

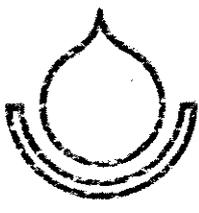
REVISED
ENVIRONMENTAL IMPACT STATEMENT

FOR

42-INCH WATERLINE FROM WAIHEE BOOSTER
STATION TO INTERSECTION OF LIKELIKE
HIGHWAY AND KAMEHAMEHA HIGHWAY

KANEIHOE, KOOLAUPOKO, OAHU, HAWAII

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU



SEPTEMBER 1980



EXECUTIVE CHAMBERS

HONOLULU

GEORGE R. ARIYOSHI
GOVERNOR

October 28, 1980

Mr. Donald A. Bremner, Chairman
Environmental Quality Commission
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Mr. Bremner:

Subject: Environmental Impact Statement for 42-Inch Waterline
from Waihee Booster Station to Intersection of Likelike
Highway and Kamehameha Highway, Kaneohe, Koolauoko, Oahu

Based upon the recommendation of the Office of Environmental Quality Control, I am pleased to accept the subject document as satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes. This environmental impact statement will be a useful tool in the process of deciding whether or not the action described therein should or should not be allowed to proceed. My acceptance of the statement is an affirmation of the adequacy of that statement under the applicable laws, and does not constitute an endorsement of the proposed action.

When the decision is made regarding the proposed action itself, I expect the proposing agency to weigh carefully whether the societal benefits justify the environmental impacts which will likely occur. These impacts are adequately described in the statement, and, together with the comments made by reviewers, provide a useful analysis of alternatives to the proposed action.

With warm personal regards, I remain,

Yours very truly,


George R. Ariyoshi

cc: Honorable Kazu Hayashida

11/3/80

REVISED
ENVIRONMENTAL IMPACT STATEMENT
FOR
42-INCH WATERLINE FROM WAIHEE BOOSTER
STATION TO INTERSECTION OF LIKELIKE
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CITY AND COUNTY OF HONOLULU



SEPTEMBER 1980

CITY AND COUNTY OF HONOLULU
BOARD OF WATER SUPPLY

REVISED
ENVIRONMENTAL IMPACT STATEMENT
FOR
42-INCH WATER LINE FROM WAIHEE BOOSTER STATION
TO INTERSECTION OF LIKELIKE HIGHWAY AND KAMEHAMEHA HIGHWAY
KANEEOHE, KOOLAUPOKO, OAHU, HAWAII

THIS ENVIRONMENTAL DOCUMENT IS SUBMITTED
PURSUANT TO CHAPTER 343, HRS

PROPOSING AGENCY:

Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

BOARD MEMBERS:

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KAZU HAYASHIDA
Manager and Chief Engineer

Date

9/24/80

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ACCEPTING AUTHORITY:

Governor, State of Hawaii

INTRODUCTION AND SUMMARY

The Board of Water Supply, City and County of Honolulu plans to install about 5 miles of a 42" diameter water transmission line in Kaneohe, primarily along Kahekili Highway, beginning in 1981. The line will serve as a major link in the Oahu island-wide water transmission network. Figure 2 shows the relationship of the proposed project to the existing island wide transmission system.

Adverse environmental impacts are considered to be principally short range impacts of traffic interference and noise during construction.

Long term impacts include:

1. Commitment of the space required by the pipeline.
2. Provision for adequate capacity during peak hour pumpage thru the transmission system.
3. Reduction of pipeline pressures during peak pumpages.
4. Insurance of continuity of water service to major suburbs of Kaneohe, Kailua and Waimanalo.
5. Provision of one element of a water transmission network which supports the City and County of Honolulu General Plan.

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I. PROJECT DESCRIPTION

Location

The proposed project is located in the Koolaupoko district of Oahu, principally along Kahekili Highway from the Waihee Line Booster Station to the intersection of Likelike Highway and Kamehameha Highway as shown in Figure 1.

Objectives

A 42" transmission main will provide a basic infrastructure element necessary to support the Honolulu General Plan. It will also serve as a substantial link in the island-wide transmission network. (Figure 2)

A 30" Spur line at the Kahaluu Tunnel is needed as a standby (and possible eventual replacement) for a short section of the existing distribution system. Some sloughing and cave-ins at the top of a tunnel carrying the existing line have caused concern about jeopardy to the line itself.

Technical Description

This project proposes to install approximately 28,350 linear feet of 42-inch water main and appurtenances along the route shown in Figure 1. A 2,300-foot 30-inch water main spur, perpendicular to Kahekili Highway near the Kahaluu Utility tunnel, will be included. Construction of the 42" line will begin near the Waihee Line Booster Station and end at the intersection of Likelike Highway and Kamehameha Highway.

Most of the proposed water line will be located within existing public right-of-ways which are in conformance with Roadway Master Plans for the City and County of Honolulu and the State of Hawaii.

The 42" line, will cross several streams, namely Kahaluu Stream and Heeia Stream at Kahekili Highway and Kamooalii Stream at Likelike Highway. At Kahaluu Stream, the water main will be constructed under the invert of the stream keeping minimum cover below the invert of the future channel section. At the Heeia Stream and Kamooalii Stream crossings, the water line will be routed under or over the existing box culverts depending on the depth of cover over the existing culverts. The 42" main will be installed primarily under the highway shoulder. In the short distance through which the line traverses Kapunahala Subdivision, installation will be under existing asphalt pavement.

The material expected to be used for the water main will be ductile iron or concrete cylinder pipe, or combinations thereof. At both termini of this project, the new main will connect to existing 30-inch water mains.

The water line will be designed in accordance with the Water System Standards of the Board of Water Supply. Included will be necessary valves, valve boxes and manholes, jacketing and all other appurtenances necessary for operation of the system. Trenching operations will meet minimum cover requirements. Trench widths of 66 inches will be used with a minimum water line depth of about 6.5 feet to the pipe invert to provide the required 3-foot cover over the pipe. When encountering utility lines, the main will go under if utility lines are less than 7.0 feet in depth and over if the lines are deeper than 7.0 feet. Excavated material not needed for refill will be hauled away.

Cost & Timing

Construction is planned in two parts and is estimated to take four years to complete. Part A include the connection at the Waihee Booster Line to the Kahaluu Tunnel Area. Part B include the connection at the Kahaluu Tunnel to Kaneohe Bay Drive (4 Phases). Construction of the first part is scheduled to begin in 1981. Cost of the project is estimated at \$8,750,000. Monies for the entire project is expected to be funded from the Department's Capital Improvement Projects Fund.

Water Facilities Requirements

The nature of water supply and transmission facilities requires long range plans. Accordingly, the Board of Water Supply in 1976 developed a Windward Oahu facilities plan (sources and transmission lines) for the next decade, based on estimates of demand to year 2020. This plan is reviewed regularly and is updated as required. Although the plan is for the Windward District, it must be understood that water supply problems are inter-related to other areas of Oahu, especially to metropolitan Oahu. (See Figure 2). Figure 3 shows the Windward District Water System and its link with existing and proposed sources, and Table 1 list the existing and proposed water development facilities and their yields, in the area.

The need for the 42" waterline is twofold:

- (I) From a short-range viewpoint the additional transmission capacity will provide for operational reliability and flexibility.

- (2) From a long-range viewpoint, the line is necessary as a vital link in transporting water from new sources being planned along the Windward coast to the Windward area and to Honolulu.

Current needs could be met with a line size smaller than 42". However, in view of future requirements, and the long service life expected of major water lines (30 to 40 years or more), it is more economical (and less disruptive to the community) to install the larger line at this time.

Current projections indicate an increase in water demand from the 17 million gallons per day in 1979 up to about 22 mgd in the year 2000 in the Windward District. The water demand projection is based on a year 2000 population of about 132,000. The total projected flow for all Windward Sources is 37 mgd with 15 mgd transported to Honolulu. Water conveyed by the system would be for residential, commercial, industrial, agricultural and other diverse uses.

Taking into account the needs for peak flows, for fire flow and consumptive use, the 42" line has been sized to meet that demand projection.

Along Kahekili Highway from Waihee Line Booster Station southward for about 10,000 feet there is an existing 30" transmission main. The proposed 42" line will provide more reliability of service in the event of an emergency outage of the 30" line, especially to the areas of Kailua, Maunawili, Olomana, and Waimanalo.

TABLE 1

EXISTING AND PROPOSED WATER DEVELOPMENT FACILITIES
WITHIN THE WINDWARD DISTRICT

<u>EXISTING SOURCES</u>	<u>MGD</u>	
Waihee Tunnel	4.0	
Kahaluu Tunnel	2.10	
Haiku Tunnel	1.60	
Luluku Tunnel	0.3	
Waimanalo Tunnels	0.6	
Kuou Wells	2.0	
Waimanalo Well	0.1	
Waihee Wells I & Incline Wells	**	Flow varies to comply with Court Order requiring 2.7 mgd at stream gaging sta.
Hauula Wells	0.2	
Punaluu Well I	1.0	
Punaluu Wells II, Punaluu Wells III	5.0	
Kahana Wells I	0.5	
<u>PROPOSED SOURCES</u>	<u>MGD</u>	
Haiku Well	0.5	
Kahaluu Well	0.5	
Kahana Water Development	6.0	
Luluku Well	1.0	
Kaluanui Wells	0.5	
<u>ADDITIONAL PROPOSED SOURCES</u>		
Haikipuu	Maakua (Hauula)	
Kaaawa South	Waimanalo Alluvial	
Kaaawa North	Maunawili	
Punaluu Alluvial	Waiahole	
Kamooalii I	Waianu (Waiahole)	
Kuou II	Waikeekoo (Waikane)	
Kamooalii II	Punaluu Mauka III	
Punaluu Mauka	Waikane	
Punaluu South	Waimanalo III	
Waimanalo II	Maunawili II	

II. DESCRIPTION OF ENVIRONMENTAL SETTING

THE KOOLAUPOKO DISTRICT

The proposed waterline is within the Koolaupoko District of Oahu. Figure 1 shows that the waterline will traverse the rural area of Kahaluu and the urban-fringe areas of Ahuimanu and Kaneohe, with substantial open space between the latter two.

Historical

Kaneohe and adjacent areas began as some of the most productive agricultural areas of Oahu as a result of the availability of large quantities of fresh water, primarily from constantly flowing springs located high in the surrounding mountains. Major farming crops included taro, sugarcane, rice and pineapple. Livestock and cattle were also supported dating back to the time of the first records taken in the 1800's.

Gradual urban development and reduction of agriculture began in the mid 1800's. Agricultural production continued to drop until in the 1930's, decreases became significant. Urbanization was well underway by 1950.

In the past two decades there has been an extensive growth in residential and commercial development in Kaneohe and adjacent areas.

Kaneohe population approximately doubled from 1960 to a 1970 population of about 30,000.

Demography and Land Use

Kaneohe is designated as part of the Urban-Fringe in the Honolulu General Plan. See Figure 4.

At the time of the 1970 census there were 7,181 households in Kaneohe, and median income was \$13,725. The town is one of two densely populated residential centers (the other being Kailua) in the windward water district.

Table 1 shows present growth projections to year 2000 in relation to other Oahu areas.

The Windward area to be served by this waterline (i.e. Kahaluu to Makapuu) is primarily residential, with a minimum of commercial and light industrial activity. Such use is to continue in accordance with the Honolulu General Plan. Population of Windward Oahu was approximately 120,000 in 1978, and in the General Plan is projected to be about 132,000 in year 2000.

Figure 5 shows STATE LAND USE designations for windward areas.

Figure 6 shows the City's existing Detailed Land Use Map for the pertinent area.

Climate

The average rainfall in the area is 60 inches. Prevailing northeast tradewinds of about 14 mph maintain a cool climate with an average temperature of 70^o F. Average relative humidity in the area is about 70 percent.

Soils

The primary soil type found along the water main alignment is of the silty clay type. The predominant type is Lolekaa silty clay (LoB, LoE, LoF) and Waikane silty clay (WpE) with lesser amounts of Alaeloa (AeE) and Hanalei (HnA) silty clay and a small amount of mixed fill land (FL). Classification is based on USDA soil survey (USDA 1972).

Flooding and Subsurface Water

The highway shoulder area along Kahekili Highway and the Kapunahala areas traversed by the 42" waterline are not subject to flooding. Neither is the route traversed by the 30" spur line subject to flooding. However, Kamehameha Highway from Waihee Street to the Kahaluu Stream is subject to flood inundation. The Flood Insurance Rate Map, City and County of Honolulu (USDC 1974), delineates the 100-year Flood Area.

Coastal Zone

Chapter 205A, Hawaii Revised Statutes, establishes rules, regulations and policies relating to environmental shoreline protection for the State of Hawaii, to preserve, protect and restore the coastal zones of the islands. Where construction occurs within the Special Management Area (SMA), a permit is required for the construction. A short stretch of the proposed project will be constructed within the SMA. A permit for construction within the SMA will be acquired prior to construction.

