acting Director

ROBERT AGRES, JR.
Deputy Director

October 30, 1995

MEMORANDUM

TO: Kenneth E. Sprague, Director and Chief Engineer
Department of Public Works

FROM: Roland D. Libby, Jr., Acting Director

SUBJECT: Draft Environmental Impact Statement (DEIS)
Off-Site Water System - Ewa Development Project
Tax Map Key: Various

We have received your Department comments dated October 13, 1995 and respond with the following:

1. Discharge of effluent from Hydrotesting/Disinfecting of the Water System will follow the requirements of the State Water Quality Standards. The Contractor will be required to apply for an NPDES permit to discharge the effluent into the Municipal Storm Water System (pursuant to Section 14-12.22, Revised Ordinance of Honolulu, as amended). This method of treatment or Best Management Practices are to meet State Water Quality Standards as identified in Section 11-54.4, HAR. The effluent will be dechlorinated by the application of sulfur dioxide, or other acceptable methods, before discharging into the storm water system.
2. The operation of the GAC plant will be incorporated into the FEIS.
3. Slurry and sludge are dried to a solid state and disposed through landfills, incineration or other methods acceptable to the Department of Public Works facilities. The probability of sludge is highly unlikely due to the adsorption qualities of the activated carbon.

Memorandum to Kenneth E. Sprague
October 30, 1995
Page 2

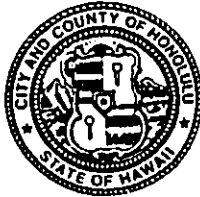
Carbon is changed every 6-8 months for BWS existing GAC treatment plants that run 24 hours a day. Change out is less frequent for plants that do not operate continuously over a 24-hour period. Removal and disposal of the carbon can be accomplished through private companies who dispose of hazardous wastes.


ROLAND D. LIBBY, JR.
Acting Director

cc: Environmental Communications

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813



JEREMY HARRIS
MAYOR

KENNETH E. SPRAGUE
DIRECTOR AND CHIEF ENGINEER

DARWIN J. HAMAMOTO
DEPUTY DIRECTOR

ENV 95-282

October 13, 1995

MEMORANDUM:

TO: CHERYL SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

FROM: *for* KENNETH E. SPRAGUE
DIRECTOR AND CHIEF ENGINEER *KES*

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
OFF SITE WATER SYSTEM - EWA DEVELOPMENT PROJECT
TAX MAP KEY: VARIOUS

We have reviewed the subject DEIS and have the following comments:

1. The DEIS should address our previous comments relating to discharge of effluent from hydrotesting, disinfection of water lines and reservoirs, and Best Management Practices (BMPs) to mitigate discharge of pollutants.
2. The DEIS should address the operation of the proposed Granular Activated Carbon (GAC) plant shown on Exhibit 3-C.
3. What BMPs would be employed for handling slurry, solids, etc. How often will material need to be removed? How will it be disposed of?

Should you have any questions, please contact Mr. Alex Ho, Environmental Engineer, at Local 4150.

cc: DHCD (Gail Kaito)
Environmental Communications (Fred Rodriguez)

OCT 16 1995

EXHIBIT A

Social Impact Assessment

For

Ewa Offsite Water System

EarthPlan
September, 1995

**Social Impact Assessment
for 'Ewa Off-Site Water System**

**Prepared for Environmental Communications
by Earthplan
September 1995**

EXHIBIT A

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1. Background and Introduction

The City Department of Housing and Community Development (DHCD) and the Honolulu Board of Water Supply (BWS) propose water system improvements to serve DHCD housing projects and the future needs of the BWS in 'Ewa, O'ahu, Hawaii. Implementation of the project requires the issuance of State and City and County permits. In addition, revisions to the Development Plan Land Use and Public Facilities Maps are required.

An Environmental Impact Statement (EIS) is being prepared as part of the application process for these permits. This report contains the Social Impact Assessment (SIA) which was prepared in conjunction with the EIS. The SIA is summarized in and appended to the EIS.

