FINAL

ENVIRONMENTAL IMPACT STATEMENT

FOR THE PROPOSED

WATERFRONT MANOR

CONDOMINIUM PROJECT

Waipio, Ewa District, Oahu

DECEMBER 22, 1980

CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 523-4411

FRANK F. FASI
MAYOR

TYRONE T. KUSAO
DIRECTOR

80/SMA-23(SM

January 9, 1981

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

Dear Mr. Bremner:

Revised Environmental Impact Statement (EIS)
Waterfront Manor Condominium Project
Herbert K. Horita Realty, Inc.

In accordance with Section 1:72 of the EIS Regulations implementing Chapter 343, HRS, we are notifying you of our acceptance of the above as an adequate fulfillment of the provisions of the Chapter. The four major unresolved issues are: (1) the amount of park dedication area for public vs. private use (6 acres total proposed), (2) the final detailed soils studies and the acceptability of using crushed rock as fill material where the soil is unstable, (3) the provision of low cost housing to be coordinated with the Department of Housing and Community Development, and (4) the redesign of the cane haul road to create a 90-degree intersection with the shorefront access road. We are transmitting a copy of this letter to the applicant.

Should you have any questions regarding this matter, please contact Sampson Mar of our staff at 523-4077.

Very truly yours,

MICHAEL M. McELROY
Director of Land Utilization

MMM:sl
Attach.

cc: Mr. Fred J. Rodriguez

DEPARTMENT OF LAND UTILIZATION January 9, 1981

ACCEPTANCE REPORT: ENVIRONMENTAL IMPACT STATEMENT (EIS)
WATERFRONT MAJOR CONDOMINIUM PROJECT
HERBERT K. HORITA REALTY, INC.

A. Background

The EIS was prepared for Herbert K. Horita Realty, Inc. by Environmental Communications, Inc. This document describes the anticipated environmental impacts of the development of the Waterfront Manor Condominium Project, including the construction of 863 condominium units in five (5) 10-story buildings, 1,400 feet long, 40-foot wide (curb-to-curb) access road within a 56-foot right-of-way, sidewalks, internal roadway, parking (1,337 spaces), recreation center, onsite and offsite utilities (water, sewer, drainage), and landscaping.

The proposed project lies entirely within the Special Management Area, as defined by Ordinance No. 4529, as amended. Accordingly, the project was assessed by the Department of Land Utilization (DLU), and an EIS was required of the applicant.

B. Procedures

1. The DLU issued an EIS Preparation Notice, which appeared in the "EQC (Environmental Quality Commission) Bulletin" of March 23, 1980, under the Register of Shoreline Protection Act Documents. This was distributed to all interested Federal, State, and City and county agencies, as well as public officials, community organizations, and private citizens.

2. Comments from consulted parties were received until April 23, 1980, allowing all parties the required 30-day minimum consultation required by Section 1:41(b) of the EIS Regulations. Twenty-three (23) parties submitted written comments during this period; eighteen (18) commenting letters required written responses, which were made by the applicant.

3. The Draft EIS was received by the EQC on November 5, 1980; notice of its availability appeared in the "EQC Bulletin" of November 8, 1980. The deadline for the public review period was then set for December 8, 1980. A list of reviewers is attached.

4. The applicant made a point-by-point response to all comments received, within the 14-day response period.

C. Content

The revised EIS meets all of the basic content and style requirements specified in Sections 1:42 and 1:43 of the EIS Regulations.

D. Response

The applicant made adequate point-by-point responses to all comments, and included them in the Revised EIS.

E. Determination

The Revised EIS is determined to be acceptable under the criteria for acceptance established in Section 1:71 of the EIS Regulations. However, there are four major unresolved issues, i.e., (1) the amount of park dedication area for public vs. private use (6 acres total proposed), (2) the final detailed soils studies and the acceptability of using crushed rock as fill material, where the soil is unstable, (3) the provision of low cost housing to be coordinated with the Department of Housing and Community Development and (4) the redesign of the cane haul road to create a 90-degree intersection with the shorefront access road.

This determination in no way implies a favorable recommendation on the applicant's request for any subsequent permits required by this department for this project, where applicable.