POPULATION AREAS



Primary Urban Center
1. Honolulu



2. Aiea - Pearl City



Urban - Fringe

4. Aiea Koo - Hawaii Kai

5. Kailua

6. Kaneohe - Ahuimanu

7. Waipahu - Crestview

8. Mililani - Waipio

9. Wahiawa



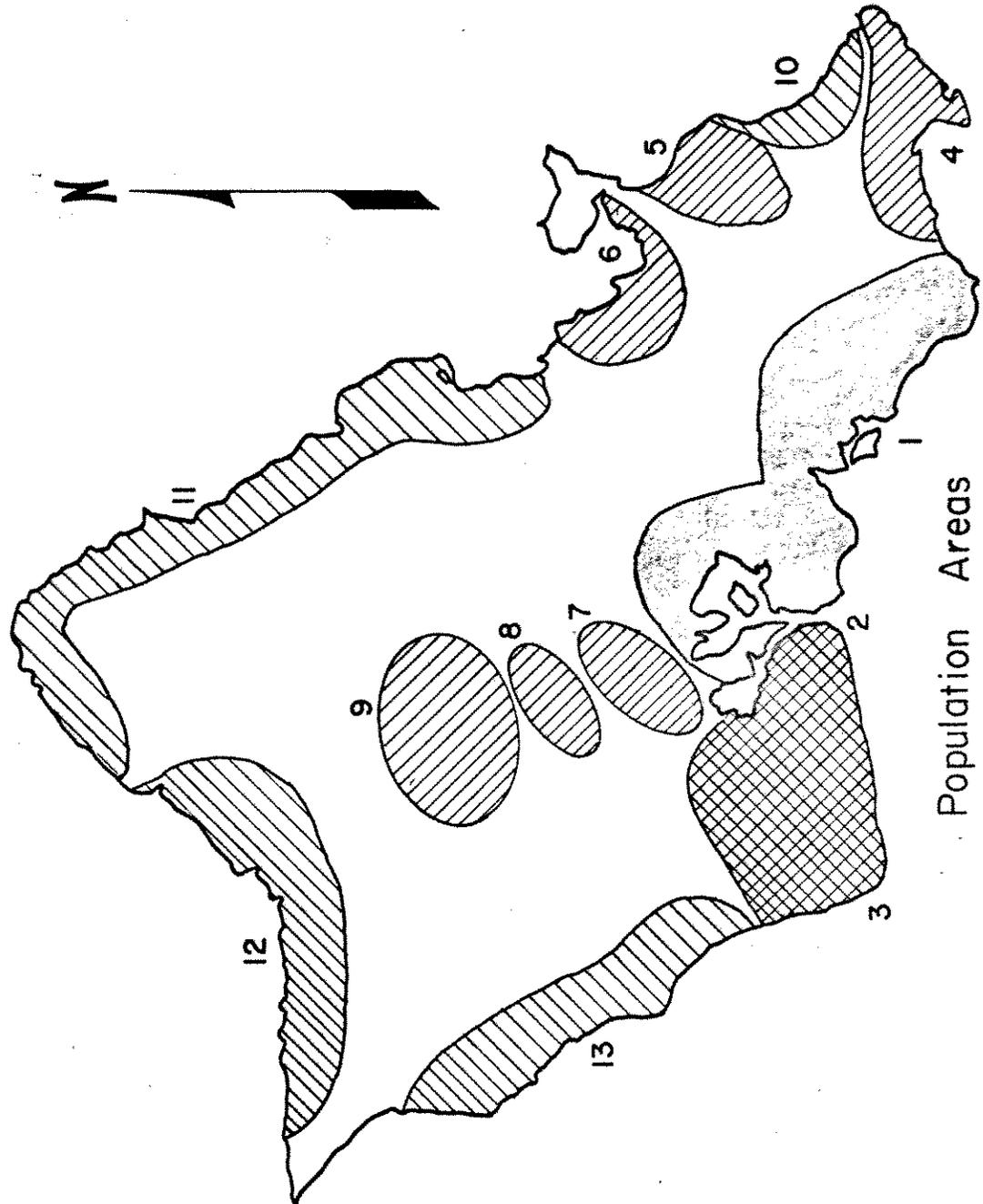
Rural

10. Waimanalo

11. Kahaluu - Kahuku

12. North Shore

13. Waianae Coast



Population Areas
per Honolulu General Plan

FIGURE 4

TABLE 2

DISTRIBUTION OF THE RESIDENTIAL POPULATION

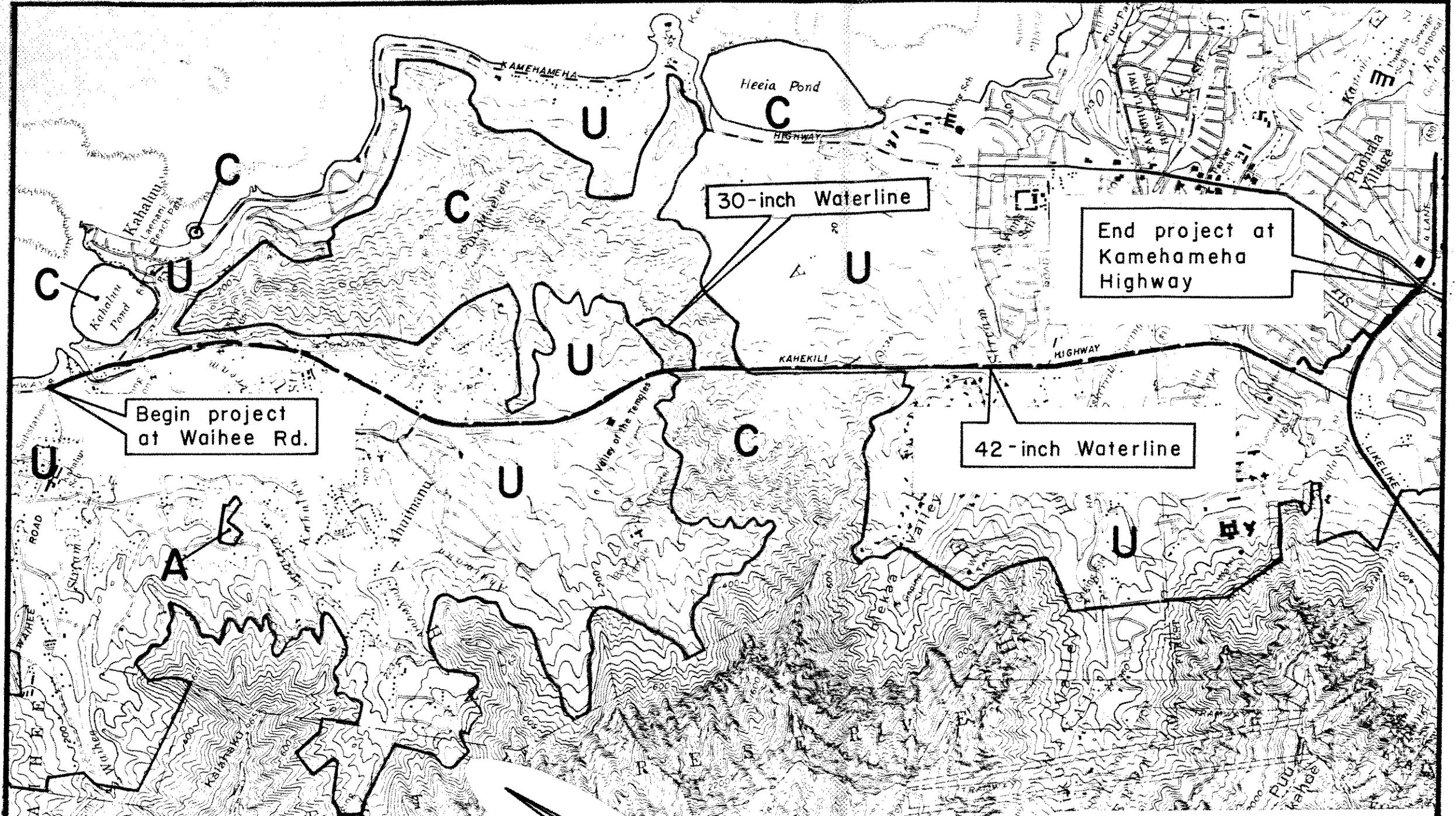
1975 AND 2000
(FROM HONOLULU GENERAL PLAN)

<u>LOCATION</u>	<u>1975*</u> <u>POPULATION</u>	<u>% OF</u> <u>TOTAL</u>	<u>2000*</u> <u>POPULATION</u>	<u>% OF</u> <u>TOTAL</u>
Oahu Total	704,403	100.0	917,000	100.0
Primary Urban Center	398,352	56.5	468,000	51.0
<u>HONOLULU (WAIALAE)</u>				
Kahala - Halawa	304,546	43.2	353,000	38.5
Aiea - Pearl City	93,806	13.3	115,000	12.5
<u>SECONDARY URBAN CENTER</u>				
Ewa - Makakilo	21,800	3.1	92,000	10.0
<u>URBAN FRINGE</u>				
Aina Koa - Hawaii Kai	223,890	31.8	284,000	31.0
Kailua #5	39,374	5.6	58,000	6.3
Kaneohe - Ahuimanu #6	40,722	5.8	43,000	4.7
Waipahu - Crestview	51,394	7.3	61,000	6.6
Mililani - Waipio	26,913	3.8	42,000	4.6
Wahiawa	20,302	2.9	35,000	3.8
	45,185	6.4	46,000	5.0
<u>RURAL</u>				
Waimanalo #10	60,361	8.6	73,000	8.0
Kahaluu - Kahuku #11	8,435	1.2	11,000	1.2
North Shore	14,890	2.1	17,000	1.9
Waianae Coast	9,540	1.4	10,000	1.1
	27,496	3.9	35,000	3.8

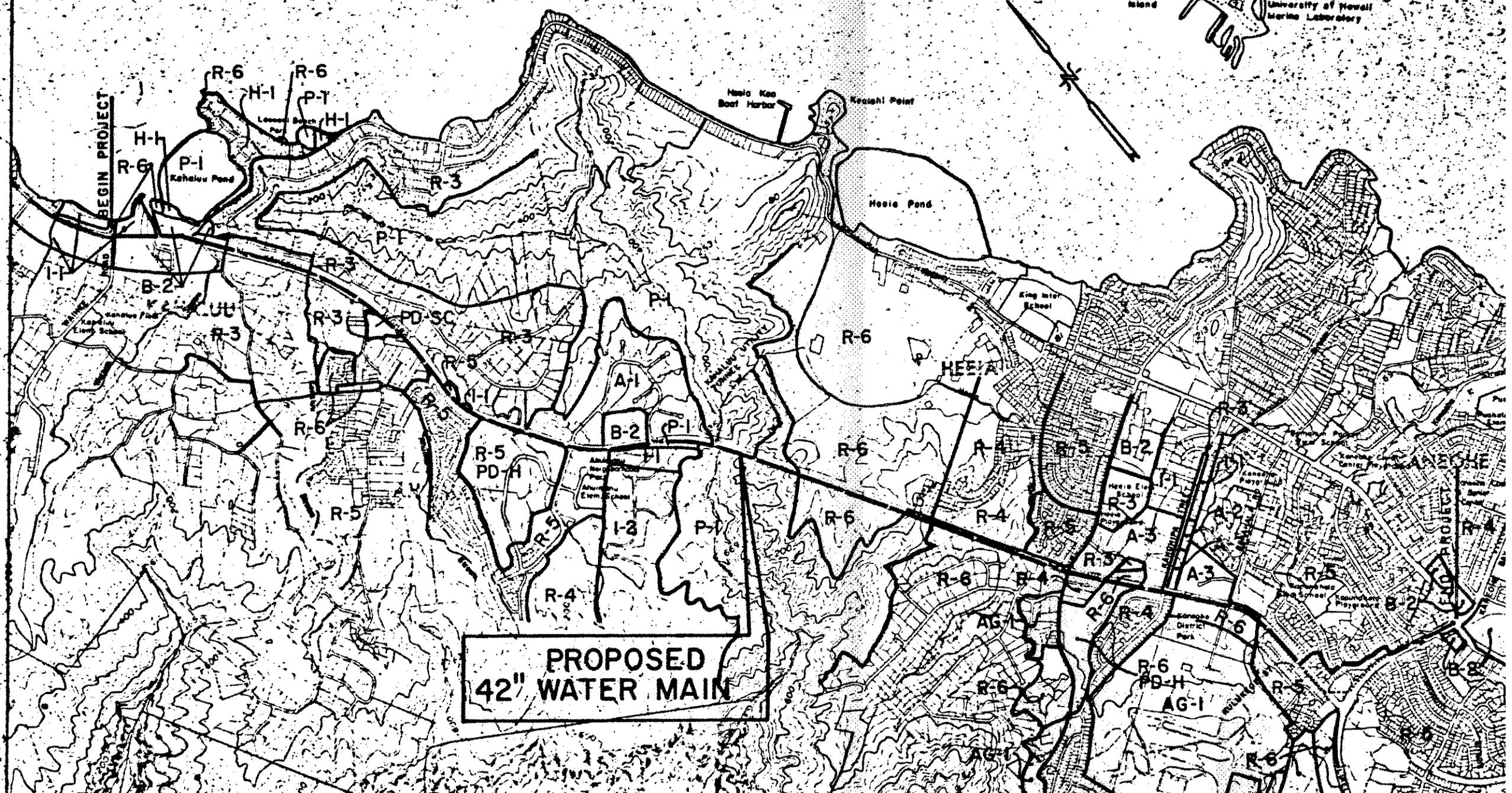
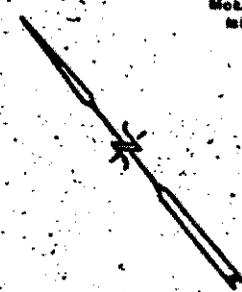
NOTE: The % of total figures for the year 2000 state the policy contained in the table. The figure of 917,000 for the year 2000 and the corresponding distribution of the population to the various designated areas will be revised as the State Department of Planning and Economic Development revises its population projections.

* Total resident population, Civilian & Military (without tourists).

Windward Population Areas #10, #5, #6, #11	115,000	--	132,000	--
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Moku O Lee
Island
University of Hawaii
Marine Laboratory



**PROPOSED
42" WATER MAIN**

IMMEDIATE PROJECT AREA

Physical Description of Area

Planned routing of the 42" line will be alongside or under highway or road pavements. Kahekili Highway, along which a majority of the main will be routed, is a major traffic artery of Windward Oahu. A bikeway is planned along Kahekili Highway which is compatible with the waterline. The 42" main will be installed primarily under the highway shoulder wherever possible.