1.1 Report Preparation and Organization

This report was prepared by Earthplan, whose offices are located at 81 South Hotel Street, Suite 211 in Honolulu. Berna Cabacungan was project manager and principal analyst and writer. Independent contractor Traver Carroll provided research assistance in all portions of the report.

The remaining portion of Section 1 describes the proposed improvements. Section 2 provides an overview of the existing community and Section 3 discusses policies and projects which will affect the future of the existing community. Potential social impacts are presented in Section 4.

1.2 Description of the Proposed Project

The proposed water system is intended to meet the current and future needs of City-sponsored residential communities in 'Ewa and to upgrade the overall existing water system for future regional needs.

Proposed actions include the following components:

- **Wells and Pump Structure**

Three wells, each with a capacity of 1,050 gallons per minute (GPM), are proposed to be developed on Heahea Street in the Royal Kunia planned community in Waipahu. The proposed action includes an overflow tank to meet the requirements of the three wells.

CORRECTION

THE PRECEDING DOCUMENT(S) HAS
BEEN REPHOTOGRAPHED TO ASSURE
LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

Contents

1. Background and Introduction	3
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1. Background and Introduction

The City Department of Housing and Community Development (DHCD) and the Honolulu Board of Water Supply (BWS) propose water system improvements to serve DHCD housing projects and the future needs of the BWS in 'Ewa, O'ahu, Hawaii. Implementation of the project requires the issuance of State and City and County permits. In addition, revisions to the Development Plan Land Use and Public Facilities Maps are required.

An Environmental Impact Statement (EIS) is being prepared as part of the application process for these permits. This report contains the Social Impact Assessment (SIA) which was prepared in conjunction with the EIS. The SIA is summarized in and appended to the EIS.

1.1 Report Preparation and Organization

This report was prepared by Earthplan, whose offices are located at 81 South Hotel Street, Suite 211 in Honolulu. Berna Cabacungan was project manager and principal analyst and writer. Independent contractor Traver Carroll provided research assistance in all portions of the report.

The remaining portion of Section 1 describes the proposed improvements. Section 2 provides an overview of the existing community and Section 3 discusses policies and projects which will affect the future of the existing community. Potential social impacts are presented in Section 4.

1.2 Description of the Proposed Project

The proposed water system is intended to meet the current and future needs of City-sponsored residential communities in 'Ewa and to upgrade the overall existing water system for future regional needs.

Proposed actions include the following components:

- **Wells and Pump Structure**

Three wells, each with a capacity of 1,050 gallons per minute (GPM), are proposed to be developed on Heahea Street in the Royal Kunia planned community in Waipahu. The proposed action includes an overflow tank to meet the requirements of the three wells.

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- **Transmission Mains**

The proposed action includes two transmission mains. First, the City proposes to install a 16-inch pipeline from the well pump station through the Village Park community to the existing Kunia reservoir site near the H-1 Interstate Highway - Kunia Road off-ramp. A second line is proposed from Farrington Highway to Pu'uloa Road in 'Ewa Beach.

- **Reservoir Site Improvements**

The City proposes to add a 1.5 MG reservoir tank next to the existing 3.0 MG tank north of Kunia Road. Also under consideration is a Granular Activated Carbon (GAC) water treatment plant which would be added if necessary.

The subject land are designated for agriculture and urban use on the State Land Use Boundary Maps, and are zoned for agricultural and residential purposes. The alignment is located primarily on land owned by the City and County of Honolulu and the State of Hawai'i. A portion of the alignment is owned by the Estate of James Campbell, which has granted an easement to the BWS.

The project will be designed and constructed within three to five years.

2. Profile of the Existing Community

The Study Area for this SIA includes two Neighborhood Board areas in which the proposed water system improvements are located. The pump improvements and reservoir are located in the Waipahu Neighborhood Board area, in the community of Village Park and Royal Kunia. The Village Park/Royal Kunia communities comprise Sub-District 1 of the Waipahu Neighborhood Board area, and census information is provided for these immediate communities and the overall Waipahu Neighborhood Board.