APPROVED Michael M. McElroy
MICHAEL M. McELROY
Director of Land Utilization

MMM:sl

TABLE OF CONTENTS

TABLE OF CONTENTS
(Continued)

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF EXHIBITS

1. SUMMARY

(1) Location of the Project Site. The Waterfront Manor 18.942-acre site is located generally between Middle Loch and Waipahu High School within the Waiawa-Waipio area of the Ewa District, Oahu. The site is identified by TMK 9-4-08:23.

(2) Project Description. Herbert K. Horita Realty, Inc., the owner and developer of the site, proposes to construct 863 condominium units in five (5), 10-story buildings on the project site. There will be a total of 682, one-bedroom units and 181, two-bedroom units. The Preliminary Site Plan includes the construction of a 1,400-foot long, 40-foot wide (curb to curb) access road within a 56 feet right-of-way. Shoulders and sidewalks will also be provided. This access road will be built to County standards and dedicated to the County upon completion. Other features include: private, internal roadways; a recreational center; parking (1,337 spaces); landscaping; onsite and offsite utility (water, sewage, drainage) improvements.

(3) Statement of Objectives. The developer will be achieving the "highest and best use" of the land under the present land use designation (which is Urban) and zoning (which is A-2). The project will also provide housing within an existing urban area where utilities and services are readily available. The developer will provide moderate-income housing, the details of which shall be worked out with the Department of Housing & Community Development and the necessary agreements signed prior to issuance of the building permit.

(4) Present Site Conditions. The site is presently vacant. Much of the site is overgrown in weed-type vegetation. An area of the site below Waipahu High School retains spring or drainage water and wetland vegetation (e.g. cattail, Great bulrush) exists. The remainder of the site (16+ acres) is dry and vegetation includes California grass, haole koa, and common ornamental and fruit trees. A variety of common birds and land fauna exist on the site. Because the Pearl Harbor area has several shallow ponds similarly suitable environment for waterbirds, three endemic Hawaiian waterbirds are known to inhabit the adjacent areas. These birds are the Hawaiian Stilt, Hawaiian Coot, and Hawaiian Galinulle. All three are identified on the existing Federal and State list of endangered species.

The project site is essentially a crescent-shaped parcel measuring approximately 2,000 feet long and 400 feet at its widest point. Topographically, the site varies considerably. The highest point is approximately 58 feet above mean sea level and the lowest point, 3 feet above mean sea level. A generalized topographic map is provided as Exhibit 9.

Historically the site was used for sugarcane cultivation, cattle grazing, and more recently, pig farming, watercress and ung-choi cultivation. Several wooden single family residences associated with the farming activities also existed. Because of man's previous alteration and use of the project site, no archaeological and/or historical sites are likely to exist on the property. A check with existing references indicate that there are no known historical/archaeological sites on the property or in the vicinity.

(5) Land Use Considerations. The site is designated Urban; the DLUM is medium density apartment, the zoning is A-2. The project is consistent with the A-2 zoning requirements. The site lies entirely within the Shoreline Management Area (SMA) as identified in Ordinance 4529. This means that the project is subject to review and approval of the City Council.

(6) Probable Impacts and Mitigation Measures.

Area	Probable Impact(s)	Mitigation Measure(s)
Flora	Minimal - elimination of vegetation is desirable because of weed-type plants. No species of plants are rare or endangered.	None required.
Fauna	Minimal - displacement of birds living on the site will occur during construction. After the project is occupied, these birds will probably return since they are adapted to an urban environment. Endemic waterbirds do not inhabit the site and should not be affected by the action.	None proposed.
Air Quality	Negative Impacts - direct impact will include fugitive dust during construction.	Strict adherence to County grading requirements, watering down the area.
	Long-term indirect impact will come from vehicular emissions. Carbon monoxide (CO) values adjacent to the project roadways the Waipio Point Access Road-Farrington Highway intersection will increase. By 1995, however, this increase will be insignificant.	Federal Clean Air Act requires new vehicles to adhere to strict vehicular emission standards. As new cars replace older cars, the CO will decrease.
Noise	Negative Impact - during construction to sitework and building. Limited to normal working hours.	Adherence to noise regulations and standards established by State and County.
	Long-Term Impact - indirectly from vehicles on adjacent roads. Typical noise from residential/recreational activities generated by residents.	Federal law requires "quieter" cars in the future. Noise codes enforced by police and/or health department personnel.
Drainage	Minimal - drainage improvements will be provided. Although runoff from the site will have chemical changes because of urban use; this change will be similar to other adjacent uses (LCC, Waipahu High School). The total volume of surface water entering Middle	On- and off-site drainage improvements.