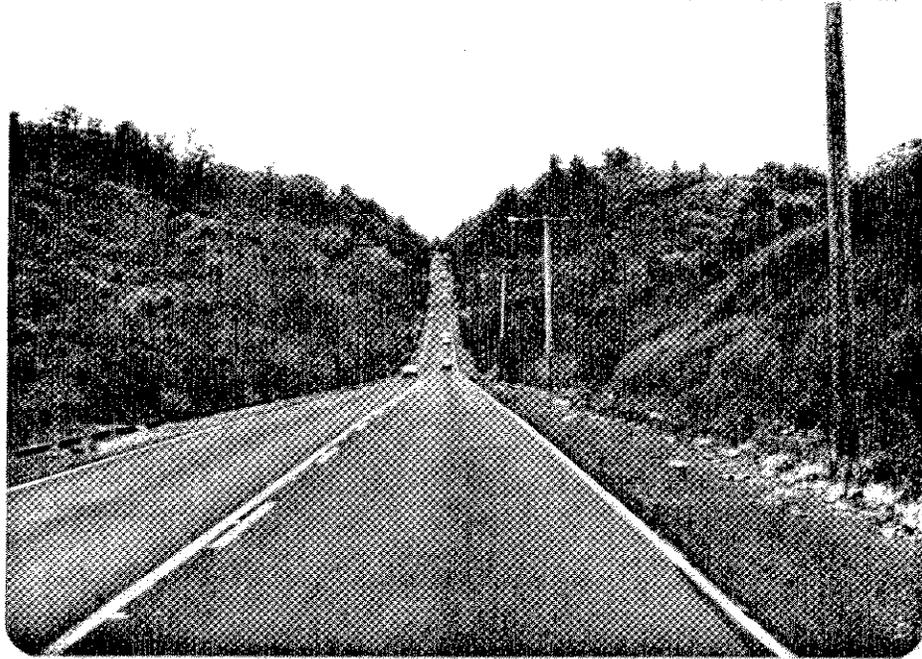
The short 30" spur water main will be in open rolling terrain within Bishop Estate land which is designated "Preservation" on the DLUM. A temporary construction roadway will be required in the Bishop Estate property necessary for the installation of the main.

The character of the waterline route is shown in Figures 7a thru 7c.

The entire route is adjacent to either residential areas or open space (which includes Ahuimanu neighborhood Park and Kaneohe District Park).

Topography and Drainage Along the Waterline Route

The five mile route of the waterline in existing graded rights-of-way is in generally moderate rolling terrain. Maximum longitudinal grade is about 6%. There are no site drainage problems along the route.



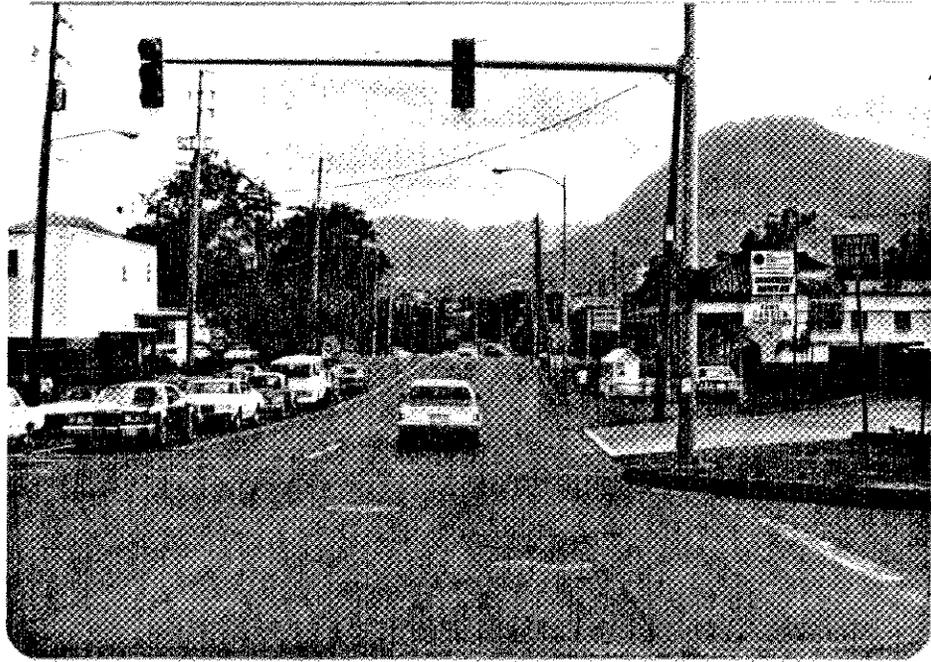
KAHEKILI HIGHWAY

(Looking towards Kahaluu from
Haiku Road Intersection.)



KAMEHAMEHA HIGHWAY

(At Keaahala Road Intersection looking
South on a link on an alternate route
for the 42" water line.)



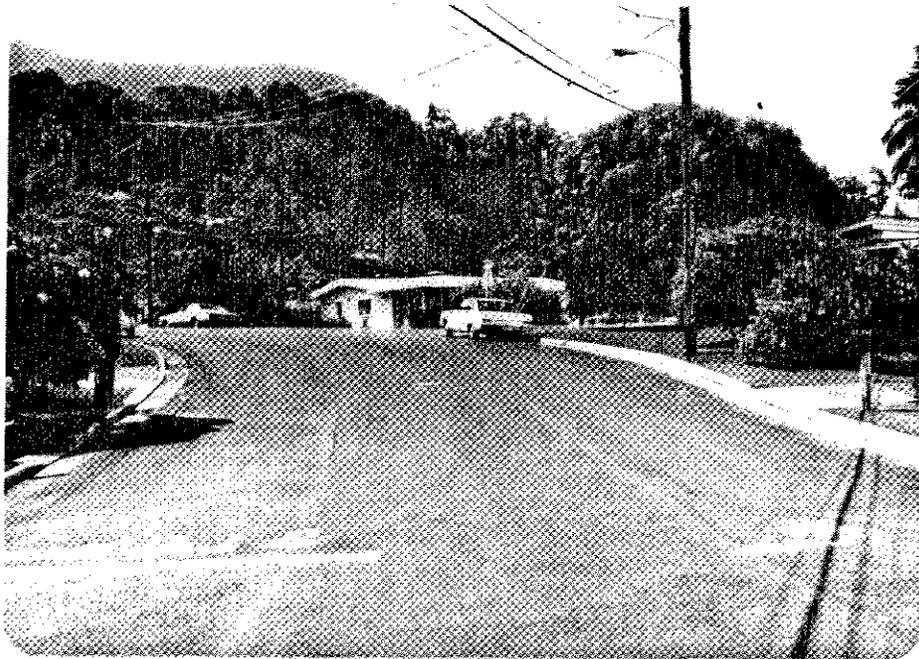
KAMEHAMEHA HIGHWAY

(At Kealahala Road Intersection looking South on a link on an alternate route for the 42" water line.)



KEAAHALA STREET

(Looking East from Anoi Road Intersection - A link on an alternate route for the 42" water line.)



KULUKEYOE STREET

(Looking West from Keneke Street
along route of 42" water line.)



KENEKE STREET

(Looking South from Kulukeyoe Street
Intersection - along route of 42"
water line.)

Historic and Archeological Sites

There are no archaeological or historical sites within the route of the waterline. Kahaluu Fish Pond is near the vicinity of the proposed waterline route, however, it is unaffected by the waterline installation.

Flora & Fauna

The project is located principally within the road right-of-way of a busy thoroughfare. The entire roadway is paved with asphaltic concrete with shoulder areas covered with different types of grass and weeds. The Bishop Estate land, where the 30" water main spur will be installed, is designated preservation. This portion of the project is in an area adjacent to the Heeia Marsh which is a habitat for the endangered Hawaiian Gallinule and coot. However, the project is far enough away from the Marsh area such that construction will have little or no affect on these species. The Hawaiian Waterbirds Recovery Plan (1977) recommends that the marsh be preserved as a waterbird habitat, although the landowner has plans to develop it for residential use. There is no evidence of rare and/or endangered species of flora and/or fauna in the area. (See Table 2)

In the area where the project crossed Kahaluu Stream, including downstream along the shoreline, common fish were observed. However, the State Department of Land and Natural Resources has reviewed the proposed action and its possible effect upon the fisheries and find the proposed project will have no adverse long term impacts upon them. Mitigative measures will be applied to minimize silt discharges into the streams and coastal waters during construction of the project.

Soils Along the Route

The major portion of the water line will be installed in the road right-of-way and hence surface cover of the project area consist of asphalt roadway and suitable roadway fill material. The 30" spur line will be backfilled with suitable material as prescribed in the BWS Water Standards. Surface cover is characteristic of urbanized areas.

Traffic Conditions

Daily traffic on Kahekili Highway along the route of the proposed waterline is in the range of 10,500 to 12,700 vehicles during a 24-hour period (as conducted by the Department of Transportation Services, City and County of Honolulu, in October 1978).

A two-hour peak is usually between 6:00 to 8:00 A.M. when the north to south vehicle count is about 1,850, and between 4:00 to 6:00 P.M. when the south to north vehicle count is about 2,400.

Existing Utilities

Water lines, communication cable, sewer lines, drain lines, flood control channel, manholes can be expected along the route. Construction plans will therefore be coordinated with the City's Division of Engineering and Division of Wastewater Management, Hawaiian Electric Company, and Hawaiian Telephone Company.

Existing Noise Levels

Existing noise levels along Kahekili Highway during daylight hours are estimated to be in the range from 65 dBA to 75 dBA within the shoulder areas where the waterline installation will be underway.

TABLE 3

SPECIES ACTUALLY OBSERVED OR PRESUMED TO BE
PRESENT ON THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME
<u>BIRDS</u>	
* Japanese White-eye	<u>Zosterops japonica japonica</u>
* English Sparrow	<u>Passer domesticus</u>
* Red Crested Cardinal	<u>Paroraria coronata</u>
* Cattle Egret	<u>Bubulcis ibis</u>
* Common Mynah	<u>Acridotheres tristis tristis</u>
* Barred Dove	<u>Geopelia striata</u>
* Lace-necked Dove	<u>Streptopelia chinensis</u>
* Red Vented Bulbul	<u>Pycnonotus cafer</u>
<u>MAMMALS</u>	
Indian Mongoose	<u>Herpestes auropunctatus</u>
Feral Cat	<u>Felis catus</u>
Black Rat	<u>Rattus rattus</u>
Brown Rat	<u>Rattus norvegicus</u>
Polynesian Rat	<u>Rattus exulans hawaiiensis</u>
House Mouse	<u>Mus musculus</u>
* Domestic Cattle	<u>Bos tauris</u>
<u>OTHER VERTEBRATES</u>	
Gecko	
Common Toad	
<u>INVERTEBRATES</u>	
Numerous insect species	
African Snail	

* Actually Observed

TABLE 3 (Continued)

COMMON NAME	SCIENTIFIC NAME
<u>VASCULAR PLANTS</u>	
Spiney Amaranth	<u>Amaranthus spinosus</u>
Haole Koa	<u>Leucaena leucocephala</u>
Strawberry Guava	<u>Psidium cattleianum</u>
Common Guava	<u>Psidium guajava</u>
Jova Plum	<u>Eugenia cuminii</u>
Coconut	<u>Cocos nucifera</u>
California Grass	<u>Brachiaria mutica</u>
Large Crabgrass	<u>Digitaria sanguinalis</u>
Maile Pilau	<u>Paederia foetida</u>
Honohono	<u>Commelina diffusa</u>
Nettle-leaved Vervain	<u>Stachytarpheta urticaefolia</u>
Malayan Ground Orchid	<u>Spathoglottis plicata</u>
Hau	<u>Hibiscus tiliaceus</u>
Asiatic Pennywort	<u>Cantella asiatica</u>
Sword Fern	<u>Nephrolepis exalta</u>
Oak Fern	<u>Dyopteris dentata</u>
Umbrella Tree	<u>Brassaia actinophylla</u>
Sensitive Plant	<u>Minosa pudica</u>
Lions-Ear	<u>Leonotis nepetaefolia</u>
Button-weed	<u>Borreria laevis</u>
Balsam Apple	<u>Momordica charantia</u> var. <u>pavel</u>
Spanish Needle	<u>Bidens pilosa</u>
Christmas Berry	<u>Schnius terebinthifolius</u>
Red Pualele	<u>Emilia souchifolia</u>
Passion Flower	<u>Passiflora sp</u>
Ironwood	<u>Casuarina equisetifolia</u>
Indian Fleabana	<u>Pluchea indica</u>
Spanish Clover	<u>Desmondium uncinatum</u>
Indigo Plant	<u>Indigofera anil</u>

III. RELATIONSHIP OF PROPOSED ACTION TO LAND USE PLANS, POLICIES AND CONTROL FOR THE AFFECTED AREA

The proposed 42" water line project does not conflict with any approved or proposed, State or County land use plans, policies and controls.

The new water line will improve the existing system to meet required standards for water service and fire protection for the present population.

Improvement of Kahekili Highway is expected at some unknown future date. A bikeway is also planned along the highway. The waterline is compatible with those highway plans.

An improvement of the Kahekili/Likelike intersection, and some surfacing of shoulders on Likelike between Kahekili and Kamehameha Highway is also expected at some indefinite date. The waterline is likewise compatible with these plans.

The 42" waterline is an element of infrastructure which supports the Honolulu General Plan by allowing for the future growth of our island population. Besides indirectly supporting the full development of the primary urban center with excess water, reducing or maintaining the Island's proportion of rural population in Kahaluu to Kahuku areas, promoting employment opportunities by permitting growth of business centers in the urban-fringe areas and permitting the construction of homes for people of different income levels and of various sizes, the project is just one portion of our water supply system needed to provide an adequate water supply for the needs of the people of Oahu.

IV. PROBABLE IMPACT OF THE PROPOSED ACTION ON THE ENVIRONMENT

SHORT TERM

Several short term impacts will arise from construction and installation of the new pipeline.

Dust

Dust will be generated during excavation and backfilling operations. This could cause minor disturbances to residents and passers by in the proximity of the site. The impact would be temporary and no long term air quality impairment should occur.

Dust control measures, such as sprinkling, will be implemented to reduce dust levels generated. Equipment used at the project will be required to have proper air pollution control devices to minimize vehicle emissions.

Noise

Construction will be confined to normal daylight (generally 8:30 a.m. to 3:30 p.m.) hours. Noise levels are expected to arise from excavation and vehicular activities. Noise generated by the project must conform to the State Department of Health's "Public Health Regulations, Chapters 44A and 44B." A noise permit for urban areas of the project will be required from the Noise and Radiation Branch of the Department of Health. All equipment at the project site will be required to have mufflers for noise control.

Traffic

There will be temporary and minimal interference with normal traffic patterns, primarily at intersections. Safe pedestrian walkways and vehicle access to cross-streets and driveways will be maintained.

Water and Utility Service

Connections to existing mains will be accomplished by tapping tees and valves with structural struts and disruption to water service will be minimal. The waterline will be routed around existing utilities and no disruption to these lines is expected.