The transmission lines and the service communities are in the 'Ewa/'Ewa Beach Neighborhood Board area. The 'Ewa/'Ewa Beach Neighborhood Board area covers the eastern half of the previously-designated 'Ewa Neighborhood Board area, which had included the entire 'Ewa plain and coastline between West Loch and Kahe Point. To accommodate the current and anticipated population growth, the City divided the previous board into two areas: the 'Ewa/'Ewa Beach (No. 23) and Kapolei/Makakilo/Honoka'i Hale/Nanakai Gardens (No. 34) Neighborhood Boards.

This change was implemented in 1995, and aggregate census and population statistics are readily available only for the larger 'Ewa Neighborhood Board area. This SIA therefore provides a profile of the 'Ewa Neighborhood Board area.

2.1 Population Trends

The Study Area has experienced major growth in the 1980s. The Waipahu Neighborhood Board area experienced major growth; its population grew from 34,000 persons in 1980 to 51,000 in 1990. This represents a 51 percent increase, and an average annual growth rate of 4.2 percent.

The 'Ewa Neighborhood Board area grew at an annual rate of 1.9 percent between 1980 and 1990, when its population increased from 35,600 persons in 1980 to 43,000 in 1990. This represents a 21 percent increase.

2.2 Age, Ethnicity and Labor Force

In 1990, the Study Area accounted for eleven percent of O'ahu's population of 836,231 persons. Of the Study Area's 94,000 residents, 54 percent, or 51,000, lived in the Waipahu Neighborhood Board area. The remaining 43,000 lived in the 'Ewa Neighborhood Board area. Approximately 7,600 persons lived in the Village Park/Royal Kunia communities. *Table 1* contains age and ethnicity information on the Study Area.

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Table 1: Median Age, Ethnicity and Labor Force Participation

	O'ahu	Waipahu Neighborhood Board Area No. 22		'Ewa Neighborhood Board Area No. 23
		Total	Village Park and Royal Kunia ^a	
Population	836,231	51,295	7,593	42,967
Median Age	32.3 years	29.6 years	29.4 years	27.8 years
Ethnicity (in percent)				
Caucasian	31.6	17.4	22.9	40.1
Chinese	7.6	3.3	6.0	1.9
Filipino	14.4	36.2	26.2	28.4
Japanese	23.3	22.8	26.2	9.8
Korean	2.7	1.4	3.0	1.3
Hawaiian	11.0	9.9	9.7	9.5
Other	9.4	8.9	6.0	9.0
Labor Force Participation (in percent of total residents 16 years and older)				
Civilian Labor Force	62.9	69.3	77.4	58.7
Armed Forces	8.2	5.1	7.7	17.0
Not In The Labor Force ^b	28.9	25.7	15.0	24.3
Unemployment rate	3.5	4.4	2.3	5.3

- a. Royal Kunia and Village Park comprise Sub-District 1 of the Waipahu Neighborhood Board No. 22
- b. This category includes mostly students, retired workers, women who work at home, seasonal workers during off season, institutionalized persons, and persons doing incidental unpaid family work.

Source: U.S. Bureau of the Census, 1990 User-Defined Areas Program.

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The populations of 'Ewa and Waipahu, including Village Park and Royal Kunia, tended to be younger than the islandwide population. Compared to O'ahu's median age of 32.3 years, 'Ewa's median was low at 27.8 years; Waipahu's median age was 29.6 years

Both Neighborhood Board areas had ethnic characteristics different from the islandwide norms. Compared to O'ahu's 31.6 percent residents of Caucasian ancestry, 'Ewa had a higher proportion (40 percent), and Waipahu had a significantly lower proportion (17 percent). Both Waipahu and 'Ewa had high proportions of Filipino residents (with, respectively, 36 and 28 percent) as compared to O'ahu (14 percent).

'Ewa had proportionally fewer Japanese residents (ten percent), compared to both Waipahu (23 percent) and O'ahu (23 percent), and there were fewer residents of Chinese ancestry in both Waipahu (three percent) and 'Ewa (two percent).

Labor force statistics from 1990 indicate that the unemployment rates for 'Ewa and Waipahu were higher at 5.3 percent and 4.4 percent, respectively, than the islandwide rate of 3.5 percent. On the other hand, the unemployment rate in Village Park and Royal Kunia's rate was a low 2.3 percent.