	Loch will decrease because of the wells to be sealed on the site.	
Viewplanes	Negative Impact - because of buildings that will be visible from higher ground (80± feet above sea level), mauka of the site. This is unavoidable. Other residential areas will not be affected.	Unavoidable.
Land Use	Minimal - adjacent uses (e.g. institutional, Federal open space, single-family residences) are well established urban uses that will not be affected by the residential use of the property.	None required.
Potable Water	258,900 gallons per day of potable water will be needed for this project. Plans call for the development of an irrigation system using spring water for the Ted Makalena Public Golf Course. The potable water used by the golf (about 223,000 gpd) can be used by the project. This water exchange will result in no additional potable water being used from the Pearl City Freshwater Basin.	As stated, the provision that an irrigation system for the golf course is provided.
Sewage	Minimal - sewage generated by the project will be transmitted and treated at the Pearl City Sewage Treatment Plant.	None required.
Electricity	Minimal - 4 million kwh will likely be needed for the residences on the project site. Electricity is available and adequate.	None required.
Social Services & Community Facilities	Minimal - for the most all of these services and facilities are available and adequate. The rapid growth of the area has already included established recreational areas, shopping areas, fire and police stations, schools, medical facilities, and cultural centers. Public monies, in form of services and facilities (additional police personnel, bussing of school students, road maintenance) will be required for this project. These are normal services that the City provides to all residents. Benefits to the City from this project includes increased property tax and funds the City receives from the State and Federal taxes paid.	A recreational center and other recreational amenities/space will be provided within the project.
Transportation	Increase in vehicular traffic will occur. However, the present highway system has sufficient capacity to accommodate the vehicles which will be generated by the project site. Mass transit is available 700 feet from the project site.	None proposed.

(7) Alternatives. Several alternatives: different uses, designs, low-rise buildings, and a no-action alternative were considered.

2. PROJECT DESCRIPTION AND STATEMENT OF OBJECTIVES

2.1 Location of the Proposed Project. The Waterfront Manor site is generally located between Middle Loch and Waipahu High School, within the Waiawa-Waipio area of the Ewa District, Oahu, Hawaii. (See Figure 1, Location Map.) Waipahu High School lies mauka of the 18.942 acre project site. At the Leeward College end of the site lies a U.S. Naval Reservation site. Makai of the site is a 40-foot wide Hawaiian Electric Company (HECO) property and beyond HECO's property in a makai direction is Middle Loch. Across Waipio Point Access Road (on the Ewa side of the site) is a residential area (single-family homes); the Ted Makalena Public Golf Course is located approximately 2,500 feet from the project site, on the Ewa side of the Waipio Access Road. The site is identified by Tax Map Key 9-4-08:23.

2.2 General Description of the Action's Technical, Economic, Social, and Environmental Characteristics. Herbert K. Horita Realty, Inc., the owner and developer of the site, proposes to construct a total of 863 condominium units in five (5), 10-story buildings. The Preliminary Site Plan showing the location of the buildings, parking, recreational amenities, elevation, and unit and parking breakdown are provided in Figure 2. Preliminary plans for the units (size, layout) are provided in Appendix VI. The price of the units has not been determined.

Specific plans call for the following:

(1) Construction of a 1,400-foot long, 40-foot wide (curb to curb), access road within a 56-foot wide right-of-way with 8-foot shoulders and 4-foot wide sidewalks on both sides. The proposed road is shown on Figure 2. It will be constructed conform to County standards and dedicated to the County upon completion.

The road alignment was set in 1971 by the City's Detailed Land Use Map (DLUM) for the area (Ordinance 3842). Portions of the road are owned by the Waipahu High School. Park Engineering, Inc., the engineering consultant firm, has received the preliminary conceptual approval for the use of the land for the 56-foot wide access road (see Exhibit 6).

(2) Private, internal driveways and roads will also be constructed; these will provide circulation and access to the four (4) buildings and the recreational area.

(3) A recreational center complex will be constructed in the approximate middle of the project site. Plans call for the building of tennis courts, a basketball court, a volleyball court, racquetball courts, and parking for the recreational center. This recreational center will be for the private use of residents and their guests. Each building will have its own swimming pool and sun deck area.