Flora and Fauna, Natural or Historic or Archaeological Sites

There will be no significant impact on wildlife or flora and fauna in the area as a result of this project since the construction work will be principally within the road right-of-way of a busy highway which is not inhabited by any significant wildlife. There are no known natural, historic or archaeological sites within the project area. Landscaping within the road right-of-way will not be disrupted by this project. The entire project principally falls within public rights-of-way, and no land acquisition or additional easements are required. Along the route of the 30" spur line, all plant life will be allowed to grow back to its natural state.

Chlorinated Water Disposal

The disposal of chlorinated water (at least 50 mg/l), which is used for the disinfection of the water main, directly into existing storm drains and subsequently into adjacent streams is not expected to be detrimental. Mitigative measures will be taken to reduce the chlorine residual levels to below less than 0.5 mg/l. Disposal is to be coordinated with the Division of Engineering and monitored by BWS inspectors.

Water Quality

The installation of the Water Main across Kahaluu Stream will require approximately 1,500 cubic yards of excavation for trenching. Mitigative measures will be made during construction, to minimize the silt discharge into coastal waters in order to minimize affect on water quality (See section VIII, Mitigative Measures for Water Quality).

LONG TERM

No long term physical effects are expected to arise from installation of the main.

There are two significant environmental issues relative to the 42" waterline, namely:

1. Will the size and capacity of the waterline be an "inducer of population growth" on the Windward side?

2. Will the existence of this transmission line contribute to reduction of stream flows on the Windward side? -- i.e. will the large line accelerate windward groundwater source development to the detriment of stream flow?

With respect to the former concern, it is noted that an additional transmission line is needed to provide a basic infrastructure element necessary to support the Honolulu General Plan. Land use decisions inherent in the General Plan and ensuing Development Plans will be the primary determinant of future growth. However, the lack of waterline and other infrastructure elements, if denied, can inhibit growth as well as cause problems for existing residents. It is not considered that the waterline is itself an "inducer of growth".

The streamflow issue is one which is of concern in water source development in windward Oahu, but the water transmission line itself does not directly have an adverse impact on streamflow. On the contrary, being a major element in the island-wide network, if it is possible within the next decade to develop other reasonably priced alternate water sources leeward of the Koolaus, the Windward residents of Oahu can benefit from such water development once the network links are all adequate.

The long term beneficial impacts outweigh the minor short term adverse effects. The new distribution line will provide for better pressures and volumes and improve water service. Better fire protection will be available because of improved volume and pressure of the water system

V. PROBABLE ADVERSE IMPACTS WHICH CANNOT BE AVOIDED

Short term adverse effects associated with construction activities are unavoidable. Temporary air pollution from dust, noise from construction equipment and disruption of traffic flow from water pipe placement will occur. In addition, water service may be disrupted at times.

No adverse long term effects are expected.

VI. ALTERNATIVES TO THE PROPOSED PROJECT

Alternatives to the proposed action are: (1) not installing the waterline; (2) installing a smaller main; (3) taking a route other than the proposed alignment right-of-way.

As explained on Page 5, additional transmission capacity is required on Windward Oahu to meet operational reliability and flexibility. Although a smaller main could meet short range requirements, it would not be economical to install one line now and another later in view of the long service life expected. Accordingly, Alternates 1 and 2 are not considered desirable.

Alternate Routes

One alternate route following Keaahala Street from Kahekili to Kamehameha Highway and thence to Likelike was considered. The narrow right-of-way on Keaahala Street and the heavy congestion of utilities and traffic on Kamehameha Highway make this route undesirable if it can be avoided.

Another alternative route for the 42" line involves the intersection of Likelike Highway and Kahekili Highway. A rather complex highway interchange is planned for some future year at this intersection which may involve extensive grade changes. These details have not yet been determined and may not be determined prior to installation of the 42" water line. The water line could seriously complicate the interchange planning. Accordingly, another alternate routing -- thru Kapunahala Subdivision, along Kulukeoe Street and Keneke Street is presently the preferable alternative.

VII. RELATIONSHIP BETWEEN LOCAL SHORT TERM USES AND LONG TERM PRODUCTIVITY

The proposed installation of the 42-inch main in Kaneohe will result in no long term loss of environmental resources. Short term effects and disruptions will occur only during the construction period. The installation of the pipe will upgrade existing water service for the life of the pipe system.

VIII. MITIGATION MEASURES

Several conventional methods will be used to mitigate the short term adverse impacts. Where urbanized areas are in close proximity and work is within the State Highway, construction will be limited to the daylight working hours, from 8:30 a.m. to 3:30 p.m. (Monday to Friday). The Contractor will be required to comply with all noise (Chapter 44A and 44B) and air pollution control (Chapter 43) regulations of the State Health Department. Dust control will be required. Disposal of chlorinated water used in disinfection of the main will be de-chlorinated or diluted to safe levels before discharge into existing drainage systems.

Any traffic disruption along Kahekili Highway, Likelike Highway and Kamehameha Highway and any other public right-of-way will be minimized and traffic will always be open to movement in both directions. Where traffic will be impaired, flagmen or special duty policemen will be utilized to direct traffic. The Contractor will be required to comply with the Manual on Uniform Traffic Control Devices for Streets and Highways. During the non-working hours, trenches will be covered with non-skid metal plates and necessary safety devices will be utilized. Safe pedestrian walkways and vehicle access to connecting streets will be maintained.

Flood Hazards

Kamehameha Highway is expected to flood during heavy storms (100 yr. storm), however, construction of the water main will be conducted during periods where extreme weather conditions are not expected to generate flood conditions (summer months).

Water Quality

Construction Activities in the Kahaluu Stream will be conducted during low flow/low tide conditions; construction activities within and adjacent to the water will be conducted so as to minimize turbidity and erosion; if turbidity cannot be controlled during construction, silt screens will be used downstream from the project site; extreme care will be taken to insure that no debris, petroleum products, or other deleterious material will be allowed to fall, flow, leach, or otherwise enter the water; all stockpiled dredging material will be placed above the mean higher high (MHH) waterline behind impervious berms.

Special Management Area (SMA)

The project will not have any substantial long term environmental effect on the coastal zone environment. All affects will be short term which will be related to the construction period only. An SMA permit will be acquired prior to Construction.

IX. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The construction of the proposed action will utilize resources considered necessary for the completion of the project.

The major irretrievable commitments of resources used for construction operation include manpower, material, project funds and space required for pipeline installation. Fuel used for construction equipment, and water consumed for and during the course of construction are commitments of resources that are irretrievable but necessary for the construction of the project.

X. AGENCIES AND ORGANIZATIONS CONSULTED

A. City and County of Honolulu:

1. Department of Public Works
 - a. Division of Engineering
 - b. Division of Wastewater Management
2. Department of Transportation Services
3. Board of Water Supply
4. Department of Land Utilization
5. Department of Housing and Community Development

B. State of Hawaii

1. Department of Transportation, Highways Division
2. Office of Environmental Quality Control
3. Department of Land and Natural Resources
4. Hawaii Housing Authority
5. Department of Accounting and General Services
6. Environmental Center, University of Hawaii

C. Private

1. Hawaiian Telephone Company
2. Hawaiian Electric Company
3. Life of the Land
4. Environmental Law Institute
5. B. P. Bishop Estate
6. Kahaluu Neighborhood Board No. 29
7. Life of the Land

D. Federal Government

1. Fish and Wildlife Service, Department of Interior
2. Soils Conservation Services, Department of Agriculture
3. U.S. Army Engineering District, Honolulu
4. U.S. Navy, Headquarters
5. U.S. Army, Headquarters
6. U.S. Coast Guard

XI. NECESSARY APPROVALS (PERMITS)

1. Corps of Engineers, Department of the Army Permit for Activities in Waterways (Federal)
2. Shore Water Construction Permit (DOT, State of Hawaii).
3. Trenching Permit (DPW, City & County of Honolulu).
4. Traffic Engineering Street Usage Permit (DOTS, City and County of Honolulu).
5. Discharge of Waters Permit (DPW, City & County of Honolulu)
6. Permit to Perform Work Upon a State Highway (State Department of Transportation)
7. Authority to Construct/Permit to Operate (State Department of Health)
8. Special Management Area Permit (DLU)
9. Conservation District Use Application (DLNR)
10. Noise Permit (Department of Health)

APPENDIX
COMMENTS AND REPLIES TO THE EIS

AGENCIES AND INDIVIDUALS RESPONDING TO THE EIS

	<u>Comment Date</u>	<u>BWS Response Date</u>
<u>FEDERAL:</u>		
1. Mr. Maurice H. Taylor Fish and Wildlife Service Department of the Interior	4/07/80	4/17/80
2. Mr. Otis M. Gryde Soil Conservation Service Department of Agriculture	4/07/80	4/16/80
3. Mr. Kisuk Cheung U. S. Army Engineering District, Honolulu	3/26/80	4/08/80
4. Lt. Cdr. J. W. Carl U. S. Navy, Headquarters	3/07/80	3/18/80
5. Col. Peter D. Stearns U. S. Army Headquarters, Support Command	3/05/80	3/11/80
6. Cdr. J. E. Otranto U. S. Coast Guard	3/06/80	No reply
<u>STATE:</u>		
1. Mr. Richard O'Connell Office of Environmental Quality Control	3/31/80	4/21/80
2. Dr. Ryokichi Higashionna Department of Transportation	3/31/80	4/14/80
3. Mr. Doak C. Cox Environmental Center, UH	3/24/80	4/07/80
4. Mr. Susumu Ono Department of Land and Natural Resources	3/24/80	4/07/80
5. Mr. Franklin Y. K. Sunn Hawaii Housing Authority	3/14/80	3/25/80
6. Mr. Hideo Murakami Department of Accounting and General Services	3/11/80	3/18/80

		<u>Comment Date</u>	<u>BWS Response Date</u>
<u>STATE:</u> (continued)			
7.	Mr. Melvin K. Koizumi Department of Health	3/11/80	3/19/80
8.	Major Wayne R. Tomoyasu Department of Defense	3/04/80	3/13/80
9.	Mr. John Farias, Jr. Department of Agriculture	3/04/80	No reply
10.	Mr. Hideto Kono Department of Planning and Economic Development	4/07/80	4/21/80
<u>CITY:</u>			
1.	Mr. Tyrone T. Kusao Department of Land Utilization	3/14/80	4/15/80
2.	Mr. George Moriguchi Department of General Planning	3/13/80	4/08/80
3.	Mr. Barry Chung Department of Housing and Community Development	3/12/80	3/17/80
4.	Mr. Akira Fujita Department of Transportation Services	3/18/80	3/24/80
<u>OTHER:</u>			
1.	Kahaluu Neighborhood Board No. 29	3/31/80	4/17/80
2.	Mr. Jim O'Rourke Life of the Land	4/04/80	4/23/80



United States Department of the Interior

FISH AND WILDLIFE SERVICE

300 ALA MOANA BOULEVARD
P.O. BOX 50167
HONOLULU, HAWAII 96850
April 7, 1980

REC'D
BD OF WATER SUPPLY
APR 10 2 51 PM '80

IN REPLY REFER TO:
Room 6307

Mr.
Asst. Mar. *aka*
PIE

Office of Environmental Quality Control
Office of the Governor
550 Halekiauila Street, Room 301
Honolulu, Hawaii 96813

Re: Environmental Impact
Statement for 42-inch
Waterline, Kaneohe,
Oahu, Hawaii

Dear Sir:

We have reviewed the subject Environmental Impact Statement (EIS) and offer the following comments.

We find this document generally satisfactory in its consideration of resources for which the Service is responsible. However, the statement on page 15 that there is no evidence of endangered species in the project area requires some clarification. Although it is highly unlikely that any Federally-recognized endangered species inhabit the actual right-of-way of the proposed 42-inch water pipeline and 30-inch spur line, the latter will be constructed adjacent to Heela marsh which is known to provide habitat for endangered Hawaiian gallinule and coot.

The Hawaiian Waterbirds Recovery Plan (1977) designated Heela marsh a secondary recovery area for these birds and possibly the Hawaiian stilt, and recommended that the area be managed as waterbird habitat. The Ornithological Survey of Hawaiian Wetlands (1977) placed a higher value on this marsh based on more recent ornithological data and recommended that the marsh be zoned for conservation use.

In view of the this, we recommend that the EIS address the potential impact of the proposed work on the marsh and specify measures which could be taken to minimize or mitigate adverse impacts on the marsh habitat.



Save Energy and You Serve America!

gm

We appreciate this opportunity to comment.

Sincerely yours,

Original Signed by
Maurice H. Taylor

Maurice H. Taylor
Field Supervisor
Division of Ecological Services

cc: NMFS
HDF&G
EPA, San Francisco
Board of Water Supply
Endangered Species, FWS, Honolulu



COPY

April 17, 1980

Mr. Maurice H. Taylor
Division of Ecological Services
Fish & Wildlife Service
U. S. Department of the Interior
P. O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Taylor:

Subject: Your Letter of April 7, 1980,
Commenting on the Environmental
Impact Statement (EIS) for Our
42-Inch Waterline From Waihee
Booster Station to Kaneohe

Thank you for your comments on our proposed waterline project. Your letter will be appended to the revised EIS.

We will revise the EIS to indicate that the project will be adjacent to Heeia Marsh which is a habitat for the endangered Hawaiian gallinule and coot. The EIS will also make reference to the Hawaiian Waterbirds Recovery Plan (1977) and the Ornithological Survey of Hawaiian Wetlands (1977) and indicate their respective recommendations.

The EIS will also be revised to address any impacts the proposed work would have on the marsh and any mitigative measures that would be needed to minimize or avoid any adverse impacts.

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental
Quality Control
William Hee & Assoc.