Of O'ahu residents 16 years and older, 63 percent participated in the civilian labor force, and another eight percent were in the armed forces. 'Ewa's civilian labor force participation (59 percent) was slightly lower than that of O'ahu, but its participation in the armed forces was high (17 percent) due to the presence of the Naval Air Station at Barbers Point and the Iroquois Point/Pu'uoloa Military Family Housing.

Waipahu's civilian labor force participation rate was high at 69 percent, and Village Park/Royal Kunia had a very high 77 percent. The communities of Village Park/Royal Kunia also had very low proportion of those not in the labor force. Fifteen percent of Village Park/Royal Kunia's labor force did not participate at the time of census, compared to 29 percent islandwide.

2.3 Housing and Household Characteristics

In 1990, there were nearly 26,000 housing units in the Study Area. This accounted for approximately nine percent of the 281,683 housing units on O'ahu.

As indicated in *Table 2*, home ownership was prevalent in the Study Area. While 'Ewa area's 52 percent was higher than the islandwide 49 percent, the Waipahu area's 60 percent and 94 percent in Village Park/Royal Kunia's were significantly more so.

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Table 2: Housing and Household Characteristics

	O'ahu	Waipahu Neighborhood Board Area No. 22		'Ewa Neighborhood Board Area No. 23
		Total	Village Park and Royal Kunia ^a	
Housing Units	281,683	14,721	2,227	11,721
Owner-occupied	49.0%	60.0%	93.8%	52.6%
Renter-occupied	45.2%	37.4%	16.4%	49.9%
Vacant	5.8%	2.7%	6.2%	2.5%
Units Per Housing Structure (as percent of total units)				
Detached	44.9	56.7	86.9	58.7
Attached	10.2	5.4	0.7	20.0
2 to 9 units	13.4	20.8	6.9	16.8
10 or more units	30.0	15.9	4.4	2.8
Other	1.4	1.2	1.2	1.7
Households				
Number of households	265,625	11,449	13,921	2,130
Household size (in persons)	3.02	3.68	3.56	3.65
Median household income	\$40,851	\$48,482	\$56,711	\$40,831
Family households (as percent of total households)	75.1%	84.8%	89.2%	88.2%

a. Royal Kunia and Village Park comprise Sub-District 1 of the Waipahu Neighborhood Board No. 22

Source: U.S. Bureau of the Census, 1990 User-Defined Areas Program.

Village Park and Royal Kunia also had a very high proportion of single family detached

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units; at 87 percent it was significantly higher than the islandwide share of 45 percent. The 'Ewa and Waipahu proportions of single family homes, at 59 percent and 57 percent, respectively, were also significantly higher than the Oahu proportion.

With the high level of single family homes comes a low proportion of multi-family units. Thirty percent of the islandwide housing stock were in structures of ten or more units. Sixteen percent of Waipahu's housing units were in medium and high density structures, while only three percent of 'Ewa's units were in this category. Four percent of the housing units in Village Park/Royal Kunia were in structures with ten or more units.

On the average, households were large in the Study Area. In 1990, O'ahu's average household size was 3.02 persons. 'Ewa had an average of 3.65 persons per household, while Waipahu had an average of 3.68; Village Park and Royal Kunia had an average of 3.56 persons per household.

Family households are those in which members are related to each other. Overall, the Study Area tended to be more family oriented than O'ahu, where three-fourths of the islandwide households were family households. In 'Ewa, 88 percent of the total household were family households; in Waipahu, 85 percent.

The median household incomes within the Study Area differed significantly. While the 'Ewa area median household income (\$40,831) was similar to the O'ahu median (\$40,581), the Waipahu area median was high (\$48,482). In Village Park/Royal Kunia, the median household income was significantly high at \$56,711.

3. Forces for Change

This section extends the baseline data established in Section 2 by exploring what kinds of changes are likely to occur in the Study Area. Section 3.1 presents information on the City and County General Plan. A discussion of the Central O'ahu and 'Ewa Development Plans is presented in Section 3.2.