(4) In addition to the recreational center, there will be a total of approximately 6.0± acres in open space, additional recreational areas (for the individual buildings), pedestrian paths, and walkways. These areas will be used for passive and semi-passive recreational activities (i.e., jogging, walking).

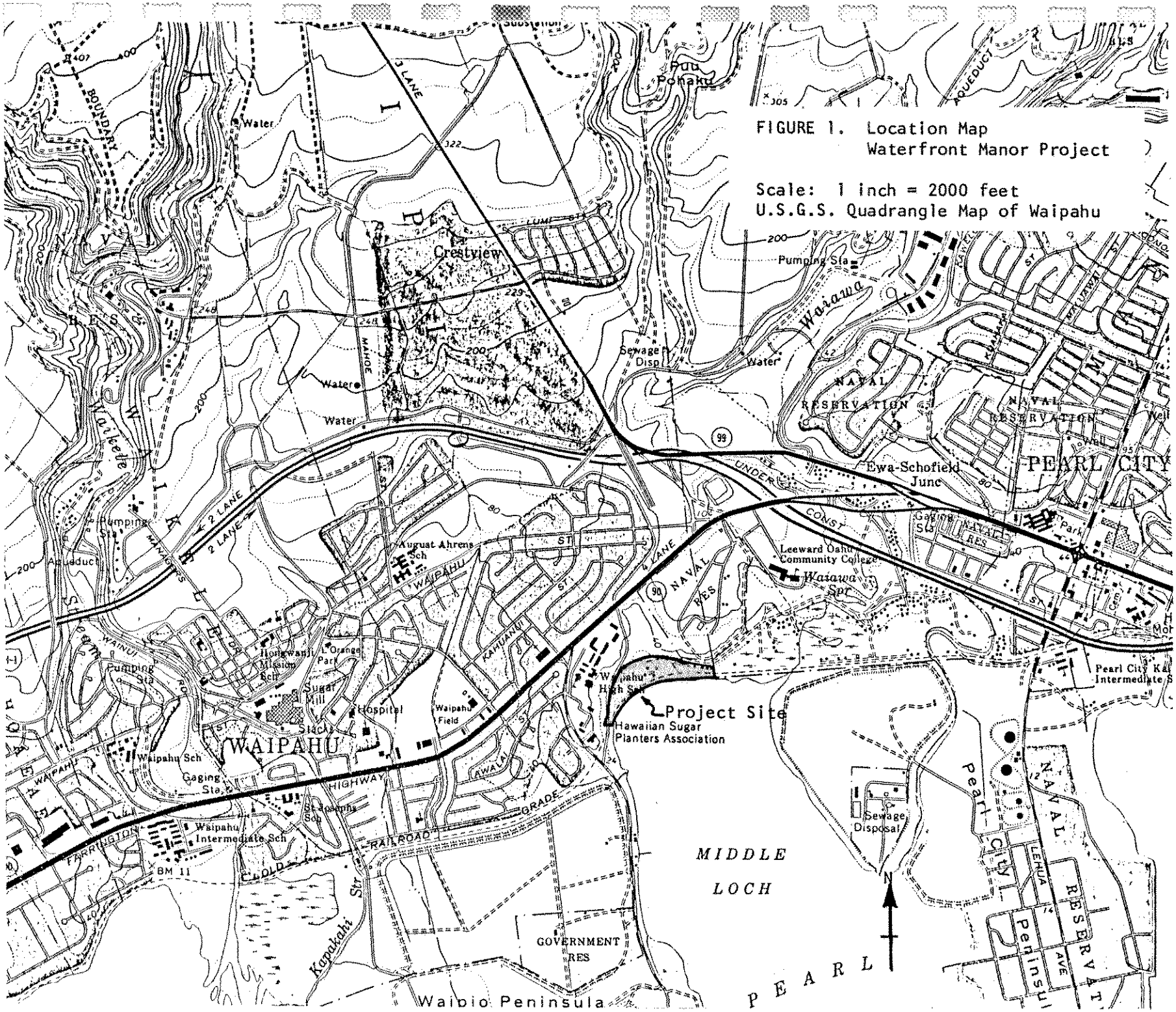
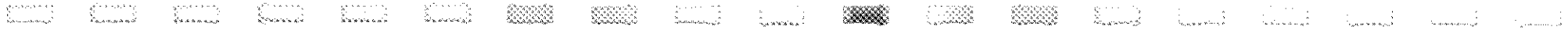