RECEIVED

APR 23 1980

William Hee & Assoc., Inc.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

P. O. BOX 50006
HONOLULU, HI 96850

80-1188 JAV

7 APR 1980

OFFICE OF ENVIRONMENTAL QUALITY CONTROL
550 HALEKAWILA ST.
Room 301
HONOLULU HAWAII 96813

SUBJECT: 42" WATER LINE FROM WAIHEE:

DEAR SIRs:

THANK YOU FOR LETTING US REVIEW YOUR
E.I.S. ON THE WAIHEE WATER LINE.
WE HAVE NO COMMENT ON IT AT THIS TIME.
THIS REVIEW WAS DONE IN COOPERATION
WITH THE WINDWARD OAHU SOIL +
WATER CONSERVATION DISTRICT

C.C. BOARD OF WATER SUPPLY

Chris M. Lynch
Dist. Conservationist





COPY

wh

April 16, 1980

Mr. Otis M. Gryde
District Conservationist
Soil Conservation Service
U. S. Department of Agriculture
P. O. Box 50006
Honolulu, Hawaii 96850

Dear Mr. Gryde:

Subject: Your Letter of April 7, 1980,
on the Environmental Impact Statement
for the 42-Inch Waterline From
Waihee Booster Station to Kaneohe

Thank you for your comments on our proposed waterline project. Your letter will be appended to the revised environmental document.

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental
Quality Control
William Hee & Assoc.

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APR 22 1980

William Hee & Assoc., Inc.



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BD OF WATER SUPPLY

80-980

MAR 31 8 41 AM '80
DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 230
FT. SHAFTER, HAWAII 96858

PODED-PV

26 March 1980

Mr. Richard L. O'Connell, Director
Office of Environmental Quality Control
State of Hawaii
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Am *ASR*
P/E

Dear Mr. O'Connell:

The U.S. Army Corps of Engineers has reviewed the Environmental Impact Statement (EIS) for the 42-Inch Waterline from Waihee Booster Station to the Intersection of Likelike Highway and Kamehameha Highway, Kaneohe, Koolaupoko, Oahu, and offers the following comments. Streams and wetland crossings could require a Department of the Army permit under Section 404 of the Clean Water Act. Fill material placed as backfill or bedding may be permitted by regulation if it meets the conditions of 33 CFR 323.4-2(b)(1-4) and 323.4-3(a)(1) (Incl 1).

Portions of the proposed water transmission line near Kahaluu and Waihee Streams lie in special hazard areas designated Zone A, or areas of 100-year riverine flood (Incl 2 and 3). The 100-year flood refers to an event having a one percent chance of being equalled or exceeded in any given year. All public utilities, such as water systems, should be designed to minimize or eliminate flood damage within the flood-prone area and to provide adequate drainage to reduce flood hazards. The water system should also be designed to minimize or eliminate infiltration of flood waters.

We suggest that you include a discussion of the flora and fauna existing in the streams to be crossed by the proposed water pipeline. We also suggest that you provide a list of the flora and fauna that inhabit these streams possibly in Table 2. We suggest that the 2nd sentence on page 24 read "... walkways and vehicle access to cross-streets and driveways will be maintained."

On page 25, paragraph 1, consider the use of chlorinated water to disinfect the new pipeline prior to disposal of the water. Although the water line itself does not have a direct adverse impact on streamflow, any increased volume of groundwater or diversion of streamflow used for

Am

PODED-PV

26 March 1980

Mr. Richard L. O'Connell

transmission through the new pipeline could have an adverse effect on streamflow. The EIS should address the sources of the additional water to be transmitted through the completed 42-inch waterline. Thank you for the opportunity to comment on this EIS.

Sincerely,

2 Incl
As stated

KISUK CHEUNG
Chief, Engineering Division

CP: w/incl
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96813



COPY

April 8, 1980

RECEIVED
APR 14 1980

William Hee & Assoc., Inc.

Mr. Kisuk Cheung
Chief, Engineering Division
U. S. Army Engineer District,
Honolulu
Building 230
Fort Shafter, Hawaii 96858

Dear Mr. Cheung:

Subject: Your Letter of March 26, 1980, on
The Environmental Impact Statement
(EIS) for the 42-Inch Waterline
From Waihee Booster Station to the
Intersection of Likelike Highway
and Kamehameha Highway, Kaneohe

Thank you for your comments on the EIS for our proposed project.

We are presently requesting an extension of our Department of Army permit under Section 404 for the Kahaluu Stream crossing. Flood protection measures will be taken where our system is located within flood prone areas.

We will consider your suggestion to include a discussion in our revised EIS on the flora and fauna existing in the streams to be crossed by the proposed waterline.

The second sentence on page 24 will be revised to read:
"Safe pedestrian walkways and vehicle access to cross-streets and driveways will be maintained."

On page 25, the section on chlorinated water disposal will be clarified to indicate that the chlorinated water is used for the disinfection of the waterline.

COPY

Mr. Kisuk Cheung
Page 2

April 8, 1980

Attached is a table showing existing and proposed water sources in the Windward District that will be included in the EIS.

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

Very truly yours,



KAZU HAYASHIDA
Manager and Chief Engineer

Attach.

cc: Office of Environmental
Quality Control
William Hee and Associates

RECEIVED
BD OF WATER SUPPLY

MAR 12 2 38 PM '80

HEADQUARTERS
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96860

IN REPLY REFER TO:
002A:am
Ser 538

7 MAR 1980

Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Gentlemen:

Environmental Impact Statement
for
42-inch Waterline from Waihee Booster Station
to Intersection of Likelike Highway
and Kanehameha Highway

The Environmental Impact Statement for the 42-inch waterline from Waihee Booster Station to Kaneohe has been reviewed, and the Navy has no comments to offer. As requested by the Commission, the EIS is returned.

The opportunity to review the subject EIS is appreciated.

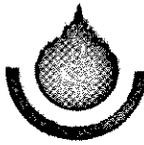
Sincerely,

J. W. CARL
LIEUTENANT COMMANDER, CEC, USN
DEPUTY FACILITIES ENGINEER
BY DIRECTION OF THE COMMANDER

Encl

Copy to: (w/o encl)
Board of Water Supply

RECEIVED
MAR 24 1980



COPY

March 18, 1980

Lt. Commander J. W. Carl
Deputy Facilities Engineer
Headquarters, Naval Base
Pearl Harbor
Box 110
Pearl Harbor, Hawaii 96860

Dear Commander Carl:

Subject: Your Letter of March 7, 1980 on the
EIS for Our 42-Inch Waterline from
Waihee Booster Station to Intersection
of Likelike Highway and Kamehameha
Highway

Thank you for your comments on our proposed project.

Should you have questions or require additional information,
please call Lawrence Whang at 548-5221.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental
Quality Control
William Hee & Associates

RECEIVED

MAR 24 1980

William Hee & Associates, Inc.

2. Waihee

80-690

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BD OF WATER SUPPLY

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY SUPPORT COMMAND, HAWAII
FORT SHAFTER, HAWAII 96858

MAR 7 2 09 PM '80

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PLE

APZV-EHE-E

05 MAR 1980

Office of Environmental Quality Control
State of Hawaii
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Gentlemen:

The Environmental Impact Statement (EIS) for the 42-Inch Waterline From Waihee Booster Station to Intersection of Likelike Highway and Kauehameha Highway, Kaneohe, Koolaupoko, Oahu, Hawaii has been reviewed and we have no comments to offer. There are no Army installations or activities in the vicinity of the proposed project.

The EIS is returned in accordance with your request.

Sincerely,

Original signed by

1 Incl
As stated

PETER D. STEARNS
COL, EN
Director of Engineering and Housing

CF:
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96813

March 11, 1980

Colonel Peter D. Stearns
Director of Engineering and
Housing
Headquarters U. S. Army
Support Command, Hawaii
Fort Shafter, Hawaii 96858

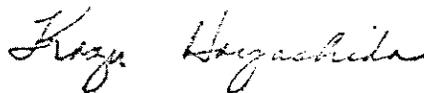
Dear Colonel Stearns:

Subject: Your Letter of March 5, 1980,,
on the Environmental Impact
Statement for the 42-Inch
Waterline from Waihee Booster
Station to the Intersection of
Likelike Highway and
Kamehameha Highway

Thank you for reviewing and commenting on our environmental document.

Should you have questions or require additional information, please call Lawrence H. Y. Whang at 549-5221.

Very truly yours,



KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental
Quality Commission
William Hee and Associates

MHS:vc

cc: K. Hayashida
& Whang

80-690



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

COMMANDER (dpl)
Fourteenth Coast Guard District
Prince Kalanianaʻole Federal Bldg.
300 Ala Moana Blvd.
Honolulu, Hawaii 96850
16450
Series 525
6 March 1980

Office of Environmental Quality Control
550 Halekauwila Street
Room 301
Honolulu, Hawaii 96813

Dear Sir:

The Coast Guard has reviewed the Environmental Impact Statement for the 42-Inch Waterline from Waihee Booster Station to Kaneohe and has no objection to the plan or constructive comments to offer at the present time.

Sincerely,

A handwritten signature in black ink, appearing to read "J. E. Otranto", written over a horizontal line.

J. E. OTRANTO
Commander, U. S. Coast Guard
District Planning Officer
Fourteenth Coast Guard District
By Direction of the District Commander

GEORGE R. ARIYOSHI
GOVERNOR



RECEIVED
BD OF WATER SUPPLY
APR 7 10 53 AM '80
DIRECTOR
TELEPHONE NO.
648-8915

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
OFFICE OF THE GOVERNOR
550 MALEKAUWILA ST.
ROOM 301
HONOLULU, HAWAII 96813

Am
P/E

March 31, 1980

Mr. Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu

Dear Mr. Hayashida,

SUBJECT: Environmental Impact Statement for the
42-Inch Water Line from Waihee Booster Station
to Intersection of Likelike Highway and
Kamehameha Highway, Kaneohe, Oahu.

We have reviewed the subject EIS and offer the following
comments for your consideration:

- 1) There should be a more detailed description of the cited quantity and pressure problems in parts of the present windward Oahu distribution network.
- 2) It is not clear how this waterline will support the water distribution system since the system is not shown in any figures or discussed in any detail. This should be included in the EIS since it appears that this line would be a major link in that system.
- 3) Page 4. How many construction phases are planned and how long will it take to complete all the phases? What is the breakdown of construction cost by source of funding? What funds, if any have been appropriated for this project?
- 4) Page 4. A Windward Oahu facilities plan for sources and transmission lines for the next decade is mentioned on this page. Assuming this waterline project is part of the implementation of this plan, has there been an assessment and determination made on the overall plan and its environmental impacts? If not, the assessment process being used would appear piecemeal.

Am

Mr. Kazu Hayashida
March 31, 1980
Page 2

- 5) Page 5. The last sentence appears outdated. What is the status of the development plans for windward Oahu?
- 6) Figure 3. It appears that the conservation district will be crossed and therefore will require a Conservation District Use Application from the Department of Land and Natural Resources. This would come after the issuance of the SMA permit.
- 7) Page 13. Do the described soils present any problems for the construction of the pipeline? Will this project affect or be affected by the flood control project at Kahaluu?
- 8) Page 22. Since the project will require an SMA permit there should be some discussion on how this project relates to the Coastal Zone Management policies and guidelines.
- 9) Page 26. Please detail your reasoning on why a large waterline such as that proposed is not an "inducer of growth."

The issue of streamflow is not thoroughly discussed. The indirect impacts of providing a capacity to transmit water out of the watersheds and streams is not discussed. Any new source developments on the windward side of Oahu may benefit windward residents as claimed, however, it may not benefit the present users of the stream nor the aquatic species in those streams. A more detailed discussion on this topic is warranted.

- 10) Page 27. Since there is no detailed discussion of potential dewatering of streams from further water development projects such as this one, the statement, "no adverse long term effects are expected," lacks substantiation. The same statement holds true for the conclusion on page 29 that there will be no long term losses of environmental resources.
- 11) Page 32. The resources used in the construction of the pipeline should also be mentioned in this section.
- 12) Noise permits from the Department of Health and the CDUA mentioned above should be included in the list of necessary approvals.

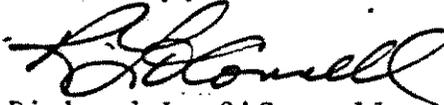
There are enclosed a list of commenting agencies and organizations and copies of those comments addressed to this Office.

Mr. Kazu Hayashida
March 31, 1980
Page 3

The EIS regulations allow the accepting authority to consider responses received beyond the fourteen day response period. We intend to consider such responses to comments on this EIS.

We thank you for the opportunity to review the subject EIS and look forward to the revised statement.

Sincerely,



Richard L. O'Connell
Director

Enclosures

LIST OF COMMENTING AGENCIES AND PERSONS ON THE 42-INCH WATERLINE EIS.

STATE AGENCIES

COMMENT DATE

Dept. of Accounting and General Services	3/11/80
*Dept. of Agriculture	3/4 /80
Dept. of Defense	3/4 /80
Dept. of Health	3/11/80
Dept. of Land and Natural Resources	3/24/80
Dept. of Social Services and Housing - HHA	3/24/80

COUNTY AGENCIES

Dept. of Housing and Community Development	3/12/80
Dept. of General Planning	3/13/80
Dept. of Land Utilization	3/14/80

FEDERAL AGENCIES

Headquarters U.S. Army Support Command, Hawaii	3/5 /80
*U.S. Coast Guard	3/6 /80
Headquarters Naval Base Pearl Harbor	3/7 /80
U.S. Army Engineer District, Honolulu	3/26/80

*Denotes comment being forwarded by OEQC

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA

HONOLULU, HAWAII 96843



COPY

78-112
MARK F. FASI, Mayor

HE H. FUJINAKA, Chairman
D. QUON PANG, Vice Chairman
R. KICHI HIGASHIONNA
T. ESITA R. JUBINSKY
W. LACE S. MIYAHIRA
ROBERT A. SOUZA
CLAUDE T. YAMAMOTO

April 21, 1980

KAZU HAYASHIDA
Manager and Chief Engineer

RECEIVED

APR 25 1980

William Hue & Assoc., Inc.

Mr. Richard O'Connell
Director
Office of Environmental
Quality Control
Room 301
550 Halekauwila Street
Honolulu, Hawaii 96813

Dear Mr. O'Connell:

Subject: Your Letter of March 31, 1980,
Commenting on the Environmental
Impact Statement (EIS) for the
42-Inch Waterline From Waihee
Booster Station to the Intersection
of Likelike Highway and Kamehameha
Highway, Kaneohe, Oahu

Thank you for your comments on our proposed waterline project.