3.1 Public Policies

The General Plan for the City and County of Honolulu, as amended by the City Council in 1992, contains long-range objectives and broad policy statements directed toward improving the general welfare and prosperity of the people of O'ahu. The General Plan reflects the long-range social, economic, environmental and design objectives and presents various strategies to achieve desired goals.

The General Plan encourages the development within the secondary urban center at Kapolei and the 'Ewa and Central O'ahu urban fringe areas to relieve development pressures in the remaining urban fringe areas and to meet housing needs not readily provided in the primary urban center.

By 2010, General Plan population guidelines estimate that the 'Ewa area could house between twelve and 13.2 percent of islandwide population, and Central O'ahu could capture between 14.9 and 16.5 percent. *Table 3* contains population distribution guidelines.

Table 3: Population Distribution Guidelines by Development Plan Area

Development Plan Area	Population Distribution	2010 Population Range
PUC	45.1% to 49.8%	450,774 to 497,751
'Ewa	12.0% to 13.3%	119,940 to 132,934
Central O'ahu	14.9% to 16.5%	148,926 to 164,917
East Honolulu	5.3% to 5.8%	52,974 to 57,971
Ko'olaupoko	11.0% to 12.2%	109,945 to 121,939
Ko'olaupoko	1.3% to 1.4%	12,994 to 13,993
North Shore	1.6% to 1.8%	15,992 to 17,991
Wai'anae	3.8% to 4.2%	37,981 to 41,979
Total O'ahu	95.0% to 105.0%	949,525 to 1,049,475

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3.2 Development Plans

3.2.1 Central O'ahu Development Plan

The Central O'ahu Development Plan area consists of the proposed Waiawa Gentry community, the towns of Waipahu, Mililani, and Wahiawa, and the residential communities of Village Park, Waipio Acres, Melemanu Woodlands, Seaview/Crestview, and the developing Mililani Mauka, Royal Kunia, and Waikele.

The region's dominant land use is agriculture, followed by military activities, with increased development of lands for residential use. Emphasis is given toward substantially maintaining lands in agriculture. Height controls for Central O'ahu range from 25 feet to 60 feet for medium-density apartment, commercial, and industrial uses. Development priorities for Central O'ahu include public facilities improvements (such as wastewater management, transportation, and potable water), and provision of affordable housing which conforms to the General Plan distribution of residential population table for Central O'ahu.

Gentry Homes has submitted an application to amend the Development Plan land use map for approximately 1,575 acres of their lands on Waiawa Ridge. An application was also submitted for Phase 2 of the Mililani Technology Park; this project is outside the SIA Study Area.¹

Approximately 130,474 persons lived in Central O'ahu in 1990.² If Central O'ahu were to capture 16.5 percent of the 2010 islandwide population, there could be 34,400 more people living in this area at that time, which translates into a 26 percent increase over the 1990 population.

3.1.2 'Ewa Development Plan Area

The 'Ewa Development Plan area encompasses the coral plain which stretches from the Central O'ahu district boundary at Waipahu and Pearl Harbor to Nanakuli. Relevant general plan policies for 'Ewa encourage the development of a secondary urban center to relieve development pressures in the urban-fringe and rural areas.

To address the urbanization activities occurring in the region, policies refer to 'Ewa in general and to several special design areas for the West Beach resort, Ewa Villages, Ewa Marina, and City of Kapolei, specifying view corridors, building heights, architectural features, densities, and land uses for the area. General height limits of structures in

1. *City and County of Honolulu Planning Department, 1995a.*

2. *City and County of Honolulu Planning Department, 1995c.*

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'Ewa range from 25 feet to 150 feet for certain commercial and resort areas. Development priorities include public facility improvements to support development of the secondary urban center, affordable housing, public structures, and secondary employment centers.

Two applications for Development Plan land use amendments are being processed during the 1995 review period. Schuler Homes/Hawaiian Trust Company submitted an application for the East Kapolei project, which is a master planned community comprising residential, park, commercial, and public facility uses on approximately 1,044 acres near West Loch Estates. The Estate of James Campbell submitted an application for a 20-acre Laulani Commercial Center near the Ewa Gentry community.³

In 1990, the 'Ewa Development Plan area population was counted at 42,983.⁴ If 'Ewa were to capture 12.2 percent of the 2010 islandwide population, there could be 89,900 persons more people living in this area. This means the population is allowed to triple between 1990 and 2010.