FIGURE 1. Location Map
Waterfront Manor Project

Scale: 1 inch = 2000 feet
U.S.G.S. Quadrangle Map of Waipahu



(5) Project plans include landscaping along the roadways and parking areas. Landscaping in the form of grassing, planting of container size and specimen trees will enhance the site from an aesthetic standpoint. Landscaping will also provide a ground cooling effect, mitigate soil erosion, and aid in blending the architectural forms of buildings into the landform. Landscaping will be provided in the 40-foot parcel owned by the Hawaiian Electric Company (makai of the site). Also, the Navy lands from HECO's parcel to the shoreline (a narrow strip) will be landscaped. Preliminary approvals from the respective property owners have been obtained.

(6) A total of 1,337 parking stalls will be provided; 112 parking stalls will be provided for guests. There will be four (4) parking decks (see Figure 2) that will house most of the stalls. These parking decks will have four levels. Assigned residential parking will be provided. Each building will have one loading zone. The parking and loading spaces provided is in accordance with the Comprehensive Zoning Code.

(7) The availablity of potable water for the proposed project has been partially resolved. The developer plans to construct an irrigation system for the Ted Makalena Public Golf Course. The golf course is presently using potable water (approximately 223,000 gpd) for irrigation. The new source of irrigation water will be from a surface ditch (draining spring water and water applied to the watercress field into Pearl Harbor). This water, through slightly saline, will provide a consistent and necessary volume of water for the irrigation needs of the golf course. There are no downstream users of this water; therefore, no adverse impacts are foreseen in the use of this water. Additionally, the developer proposes to seal off the well on the Waterfront Manor site, thus, retaining another 700,000 gpd of water (well water) within the Pearl Harbor groundwater basin. The three (3) wells on the site are presently capped (temporary solution); sealing the wells would permanently retain the 700,000 gpd of well water in the Pearl Harbor groundwater basin. Subsequently, the developer will request from the Board of Water Supply, a sufficient amount of potable water for the proposed project (the demand is based on a rule of thumb figure of 300 gpd/unit for a total of 258,900 gpd). Given these figures, over 660,000 gpd of well and potable water will be added to the Pearl Harbor groundwater basin. The issue which needs to be resolved is whether the Board of Water Supply (BWS) will approve the 258,900 gpd of potable water for the project. Earlier project plans called for 520 units; at that unit count, the BWS approved the proposal (see Exhibit 1). With an increased unit count, new information must be given to the Board of Water Supply for their review and approval. The Department of Land and Natural Resources (DLNR) have indicated their approval of this water exchange concept (see Exhibit 2). The Department of Parks and Recreation (DPR) have also indicated their willingness to allow the developer to provide an irrigation system for the golf course (see Exhibit 3). Connection to existing water lines and new installation for water service will be implemented in accordance with the BWS requirements (see Exhibit 1).

(8) Drainage improvements, in form of drainage lines will be provided. Currently, there is one drain culvert on the Leeward College end of project site. Surface runoff from the Leeward Community College (LCC) drains into that culvert. No other drainage improvements are located on the site. The project plans call for a portion of surface runoff from the site to hook-up to this culvert; in addition, the runoff from the U.S. Navy Reservation will be collected via a lined drainage ditch and discharged through the culvert. Four (4) more drainage lines (discharging runoff along the shore of Middle Loch) will be installed. Surface runoff from the property (estimated at 70 cubic feet per second) and from the upper areas (Waipahu High School and Athletic Field) will be discharged through these drainage pipes. Drainage plans and improvements must be reviewed and approved by the Department of Public Works.

(9) Sewage effluent from the project will be treated at the Pearl City Sewage Treatment Plant where treatment capacity is reserved for the project because of the landowner's financial participation in the recent capacity expansion of the plant. The off-site sewerage system will consist of new 15- and 12-inch sewer mains connecting to an existing 18-inch main behind Leeward Community College. A letter from the Department of Public Works indicating the adequacy of the treatment plant is attached as Exhibit 4.

Easements for storm and sanitary sewers outside the public right-of-way will be dedicated to the City and County.

(10) Other utilities such as electricity, telephone, and gas will be available to the project site. Connections to the existing lines will be designed and installed in accordance with the regulations and conditions of the regulating agency or company.