Our reply to your comments are:

1. "There should be a more detailed description of the cited quantity and pressure problems in parts of the present windward Oahu distribution network."

We do not have any quantity or pressure problems in our Windward transmission system and the EIS will be revised to indicate this.

Quantity and pressure problems in our water distribution system are not affected or can be cured by this project.

2. "It is not clear how this waterline will support the water distribution system since the system is not shown in any figures or discussed in any detail. This should be included in the EIS since it appears that this line would be a major link in that system."



April 21, 1980

Attached is a map showing our existing Windward District water system with the existing and proposed sources. This map will be included in the EIS.

- 3. "Page 4. How many construction phases are planned and how long will it take to complete all the phases? What is the breakdown of construction cost by source of funding? What funds, if any have been appropriated for this project?"

The construction work is to be accomplished in two parts.

The total construction time estimated to complete the project is four years.

Monies for the entire project would be from the Department's capital improvement projects fund. Breakdown of the construction costs are:

Part A	(Waihee Line Booster to Kahaluu Tunnel)	= \$4,020,000
Part B, Phase I	(Kahaluu Tunnel to Kahekili Hwy.)	= \$ 540,000
Phase II	(Kahekili Hwy. to Haiku Road)	= \$1,540,000
Phase III	(Haiku Road to Keaahala Road)	= \$ 900,000
Phase IV	(Keaahala Road to Kaneohe Bay Dr.)	= \$1,750,000

To date, no funds have been appropriated for the construction of the project.

- 4. "Page 4. A Windward Oahu facilities plan for sources and transmission lines for the next decade is mentioned on this page. Assuming this waterline project is part of the implementation of this plan, has there been an assessment and determination made on the overall plan and its environmental impacts? If not, the assessment process being used would appear piecemeal."



April 21, 1980

We have not made an assessment or determination on the Windward Oahu facilities plan. Since the plan is upgraded as needed, an EIS on the portion of the plan to be implemented would contain the latest information then available and would save effort, monies, and time that would be expended on a plan that would eventually become dated.

5. "Page 5. The last sentence appears outdated. What is the status of the development plans for windward Oahu?"

The last sentence is still applicable. Should water service from the existing 30-inch transmission main be temporarily cut off, the areas of Kailua, Maunawili, Olomana, and Waimanalo would experience a water shortage.

We are presently accelerating our well development projects in the Windward District.

6. "Figure 3. It appears that the conservation district will be crossed and therefore will require a Conservation District Use Application from the Department of Land and Natural Resources. This would come after the issuance of the SMA permit."

The project will require an SMA permit and a Conservation District Use permit. These permit requirements will be noted in the revised document.

7. "Page 13. Do the described soils present any problems for the construction of the pipeline? Will this project affect or be affected by the flood control project at Kahaluu?"

We do not anticipate any soil stability problems during construction of the pipeline.

Any effects this project may have on the Kahaluu Flood Control project will be resolved when we apply for a Corps of Engineers Permit under Section 404.



April 21, 1980

8. "Page 22. Since the project will require an SMA permit there should be some discussion on how this project relates to the Coastal Zone Management policies and guidelines."

A discussion on how this project relates to the Coastal Zone Management policies and guidelines will be included in the revised environmental document.

9. "Page 26. Please detail your reasoning on why a large waterline such as that proposed is not an 'inducer of growth.'"

We view our municipal water supply as a support facility. Growth is attributable mainly to land use plans and policy.

Water demand will inevitably increase as our population increases. By restricting transport of water because of main size will only create hardships. Whether groundwater or other alternative water sources are developed, pipelines are needed to convey the water to where it is needed.

10. "The issue of streamflow is not thoroughly discussed. The indirect impacts of providing a capacity to transmit water out of the watersheds and streams is not discussed. Any new source developments on the windward side of Oahu may benefit windward residents as claimed, however, it may not benefit the present users of the stream nor the aquatic species in those streams. A more detailed discussion on this topic is warranted."

The proposed project will increase the carrying capacity of our existing transmission system.

As we develop our future sources, the EIS's for each source will discuss any impacts to water users in the affected areas and the impact to aquatic life in any impacted stream.

11. "Page 27. Since there is no detailed discussion of potential dewatering of streams from further water development projects such as this one, the statement,



Mr. Richard O'Connell
Page 5

April 21, 1980

'no adverse long term effects are expected,' lacks substantiation. The same statement holds true for the conclusion on page 29 that there will be no long term losses of environmental resources."

Dewatering of streams for pipeline crossings are only temporary and would not cause any adverse long term effects. Construction for the stream crossing will be scheduled for the dry summer periods and in conformance to the Corps of Engineers Permit.

There will be no long term losses of environmental resources since the stream and roadways would be restored to almost pre-construction conditions.

12. "Page 32. The resources used in the construction of the pipeline should also be mentioned in this section."

The resources used in the construction will be mentioned in the section on "Irreversible and Irretrievable Commitments of Resources."

13. "Noise permits from the Department of Health and the CDUA mentioned above should be included in the list of necessary approvals."

We will include the Noise Permit (Department of Health) and the CDUA (Department of Land and Natural Resources) in the list of necessary approvals.

We also acknowledge receipt of the letters from the U. S. Coast Guard and the State's Department of Agriculture.

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

Attach

cc: William Hee & Associates

GEORGE R. ARIYOSHI
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
860 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

RYOKICHI HIGASHIONNA, PH.D.
DIRECTOR

DEPUTY DIRECTORS
JAMES R. CARRAS
JAMES B. MCCORMICK

JACK K. SUWA
JONATHAN K. SHIMADA, PH.D.
IN REPLY REFER TO:

March 31, 1980

STP 8.6135

Dr. Richard O'Connell
Director
Office of Environmental
Quality Control
550 Halekauwila St., Room 301
Honolulu, Hawaii 96813

Dear Dr. O'Connell:

Subject: Environmental Impact Statement
42-Inch Waterline from Waihee
Booster Station to Kaneohe

Thank you for giving us the opportunity to review the above-captioned statement.

The proposed alignment of the waterline is in conflict with our proposed widening of Kahekili Highway and of its interchange with Likelike Highway. We request that the proposing party coordinate its project with our Highways Division.

With reference to pages 23 and 30, the normal daylight working hours on State highways are from 8:30 a.m. to 3:30 p.m.

Very truly yours,

A handwritten signature in cursive script that reads "Ryokichi Higashionna".

Ryokichi Higashionna
Director of Transportation

RECEIVED
APR 21 1980

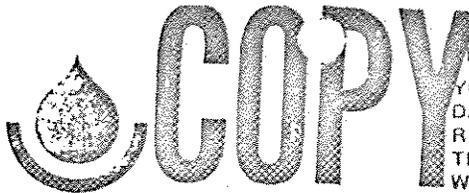
William Hee & Associates, Inc.

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA

HONOLULU, HAWAII 96843



HONORABLE FRANK F. FASI, Mayor
YOSHIE H. FUJINAKA, Chairman
DAT QUON PANG, Vice Chairman
RYOKICHI HIGASHIONNA
TERESITA R. JUBINSKY
WALLACE S. MIYAHIRA
ROBERT A. SOUZA
CLAUDE T. YAMAMOTO

April 14, 1980

KAZU HAYASHIDA
Manager and Chief Engineer

WJ
MS
78-173

Dr. Ryokichi Higashionna
Director of Transportation
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Dr. Higashionna:

Subject: Your Letter of March 31, 1980,
Commenting on the Environmental
Impact Statement (EIS) for the
42-Inch Waterline From Waihee
Booster Station to Kaneohe

Thank you for your comments on our proposed waterline project. Your letter will be appended to the revised EIS.

Our consultant, Mr. William Hee, will continue to coordinate our construction plans with your Highway Division.

We will also indicate in the revised environmental document that any work within the State highway will be confined to the hours of 8:30 a.m. to 3:30 p.m.

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental
Quality Control
William Hee & Assoc.

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APR 21 1980

William Hee & Associates, Inc.



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APR 2 11 53 AM '80

University of Hawaii at Manoa

dgc
p/c

Environmental Center
Crawford 317 • 2550 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7361

Office of the Director

March 24, 1980

RE:0305

Mr. Richard O'Connell, Director
Office of Environmental Quality Control
550 Halekauwila Street
Honolulu, Hawaii 96813

Dear Mr. O'Connell:

Draft Environmental Impact Statement
42-Inch Waterline from Waihee Booster Station to Kaneohe
Kaneohe, Koolaupoko, Oahu

The Environmental Center has reviewed the above cited document and we feel that it adequately addresses the potential environmental impacts associated with the project.

Thank you for the opportunity to review this document.

Sincerely,

Doak C. Cox
Doak C. Cox
Director

cc: ✓ Board of Water Supply
John Sorensen



COPY

April 7, 1980

Dr. Doak C. Cox
Director
Environmental Center
University of Hawaii at Manoa
Crawford 317
2550 Campus Road
Honolulu, Hawaii 96822

Dear Dr. Cox:

Subject: Your Letter of March 24, 1980 on the
Draft Environmental Impact Statement
for 42-Inch Waterline from Waihee
Booster Station to Kaneohe

Thank you for reviewing the EIS for our proposed
waterline project.

Your comment will be appended to the revised
environmental document.

Should you have questions or require additional
information, please call Lawrence Whang at 548-5221.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

cc: ✓ William Hee & Associates, Inc.

RECEIVED

APR 14 1980

William Hee & Assoc., Inc.

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OF HAWAII

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BUSUMU OMO, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES
EDGAR A. KAMASU
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

- DIVISIONS:
- CONSERVATION AND RESOURCES ENFORCEMENT
- CONVEYANCES
- FISH AND GAME
- FORESTRY
- LAND MANAGEMENT
- STATE PARKS
- WATER AND LAND DEVELOPMENT

March 24, 1980

REF NO.: APO-1469

Am
P/E

Office of Environmental
Quality Control
550 Halekauwila Street
Honolulu, HI 96813

Gentlemen:

We have reviewed the EIS for a 42 inch water main from Waihee Road along Kahekili and Likelike Highways to Kam Highway with a 30 inch spur to Kahaluu Tunnel.

The purpose of the project is to develop a system which eventually will provide water from Windward Oahu to Honolulu. This would alleviate dependence on water drawn from Halawa.

As described, the proposed project will have no adverse, long term impacts upon fisheries. Mitigative measures will be needed to minimize silt discharge into streams and coastal waters during construction. In addition, during disinfection of the pipeline with chlorine, extreme caution must be exercised to reduce chlorine concentration to a safe level before flushing.

Because routing of the 42 inch line follows some of the busiest highways on Windward Oahu, we recommend close attention to mitigating conflicts with traffic.

Be advised that the 30 inch spur to Kahaluu Tunnel lies on Conservation land and that a permit from this agency must be applied for.



Am

Office of Environmental
Quality Control
Page 2
March 24, 1980

At the appropriate time, we strongly suggest describing the sources of water for this system and plans for use of the water. In particular the impact on agriculture, stream life and estuarine systems should be discussed.

Very truly yours,



SUSUMU ONO, Chairman
Board of Land and Natural Resources

cc: Board of Water Supply
DOWALD
Land Management
Fish & Game

WATER SUPPLY

COUNTY OF HONOLULU

SOUTH BERETANIA

HONOLULU, HAWAII 96843



COPY

FRANK F. FASI, Mayor
CAROLIE H. FUJINAKA, Chairman
QUON PANG, Vice Chairman
YOKICHI HIGASHIONNA
RESITA R. JUBINSKY
LANCE S. MIYAHIRA
ROBERT A. SOUZA
CLAUDE T. YAMAMOTO

April 7, 1980

wh

KAZU HAYASHIDA
Manager and Chief Engineer

Mr. Susumu Ono
Chairman
Board of Land and
Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ono:

Subject: Your Letter of March 24, 1980
on the EIS for a 42-Inch
Waterline from Waihee Booster
Station to Kaneohe

Thank you for your comments on the environmental document.

We will make every effort to minimize silt discharge into waterways and will exercise caution when the chlorinated water used for the disinfection of the pipeline is released to the environment.

As mentioned in the environmental document, work will be restricted to non-peak traffic hours and the contractor will be required to utilize off-duty police officers or flag persons to direct traffic around the construction. The work will also be subject to the State Highway requirements for work performed along public roadways.

We will apply for a Conservation District Use Permit before we implement the project.

The effects on agriculture, stream life, and estuarine systems will be discussed in the environmental impact statements for the development of each future source needed to support this project.

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APR 10 1980

William Hee & Assoc., Inc.



Mr. Susumu Ono

-2-

April 7, 1980

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

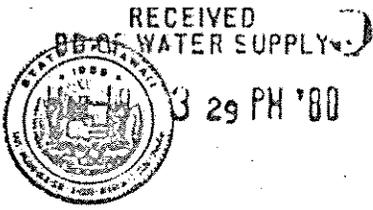
Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental
Quality Control
William Hee & Associates

GEORGE R. ARIYOSHI
GOVERNOR



FRANKLIN Y. K. SUNN
EXECUTIVE DIRECTOR

WILLIAM A. HALL
ASST. EXEC. DIRECTOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P. O. BOX 17607
HONOLULU, HAWAII 96817

IN REPLY REFER

March 14, 1980

TO: 4-105/584

Am
P/E

Office of Environmental
Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Gentlemen:

SUBJECT: EIS for 42-Inch Waterline from Waihee
Booster Station to Kaneohe

The Hawaii Housing Authority has reviewed the EIS for the subject project and has no specific comments to offer relative to the proposed action. The Authority is, however, generally supportive of this action as it will serve as a substantial betterment to Oahu's water transmission network.

Thank you for allowing us the opportunity to comment on this matter.