3.1.3 City and County Development Plan Revisions

In October 1994, the City and County of Honolulu, Planning Department initiated a program to revise O'ahu's Development Plans. The program, based on the City Charter provisions adopted in 1992, is intended to accomplish two purposes, as follows:

1. Revise the form and content of the plans to conform to the Charter mandate and provide policy guidelines for various development initiatives; and
2. Review the plans' existing policies in conjunction with current regional occurrences, community problems, and opportunities, and to propose policy changes and revisions as appropriate.

The 'Ewa and Central O'ahu plans are the first to be revised. Draft plans are currently available for review by community groups and public agencies, with implementation expected in late 1996, after proceeding through the City Council. Concepts being considered include maps depicting urban growth boundaries for each Development Plan area, and regional and community vision statements with implementation through community design principles, guidelines and suggested standards; conceptual mapping of a transit corridor with high density residential areas; and conceptual mapping of urban

3. *City and County of Honolulu, 1995b.*

4. *City and County of Honolulu, 1995c.*

uses within the urban growth area with suggested phasing of public investment in support of development.

The draft 'Ewa and Central O'ahu Development Plans redefine the visions for these areas, and articulate an "urban growth boundary" to protect certain agricultural and conservation lands, and to provide adequate lands for urban development. The projects which would be served by the proposed water system improvements are not affected by proposed revisions in either Development Plan.

4. Potential Social Impacts

This section identifies potential social impacts which may occur due to implementation of the proposed water system improvements. Section 4.1 discusses the project's long term effect on the Study Area's need for water, and Section 4.2 looks at the relationship to public policies and plans. Section 4.3 identifies possible neighborhood impacts.

4.1 Long Term Effect on Study Area Need for Water

Much of the non-potable water requirements in the Study Area are currently met by water from the Waiahole Ditch system. The Ditch is a 25.3-mile system comprising tunnels, lined ditches, and siphons ending at the terminal reservoir in Honouliuli. The State Commission on Water Resource Management (CWRM) designated Windward O'ahu as a Water Management Area in July 1992. This action triggered the need for Water Use permit, and anyone who wants to use this water needs to make a claim for the withdrawal, diversion, impoundment and consumption of this water. No permit is required for domestic consumption by individual users.

As of May 1995, there were several applications pending before CWRM for use of the Waiahole Ditch water. These applications either ask for water to support uses on the Leeward side of O'ahu for agricultural, public facility and golf course irrigation, or to support Windward agricultural and cultural activities. They are summarized as follows:

1. Water Use Permit Applications

Nine applicants, based on the Leeward side, have filed a joint application for use of groundwater sources in the Waiahole Ditch system. In addition, the Kamehameha Schools/Bishop Estate and Dole Food Company have filed separate water use permits for use on the Leeward side of the island.

2. Reservations of Water

Applications to reserve water for specific reasons were submitted by the State Department of Agriculture (for Leeward purposes); the Office of Hawaiian Affairs (for Windward purposes) and the Kahalu'u Neighborhood Board/Waiahole - Waikane Community Association/Hakipu'u Ohana (for Windward purposes).

3. Petitions to Amend the Instream Flow Standards

The Kahalu'u Neighborhood Board, Waiahole - Waikane Community Association and Hakipu'u Ohana also filed an application to amend the standards of Waiahole, Waikane, Hakipu'u Streams by restoring the flow of these streams to the

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amount historically taken by the Waiahole Ditch system.

The proposed 'Ewa water system improvements have an indirect relationship to the Waiahole Ditch issue. If the Waiahole Ditch water flowing to the Leeward side is substantially reduced or terminated, Leeward users of non-potable water would need to find alternative sources of water. New wells would need to be drilled, other streams may need to be diverted, or wastewater facilities would need to be upgraded for re-use options.