2.3 Statement of Objectives. The developer feels that the property can be effectively utilized for a higher and better use. The General Plan designates the property for Medium Density Apartments, the rezoning has been approved, from AG-1 and R-6 to A-2, and the site is surrounded by various urban uses. Utilities, shopping areas, governmental services, and the highway system are available to the site. The proposed structures can utilize the slope and views of Middle Loch to create scenic vistas for future residents.

2.3.1 Given these factors, along with the critical need for housing in the Pearl City-Ewa area, the developer finds that the units that will be built contribute towards satisfying the need for housing. The units will be sold in fee at prevailing market prices comparable to similar developments in the area. The developer will provide moderate-income housing, the details of which shall be worked out with the Department of Housing & Community Development and the necessary agreements signed prior to issuance of the building permit.

2.4 Funding and Phasing. The estimated cost of the proposed development, excluding land costs, is estimated to be $94 million (1980 dollars). The developer will seek conventional financing from banks or other lending institutions. The cost of the project will be amortized with private monies only, no governmental funds will be used.

The developer anticipates that work on the project will tentatively begin in the summer of 1981 and will take approximately five (5) years to construct. The project will be built and sold in four (4) phases.

2.5 Historic Perspective. The subject property was purchased by the landowner/developer, in 1966. Prior to his purchase of the land, the land was used for pig-farming, watercress and ung-choi cultivation and had related single-family dwellings on the site. Historically, the area was used for cattle grazing.

2.5.1 Because of the pending development of the site, the agricultural uses were discontinued by mid-1979. In December, 1979, the developer filed an application for rezoning AG-1 and R-6 to A-2 with the City. In October, 1980, the rezoning request was approved by the City Council.