Sincerely,

FRANKLIN Y. K. SUNN
Executive Director

cc: DSSH
✓ Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96813

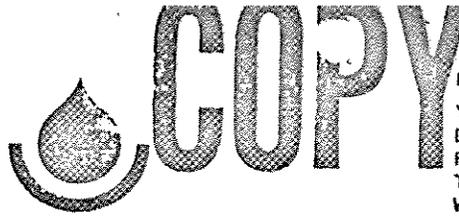
On

OFFICE OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

30 SOUTH BERETANIA

HONOLULU, HAWAII 96843



FRANK F. FASI, Mayor
YOSHIE H. FUJINAKA, Chairman
DAT QUON PANG, Vice Chairman
RYOKICHI HIGASHIONNA
TERESITA R. JUBINSKY
WALLACE S. MIYAHIRA
ROBERT A. SOUZA
CLAUDE T. YAMAMOTO

March 25, 1980

KAZU HAYASHIDA
Manager and Chief Engineer

Mr. Franklin Y. K. Sunn
Executive Director
Hawaii Housing Authority
P. O. Box 17907
Honolulu, Hawaii 96817

Dear Mr. Sunn:

Subject: Your Letter of March 14, 1980, on
the Environmental Impact Statement
for the 42-Inch Waterline from
Waihee Booster Station to Kaneohe

Thank you for your comment on our proposed waterline project. Your comment will be appended to the revised environmental document.

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental
Quality Control
William Hee & Assoc., Inc.



MAR 31 1980

William Hee & Assoc., Inc.

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(P)1271.0

MAR 11 1980

Office of Environmental
Quality Control
550 Halekauwila Street
Room 301
Honolulu, Hawaii 96813

Gentlemen:

Subject: Environmental Impact Statement for
42-Inch Waterline from Waihee
Booster Station to Kaneohe

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

The project will not have any adverse environmental
effect on any existing or planned facilities serviced by
our department.

Very truly yours,

RIKIO NISHIOKA
State Public Works Engineer

MI:jm

cc: Board of Water Supply

MAR 24 1980

Y. NISHIOKA & ASSOCIATES, Inc.



COPY

March 18, 1980

Mr. Hideo Murakami
Comptroller
Department of Accounting
and General Services
P. O. Box 119
Honolulu, Hawaii 96810

Attention Mr. Rikio Nishioka

Dear Mr. Murakami:

Subject: Your Letter of March 11, 1980 on the
EIS for 42-Inch Waterline from Waihee
Booster Station to Kaneohe

Thank you for your comments on our proposed project.

Should you have questions or require additional
information, please call Lawrence Whang at 548-5221.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental
Quality Control
William Hee & Associates

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MAR 24 1980

WATER SUPPLY & ASSOCIATES, INC.

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801
March 11, 1980

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GEORGE A. L. YUEN
DIRECTOR OF HEALTH

~~Audrey W. Mertz, M.D., M.P.H.~~
Deputy Director of Health

Henry N. Thompson, M.A.
Deputy Director of Health

James S. Kumagai, Ph.D., P.E.
Deputy Director of Health

am
14
1/2

In reply, please refer to:
File: EPHS - SS

MEMORANDUM

To: Mr. Kazu Hayashida, Manager and Chief Engineer
Board of Water Supply

From: Deputy Director for Environmental Health

Subject: Environmental Impact Statement (EIS) for 42-Inch Waterline
from Waihee Booster Station to Kaneohe, Kaneohe, Koolaupoko,
Oahu

Thank you for allowing us to review and comment on the subject EIS. On the basis that the project will comply with all applicable Public Health Regulations, please be informed that we do not have any objections to this project.

We realize that the statements are general in nature due to preliminary plans being the sole source of discussion. We, therefore, reserve the right to impose future environmental restrictions on the project at the time final plans are submitted to this office for review.

Melvin K. Koizumi

MELVIN K. KOIZUMI

cc: Office of Environmental Quality Control

117 20 180

am

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA

HONOLULU, HAWAII 96843



COPY

HANK F. FASI, Mayor
TOSHIE H. FUJINAKA, Chairman
PAT QUON PANG, Vice Chairman
YOKICHI HIGASHIONNA
TERESITA R. JUBINSKY
WALLACE S. MIYAHIRA
ROBERT A. SOUZA
CLAUDE T. YAMAMOTO

wh

March 19, 1980

KAZU HAYASHIDA
Manager and Chief Engineer

Mr. Melvin K. Koizumi
Deputy Director of Health
Department of Health
P. O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Koizumi:

Subject: Your Memorandum of March 11, 1980,
Commenting on the EIS for our
42-Inch Waterline from Waihee
Booster Station to Kaneohe

Thank you for your comments on our proposed waterline
EIS.

Should you have questions or require additional
information, please call Lawrence Whang at 548-5221.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental
Quality Control
William Hee & Associates

RECEIVED
MAR 24 1980

WILLIAM HEE & ASSOCIATES, Inc.

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L. Whiting

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BD OF WATER SUPPLY

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MAR 7 4 22 PM '80

State of Hawaii
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 Diamond Head Road
Honolulu, Hawaii 96816

04 MAR 1980

HIENG

Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii '96813

Gentlemen:

42-Inch Waterline from Waihee
Booster Station to Kaneohe

Thank you for sending us a copy of the above subject Environmental
Impact Statement. We have no comments to offer at this time. The
attached document is being forwarded to the Commission.

Yours truly,

signed

WAYNE R. TOMOYASU
Major, CE, HARNG
Contr & Engr Officer

cc: Board of Water Supply

wh
COPY

March 13, 1980

Major Wayne R. Tomoyasu
Office of the Adjutant General
Department of Defense
3949 Diamond Head Road
Honolulu, Hawaii 96816

Dear Major Tomoyasu:

Subject: Your Letter of March 4, 1980 on
the Environmental Impact Statement
for the 42-Inch Waterline from
Waihee Booster Station to Kaneohe

Thank you for reviewing and commenting on the EIS for
our proposed 42-inch waterline.

Should you have questions or require additional information,
please contact Lawrence Whang at 548-5221.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Manager and Chief Engineer

cc: William Hee and Assoc.

RECEIVED
MAR 13 1980

William Hee & Assoc., Inc.

GEORGE R. ARIYOSHI
GOVERNOR



JOHN FARIAS, JR.
CHAIRMAN, BOARD OF AGRICULTURE
YUKIO KITAGAWA
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
1428 SO. KING STREET
HONOLULU, HAWAII 96814

March 4, 1980

MEMORANDUM

To: Office of Environmental Quality Control
Subject: EIS for 42-Inch Waterline from Waihee Booster
Station to Kaneohe

The environmental impact statement has been reviewed by
the Department of Agriculture, and we have no comments
to offer.

We appreciate the opportunity to comment.

A handwritten signature in black ink, appearing to read "John Farias, Jr.", is written over the typed name and title.

JOHN FARIAS, JR.
Chairman, Board of Agriculture

P.S. The EIS is returned herewith.

RECEIVED
BD OF WATER SUPPLY

APR 10 3 07 PM '80

STATE OF HAWAII
DEPARTMENT OF PLANNING AND
ECONOMIC DEVELOPMENT
P. O. Box 2359
Honolulu, Hawaii 96804

Mar. ✓
Asst. Mgr. ✓
PIE

April 7, 1980

Ref. No. 0988

Mr. Richard L. O'Connell, Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Mr. O'Connell:

SUBJECT: 42-Inch Waterline from Waihee Booster Station
to Kaneohe, EIS - Kaneohe, Koolaupoko, Oahu

We have reviewed the environmental impact statement (EIS) for the subject project and have the following comments for your consideration.

Since this project has been described in the EIS as a link in the island-wide transmission network, the following information should be included in the EIS:

1. A map showing the relationship of this project to the existing island-wide transmission network.
2. The total daily flow from windward Oahu sources, as well as the daily total distribution of this flow to both the windward Oahu and Honolulu Districts.

We feel that the above information would assist in providing a better perspective relative to the project's significance in the island-wide network.

Thank you for the opportunity to review this statement.

Sincerely,



Hideto Kono

cc: Board of Water Supply
City and County of Honolulu

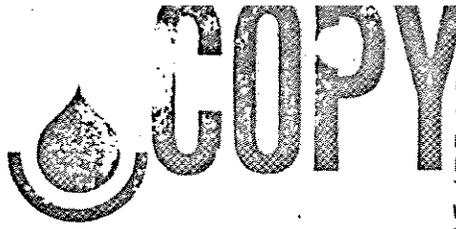


BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA

HONOLULU, HAWAII 96843



78-193

FRANK F. FASI, Mayor
YOSHIE H. FUJINAKA, Chairman
DAT QUON PANG, Vice Chairman
RYOKICHI HIGASHIONNA
TERESITA R. JUBINSKY
WALLACE S. MIYAHIRA
ROBERT A. SOUZA
CLAUDE T. YAMAMOTO

April 21, 1980

KAZU HAYASHIDA
Manager and Chief Engineer

RECEIVED

APR 25 1980

William Hee & Assoc., Inc.

Mr. Hideto Kono
Director
Department of Planning and
Economic Development
P. O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Kono:

Subject: Your Letter of April 7, 1980,
Commenting on the Environmental
Impact Statement (EIS) for the
42-Inch Waterline From Waihee
Booster Station to Kaneohe

Thank you for your comments on the EIS for our proposed waterline project.

We are attaching a map showing the relationship of the proposed project to the existing island-wide transmission system and a table showing the 1979 yields from our Windward District sources. The map and table will be included in the revised EIS.

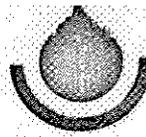
Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

Attach.

cc: Office of Environmental
Quality Control
William Hee & Assoc.

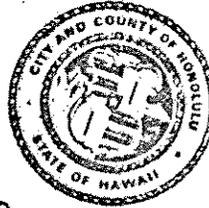


COPY

S. Whang

FRANK F. FASI
MAYOR

DEPT. OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 828-4411



MAR 14 1980

TYRON
DII

LU2/80-9
80/EC-4

*Am
P/E*

Mr. Richard Connell, Director
Office of Environmental Quality Control
State of Hawaii
550 Halekula Street, Room 301
Honolulu, Hawaii 96813

Dear Mr. Connell:

Draft Environmental Impact Statement
42-Inch Waterline from Waihee
Booster Station to Kaneohe
Kaneohe, Koolauloko, Oahu

We have reviewed the above and offer the following comments:

1. Reference: Objectives, page 1

Comment: The EIS should elaborate on how the proposed waterline supports the Oahu General Plan.

2. Reference: Water Facilities Requirements, page 4

Comment: The EIS should identify the new sources being planned along the windward coast and their approximate yields. Otherwise, we believe the document adequately identifies and assesses the impacts and possible mitigation measures associated with the proposed waterline.

Should you have any questions, please contact Mr. Scott Ezer of our staff at 523-4077.

Very truly yours,

Tyrone T. Kusao
TYRONE T. KUSAO
Director of Land

Board of Water Supply

WI

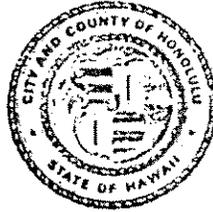
DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

RECEIVED
BD OF WATER SUPPLY

MAR 14 11 01 AM '80

GEORGE S. MORIGUCHI
CHIEF PLANNING OFFICER



FRANK F. FASI
MAYOR

DGP2/80-576 (CT)

Am *[signature]*
p/e

March 13, 1980

Mr. Richard L. O'Connell, Director
Office of Environmental Quality Control
State of Hawaii
550 Halekauwila Street, Room 301
Honolulu, Hawaii

Dear Mr. O'Connell:

Environmental Impact Statement for 42-Inch
Waterline from Waihee Booster Station to
Intersection of Likelike Highway and Kamehameha
Highway, Dated February 1980

Under Objectives (p. 1), it is stated:

"A 42" transmission main is needed to meet current problems of pressure and quantity in parts of the windward Oahu water distribution network. It will provide a basic infrastructure element necessary to support the Honolulu General Plan. It will also serve as a substantial link in the island-wide transmission network."

Later, under Water Facilities Requirements (p. 4), it is indicated:

"The nature of water supply and transmission facilities requires long range plans. Accordingly, the Board of Water Supply in 1976 developed a Windward Oahu facilities plan (sources and transmission lines) for the next decade, based on estimates of demand to year 2020. This plan is reviewed regularly and is updated as required. Although the plan is for the Windward District, it must be understood that water supply problems are inter-related to other areas of Oahu, especially to metropolitan Oahu."

[signature]

"The need for the 42" waterline is twofold:

- (1) From a short-range viewpoint the additional transmission capacity will provide for operational reliability and flexibility.
- (2) From a long-range viewpoint, the line is necessary as a vital link in transporting water from new sources being planned along the Windward coast to the Windward area and to Honolulu."

The proposed 42" transmission main is not an element of either the 2020 Plan of 1971 (see map, Oahu/Service Area No. 2, Water Sources and Areas Served, 1985 - 2020 (p. 29)), or the revised 2020 Plan of 1975 (see map, Oahu/Windward District, Water Sources and Areas Served - 2020, Figure 10, p. 35)). The 1976 Windward Oahu Water Facilities Plan was not available for review.

From what is presented in the environmental impact statement, it is difficult to see how the proposed project fits into the overall water supply and distribution network for the Windward District, much less for the Oahu metropolitan area.

Rather than showing just the project area, the impact statement should show the windward system from Waihee to Waimanalo, indicating existing demands, flows and transmission main sizes; and proposed demands, flows and transmission main sizes. The impact statement should indicate where there are problems of quantity and pressure.

The information above would provide a better understanding of the need for this \$8.75 million project and its relationship to the windward and metropolitan Oahu water facilities plans.

Thank you for affording us the opportunity of reviewing the impact statement.

Sincerely,



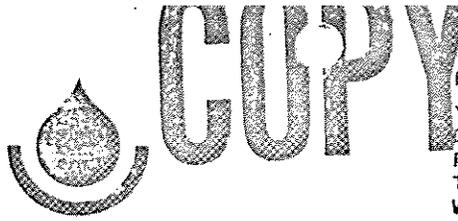
GEORGE S. MORIGUCHI
Chief Planning Officer

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA

HONOLULU, HAWAII 96843



FRANK F. FASI, Mayor
YOSHIE H. FUJINAKA, Chairman
DAT QUON PANG, Vice Chairman
RYOKICHI HIGASHIONNA
TERESITA R. JUBINSKY
WALLACE S. MIYAHIRA
ROBERT A. SOUZA
CLAUDE T. YAMAMOTO

April 8, 1980

KAZU HAYASHIDA
Manager and Chief Engineer

TO : MR. GEORGE MORIGUCHI
CHIEF PLANNING OFFICER
DEPARTMENT OF GENERAL PLANNING

FROM : KAZU HAYASHIDA
BOARD OF WATER SUPPLY

RECEIVED

APR 14 1980

William Hee & Assoc., Inc.