If the selected alternative is to drill wells, then non-potable water users would directly compete with residential use of potable water. The project helps ensure that the potable water requirements of the project's service area can be met, regardless of the Waiahole Ditch water decision.

4.2 Consistency with Public Policies and Plans

4.2.1 Regional Perspective

Public policies clearly advocate the development of the 'Ewa region into the County's secondary urban center. Kapolei is envisioned as having an urban center with facilities for commerce, finance, government services and industrial activities. The major components include several commercial and office complexes, the existing James Campbell Industrial Park and the new 800-acre Kapolei Business Park, the Barbers Point Harbor, the Ko'Olina Resort, and the City of Kapolei's numerous residential neighborhoods. By 1994, there were 16,301 housing units in Kapolei; full build-out is estimated at 52,840 units.⁵

Around Kapolei are several communities which are continuing to grow, or which are scheduled for implementation. These include:

- **Makakilo**

Mauka of Kapolei, Makakilo began as a small residential community in the early 1960s. Today, Makakilo is home to about 13,000 residents, and is continuing to grow. Its developer, Finance Realty, is planning to increase the number of housing units from the existing 3,700 to 6,259 homes by 2000.

- **Westview at Makakilo Heights**

Developer Schuler Homes, Inc., is building 500 townhouses in two phases.

5. Personal communication with David Rae, Manager of Community and Government Services at the Estate of James Campbell, June 6, 1995.

Phase 1, which includes 148 units, was completed in 1993. The 172-unit Phase 2 is expected to be completed this year.

- **Kapolei Knolls**

Finance Realty is developing this 368-unit residential project in two phases.

- **Maka'iwa Hills**

Located mauka of Ko 'Olina and the residential communities of Honoka'i Hale and Nanakai Gardens, Maka'iwa Hills includes 4,110 residential units, the Kapolei Regional Mall, and public facilities. This project is scheduled to begin construction in 1996.

- **West Loch**

The City and County of Honolulu's West Loch community was completed in 1994, and comprises 1,600 residential units, including 150 retirement rentals, an 18-hole municipal golf course and a 40-acre shoreline park.

- **Ewa Marina**

Ewa Marina is a planned 1,100-acre community which includes a marina with 1,400 boat slips, 950 hotel units, a commercial complex, a golf course and 4,850 residential units. Final zoning approval was granted to developer HASEKO (Ewa), Inc., in 1993, and the project is pending permitting for the marina.

- **Ewa by Gentry**

Developed by Honolulu-based Gentry Development Company, this project is on a 1,000-acre project site. Ewa by Gentry includes six neighborhoods, and 3,775 housing units have been completed to date. Full build-out is targeted at 8,320 housing units by 2000. ⁶

- **Ewa Villages**

The City has been revitalizing existing homes in the various 'Ewa plantation villages, and is planning to build 1,300 new units. To date, 113 new homes have been built and 270 existing homes are being renovated. The total development program includes 1,700 units is to be completed by 1999. ⁷

6. Personal communication with Nona Forrest, Project Development Specialist with the Gentry Companies, May 26, 1995.

4.2.2 Project's Role In the Development of the 'Ewa Region

The maintenance of an adequate water supply is a requisite service for any community. In the 'Ewa region, the timely provision of this service is especially crucial to ensure that community objectives, as expressed in the City General Plan, can be achieved. The proposed water system improvements are designed to meet the needs of the growing 'Ewa region and are consistent with those included in the City Department of Housing and Community Development 'Ewa Water System Master Plan. This plan identifies proposed land uses for DHCD projects and BWS's projected future service areas, and proposes water system improvements to serve these projects and areas.

The proposed improvements will provide potable water to the following DHCD projects:

- **West Loch**

The project will service 593 homes in West Loch Phase 1 and 1,014 homes in Phase 2. Based on 'Ewa's 1990 average household size of 3.65 persons, the proposed water system improvements may positively impact an estimated 5,860 West Loch residents.

- **'Ewa Villages**

The project will service approximately 2,240 homes in the rehabilitated and new homes in 'Ewa Villages; approximately 8,180 residents will be served in 'Ewa Villages.