SUBJECT: YOUR LETTER OF MARCH 13, 1980, ON THE ENVIRONMENTAL
IMPACT STATEMENT FOR 42-INCH WATERLINE FROM WAIHEE
BOOSTER STATION TO INTERSECTION OF LIKELIKE HIGHWAY
AND KAMEHAMEHA HIGHWAY

Thank you for your comments on our proposed waterline project.

In answer to your comments, we offer the following:

1. "From what is presented in the environmental impact statement, it is difficult to see how the proposed project fits into the overall water supply and distribution network for the Windward District, much less for the Oahu metropolitan area."

The proposed 42-inch waterline is a major transmission main that would allow water from proposed water sources in the northern sector of the Windward District to be conveyed to areas where water demand is expected to increase. Most of the anticipated population increases will be in the southern sector of the District based on your department's population projections.

Our present transmission main will be too small to meet the pressure and flow requirements when the new sources come on-line. This project is part of the orderly implementation of supporting water facilities serving the Windward and Honolulu area.

Also, for your information, the Windward District water system is connected to the Honolulu District water system by a 36-inch main around Waimanalo. This connection allows



MR. GEORGE MORIGUCHI
PAGE 2

APRIL 8, 1980

for any excess water from the Windward District to supplement the sources serving the Honolulu District.

2. "Rather than showing just the project area, the impact statement should show the Windward system from Waihee to Waimanalo, indicating existing demands, flows and transmission main sizes; and proposed demands, flows and transmission main sizes. The impact statement should indicate where there are problems of quantity and pressure."

We do not have any existing problems with quantity and pressure in our Windward District transmission system and the EIS will be corrected to reflect this. As mentioned previously, the project will increase the carrying capacity of the existing transmission system.

Attached is a map showing the locations of our existing and some of our future sources.

Also attached is a table listing the sustainable yield and fiscal year 1979 yield for our existing Windward sources.

Consumption in the Windward District is shown on the attached table from our "Annual Report and Statistical Summary," (1979). Future demands from our system is projected by Water Districts. For the Windward District, the projected demands are as follows:

<u>Year</u>	<u>Demand</u>
1979	17.2 (actual)
1980	18.7
1985	19.6
1990	20.4
1995	21.0
2000	22.2



MR. GEORGE MORIGUCHI
PAGE 3

APRIL 8, 1980

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Manager and Chief Engineer

Attach.

cc: OEQC
~~William~~ Hee & Associates

80-750

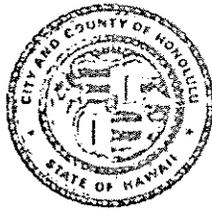
Waihee

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE 523-4161

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Mar 12 3 53 PM '80



FRANK F. FASI
MAYOR

BARRY CHUNG
DIRECTOR

EDWARD Y. HIRATA
MANAGING DIRECTOR

MYRA M. TAKASAKI
DEPUTY DIRECTOR

March 12, 1980

*Asst. Mgr. JHR
P/E*

Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Gentlemen:

Subject: Environmental Impact Statement
42-Inch Waterline from Waihee
Booster Station to Kaneohe

We have reviewed the Environmental Impact Statement
for the installation of the 42-inch waterline from Waihee
to Kaneohe and have no comment.

As requested by the Environmental Quality Commission,
we are returning the copy of the EIS to them.

Very truly yours,

Barry Chung
Barry Chung

cc: Board of Water Supply
Environmental Quality Commission

12-12-80



COPY

March 17, 1980

TO MR. BARRY CHUNG
DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM KAZU HAYASHIDA
BOARD OF WATER SUPPLY

SUBJECT: YOUR LETTER OF MARCH 12, 1980 ON THE ENVIRONMENTAL
IMPACT STATEMENT FOR THE 42-INCH WATERLINE FROM
WAIHEE BOOSTER STATION TO KANEOHE

Thank you for reviewing the EIS for our proposed waterline project. Your comment will be appended to the revised EIS.

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

KAZU HAYASHIDA
Manager and Chief Engineer

cc: William Hee & Associates, Inc.

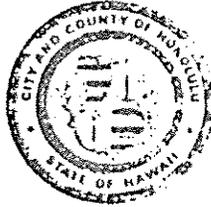
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MAR 24 1980

WILLIAM HEE & ASSOCIATES, INC.

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR



March 18, 1980

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MAR 19 3 53 DIRECTOR
TE2/80-604

John
P/e

Office of Environmental Quality
Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Gentlemen:

Subject: Your Letter Dated February 28, 1980
Regarding E.I.S. for 42-Inch Waterline
from Waihee Booster Station to
Intersection of Likelike Highway and
Kamehameha Highway

We find that the traffic impact resulting from the proposed
project has been adequately addressed in the E.I.S.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Akira Fujita".

AKIRA FUJITA
Acting Director

cc: Board of Water Supply

Handwritten initials, possibly "P/e", in the bottom right corner of the page.



COPY

FRANK F. FASI, Mayor
HIE H. FUJINAKA, Chairman
QUON PANG, Vice Chairman
FUKICHI HIGASHIONNA
TESITA R. JUBINSKY
WALLACE S. MIYAHIRA
ROBERT A. SOUZA
CLAUDE T. YAMAMOTO

March 24, 1980

KAZU HAYASHIDA
Manager and Chief Engineer

TO : MR. AKIRA FUJITA
ACTING DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

FROM : KAZU HAYASHIDA
BOARD OF WATER SUPPLY

SUBJECT: YOUR LETTER OF MARCH 18, 1980 ON THE ENVIRONMENTAL
IMPACT STATEMENT FOR THE 42-INCH WATERLINE FROM
WAIHEE BOOSTER STATION TO INTERSECTION OF LIKELIKE
HIGHWAY AND KAMEHAMEHA HIGHWAY

Thank you for your comment on our proposed waterline project. Your comment will be appended to the revised environmental document.

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental
Quality Control
William Hee and Associates, Inc.

RECEIVED
MAR 31 1980
WILLIAM HEE AND ASSOCIATES, INC.

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R SUPPLY

53 APR '80

80-1080

March 31, 1980

Office of Environment Quality Control
550 Halekauwila St.
Honolulu, HI 96813

Ladies and Gentlemen,

I have been authorized by Neighborhood Board #29, The Kahaluu Neighborhood Board, to make its comments concerning the 42" water main from the Waihee Booster Station in Kahaluu to Kaneohe. The Neighborhood Board has long been concerned about the taking of water from Windward Oahu to Honolulu. Its concern has centered on the fact that water taken from Windward Oahu is water taken away from diversified agriculture. It strongly supported the Waihee Taro Farmers when the Board of Water Supply dried up Waihee Stream.

We feel that the EIS is inadequate because it does not address the effects on agriculture of exporting 40% of the water developed by year 2000 to urban Honolulu (15 mgd of 37 mgd). Since present usage in Windward is 17 mgd, this means that 75% of new water developed in Windward (15 mgd of 20 mgd) is for use outside of Windward. What happens to the farmers of Windward Oahu when this water diversion? Will they, like the Waihee Taro Farmers have to go to court to protect their water?

This EIS is inadequate and should not be accepted until it includes the impact on agriculture in Windward Oahu.

Sincerely,

Robert S. Nakata

Robert S. Nakata
Board Member

RSN:lt

RECEIVED

APR 23 1980

William Hoo & Assoc., Inc.



COPY *wh*

April 17, 1980

Kahaluu Neighborhood Board #29
c/o Neighborhood Commission
City Hall, 4th Floor
Honolulu, Hawaii 96813

Gentlemen:

Subject: Your Letter of March 31, 1980,
Commenting on the Environmental
Impact Statement for the 42-Inch
Waterline From Waihee Booster
Station to Kaneohe

Thank you for your comments on our proposed project.

We will incorporate future agricultural water needs when we develop our Windward water resource development plan.

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental
Quality Control
William Hee & Assoc.

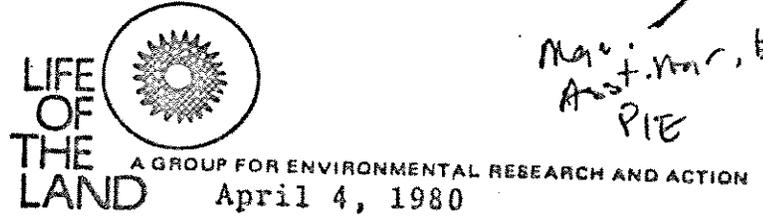
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APR 23 1980

William Hee & Assoc., Inc.

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Mr. Asst. Dir. PLE

Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

RE: 42-inch Waterline from Waihee to Kaneohe.

To Whom It May Concern:

Life of the Land is concerned that this study does not sufficiently examine the direct and possible over-all cumulative impacts of this project on future water resource development and management.

The following are our specific comments:

- 1. Assessment of probable impacts of the proposed action on the environment are inadequate.

This study does not directly address the impact the project could have on stream flows. It is expressly required in the EIS Regulations (1:42,e) that "consideration of all consequences in the environment, secondary or indirect, as well as primary or direct, shall be included."

We strongly disagree with the statement in this EIS charging that the water transmission line itself will not directly have an adverse impact on streamflow. We contend that this project is an integral part of the water resource development plans of the City & County of Honolulu, and, as such, it fails to thoroughly discuss the probable impact on water resources, streamflows, and water needs of agricultural activities on the Windward side of the island. Turning a blind eye on the related impacts of this project only serves to undermine the intent and regulations of the EIS process. Moreover, this inadequate study harms the public's right to know and to have a fair review of this project.

- 2. LOL questions the validity of the water resource data presented in this EIS.

Although there seems to be adequate need for a new pipeline to meet present demands for an increase in water quantity and pressure for Windward residents, we question whether the data used to support this need for a 42-inch water-line are valid and within reasonable bounds. This EIS projects that Windward water sources will supply 37mgd for island-wide use by the year 2000. We have found that the data used to base supply-and-demand projections are insufficient. A recent opinion published in the Hawaii Water Resources Plan, January 1979 (page 138), state that: "(a)lthough data on surface water quantity generally have been adequate, ground water data

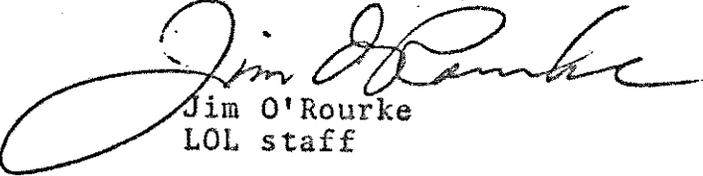
are incomplete, even at the general inventory level."

3. Population data projections are inconsistent.

Population projections for Windward Oahu vary in this study from 125,000, to 130,000, to 132,000. Which figure is being used for water demand projections?

. Thank you for giving us this opportunity to review and comment on this Environmental Impact Statement. Life of the Land would like to be consulted on any further developments of this project. We recommend that the project be recommended for further review in light of the comments presented above.

Mahalo & Aloha,



Jim O'Rourke
LOL staff

JBOR/rls

CC: Board of Water Supply
City and County of Honolulu

Kahaluu Neighborhood Board
Number 29

April 23, 1980

Mr. Jim O'Rourke
Life of the Land
404 Piikoi Street
Honolulu, Hawaii 96814

Dear Mr. O'Rourke:

Subject: Your Letter of April 4, 1980,
Commenting on the Environmental
Impact Statement (EIS) for the
42-Inch Waterline From Waihee
Booster Station to Kaneohe

Thank you for your comments on our proposed waterline project. Your letter will be appended to the revised environmental document.

We have the following reply to your comments:

1. Assessment of probable impacts of the proposed action on the environment are inadequate.

This study does not directly address the impact the project could have on stream flows. It is expressly required in the EIS Regulations (1:42, e) that "consideration of all consequences in the environment, secondary or indirect, as well as primary or direct, shall be included."

We strongly disagree with the statement in this EIS charging that the water transmission line itself will not directly have an adverse impact on streamflow. We contend that this project is an integral part of the water resource development plans of the City and County of Honolulu, and, as such, it fails to thoroughly discuss the probable impact of water resources, streamflows, and water needs of agricultural activities on the Windward side of the island. Turning a blind eye on the related impacts of this project only serves to undermine the intent and regulations of the EIS process. Moreover, this inadequate study harms the public's right to know and to have a fair review of this project.

April 23, 1980

We disagree with you on this matter. The impacts that need to be addressed in the EIS pertain only to the pipeline. Any discussion on source development and the impacts of the source development is not within the scope of this document but will be discussed in the impact statements for each source development project. For your information, we have attached a table showing existing and proposed water sources in the Windward District. This table will also be included in the EIS.

2. LOL questions the validity of the water resource data presented in this EIS.

Although there seems to be adequate need for a new pipeline to meet present demands for an increase in water quantity and pressure for Windward residents, we question whether the data used to support this need for a 42-inch water-line are valid and within reasonable bounds. This EIS projects that Windward water sources will supply 37 mgd for island-wide use by the year 2000. We have found that the data used to base supply-and-demand projections are insufficient. A recent opinion published in the Hawaii Water Resources Plan, January 1979 (page 138) state that: "although data on surface water quantity generally have been adequate, ground water data are incomplete, even at the general inventory level."

The proposed main size was based on the ultimate development of all potential Windward sources and the supply/demand projections are based on the best data available.

Your quote on the statement from the Hawaii Water Resources Plan (January 1979) applies island-wide and not just to the Windward area. In fact, there are very few private wells on the Windward side, and we feel that the data we have on our ground water sources are more than adequate; much less "incomplete."

3. Population data projections are inconsistent.

Population projections for Windward Oahu vary in this study from 125,000 to 130,000 to 132,000. Which figure is being used for water demand projections?

Mr. Jim O'Rourke
Page 3

April 23, 1980

We will be using the figure of 152,000 to represent the Windward population in the year 2000. The EIS will be revised to indicate only one projection.

Should you have questions or require additional information, please call Lawrence Whang at 548-5221.

Very truly yours,



KAZU HAYASHIDA
Manager and Chief Engineer

Attach.

MHS:vc

cc: K. Hayashida
L. Whang

80-1149

80-1149