- **Fairways**

The proposed water system improvements is also intended to service 1,500 residential units in the proposed Fairways project. An estimated 5,470 residents may be affected in the Fairways community.

In all, almost 20,000 residents living in DHCD-sponsored residential communities in 'Ewa may be positively affected by the proposed improvements.

The aforementioned water master plan City also identifies future BWS service responsibilities, which includes an estimated 200 acres of residential use, an elementary and the BPNAS site. Additionally, BWS will be responsible for serving nine sites at various locations in 'Ewa Beach. Eight of them, totaling 296 acres, will be used for residential development and parcel sizes range from 2.6 to 174 acres. There is also one lot of 188 acres

7. Personal communication with Avis Kamimura, Project Manager in the City Department of Housing and Community Development, May 25, 1995.

scheduled for commercial development.

4.3 Impacts on Neighboring Communities

4.3.1 Description of Nearby Uses

The three proposed wells, pump structure, and the pump control building will be located in the Diamond Head-makai corner of the Kunia Neighborhood Park located on Heahea Street in the Village Park community. The transmission line will be routed along Ha'alau Street to Ka'aholo Street to Kupuna Loop, then makai on Kunia Road to the proposed expanded reservoir site adjacent to the H-1 Interstate Highway-Kunia Road off-ramp.

The route through the Village Park community abuts single family detached residences, one low density multi-family residence, the Royal Kunia Park and Ride, and the makai end of the new Royal Kunia commercial/shopping area. Kunia Road is an arterial highway connecting the Ewa end of Waipahu and the Ewa plain with Wahiawa and Schofield Barracks.

The proposed improvements include using existing transmission lines from the reservoir to the new Farrington Booster Pump Station on Farrington Highway 'Ewa of Old Fort Weaver Road. A new transmission line will then run makai from the booster station through sugar cane land along a cane haul road to the vicinity of the unused Mango Tree Road right-of-way, then follow the right-of-way Diamond Head across Fort Weaver Road next to the Phase 2 portion of the West Loch community. The transmission line will then run makai along Fort Weaver Road crossing Renton Road, the intersection of Kolowaka Drive, Geiger Road, the Hawaii Prince Golf Course entrance, and into 'Ewa Beach.

The land along this route is used mostly for agricultural purposes up to Fort Weaver Road, at which point the character becomes residential. There is a substantial set-back along Fort Weaver Road. Specific residential uses are as follows:

- Single family detached and attached homes of West Loch Phase 2;
- the Ewa Family Center, Child and Family Services (including Hale O Ulu, private school);
- low density elderly apartment homes of the West Loch community;
- single family detached homes in the revitalized Ewa Villages;
- single family detached and attached homes and low density apartments in Ewa by Gentry; and

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- older single family detached homes in 'Ewa Beach.

Commercial uses along this route include a gas station, a store, an auto repair service at Renton Road, and the Hawaii Prince Golf Course.

4.3.2 Project Impacts

The proposed project is expected to generate short term neighborhood impacts typical of construction activities, but is not anticipated to have significant long-term impact on the neighboring uses.

Adverse effects will be unavoidable during the construction period. These effects include construction-related noise and airborne emissions, and the possible alteration in traffic circulation patterns. Those who may be affected include residents of nearby properties, motorists, and pedestrians. The discomfort and inconvenience of noise and dust may be particularly a problem for those who are home, such as the elderly in the elderly rentals, for clients and employees in the social service agency and for those in school.

This short term impact can be mitigation by the contractor's observance of all federal, State, and County rules and regulations concerning air, water, and noise pollution, and general public safety. Further, traffic inconvenience will be mitigated if construction occurs during non-peak traffic hours.

The only long-term impact on the neighboring communities is related to possible view changes, but these changes are expected to be insignificant. At project completion, the wells, pumps, and pump control station at Kunia Neighborhood Park will be visible. They will be buffered by bordering landscaping to provide visual compatibility with the park. Also, the new reservoir on Kunia Road will not alter the character of the area, since the new structure will be adjacent to an adjacent reservoir. The water transmission lines alignment will be below grade, so no impact will occur along the route.

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