2.5.2 Presently, the site is vacant and in open space.

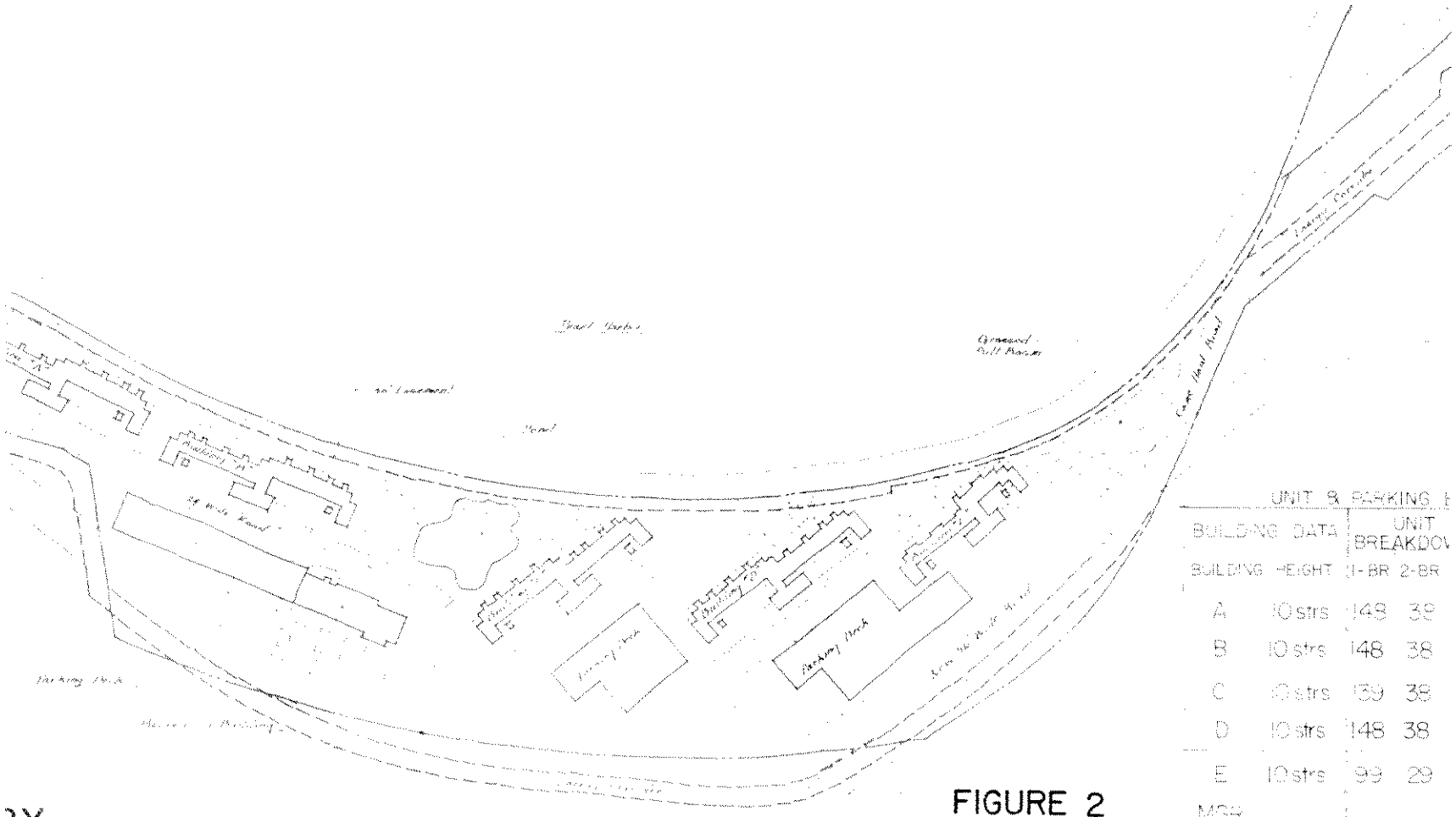


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FIGURE 2
SITE PLAN

UNIT & PARKING I

BUILDING DATA		UNIT BREAKDOV	
BUILDING	HEIGHT	1-BR	2-BR
A	10 strs	148	39
B	10 strs	148	38
C	10 strs	139	38
D	10 strs	148	38
E	10 strs	99	29
MSR			
TOTAL		682	181

3. DESCRIPTION OF THE EXISTING CONDITIONS

3.1 General. The project site is essentially a crescent-shaped parcel measuring approximately 2,000 feet long and 400 feet at its widest point. The site is presently vacant; much of the site is overgrown in weed-type vegetation. Topographically, the property varies considerably. The highest point is approximately 58 feet above sea level and the lowest about 3 feet above sea level. (See Exhibit 9, Generalized Topographic Map.)

3.2 Physical Geography.

3.2.1 Geology. Like the rest of Oahu and the State, the area is of volcanic origin. Oahu was formed by the Waianae and Koolau volcanoes. Waianae, the older volcano, was a separate island until lava flows from the Koolau created a plain area between the two volcanoes (during the late Tertiary Period). The Waterfront Manor site is located on the southern end of that plain. The dissection of the plain via erosional forces (e.g. water, and ocean) created sediments which formed a great portion of the site. Man's own use for farming and residential purposes also altered the site. Historically, the site was used for sugarcane cultivation and cattle grazing; more recently the site was used for small, family-oriented agriculture/residential activities.

3.2.2 Soils. As identified by the Soil Survey of (the) Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii,[1] the site's soil (approximately 90 percent of the site, makai end) consists of Pearl Harbor clay (Ph). The soil is described in the publication as follows:[2]

The soil is on low coastal plains adjacent to the ocean. It is level or nearly level...

In a representative profile the surface layer is very dark gray, mottled clay about 12 inches thick. The subsoil, about 19 inches thick, is very dark gray and very dark grayish-brown, mottled clay that has angular and subangular blocky structure. The substratum is muck or peat. The soil is neutral in the surface layer and mildly to moderately alkaline in the subsoil.

Permeability is very slow. Runoff is very slow to ponded, and the erosion hazard is no more than slight. The available water capacity is about 1.4 inches per square foot in the surface layer and subsoil. In places roots penetrate to a depth of 2 to 4 feet. Workability is very difficult...

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1 Prepared by the United States Department of Agriculture, Soil Conservation Service in cooperation with the University of Hawaii Agriculture Experiment Station, issued August, 1972.

2 It should be noted that the soil description provided is a general reconnaissance description of the soil type and not a site specific analysis.

This soil is used for sugarcane, taro, bananas, and pasture.

3.2.2. (a) The remainder of the site is identified as having WzC soil (Waipahu silty clay, 6 to 12 percent slopes). The same Soil Conservation Service document describes this soil as follows:

This series consists of well-drained soils on marine terraces on the island of Oahu. These soils developed in old alluvium derived from basic igneous rock. They are nearly sea level to 125 feet. Rainfall amounts to 25 to 35 inches annually; most of it occurs between November and April. The mean annual soil temperature is 75°F. Waipahu soils are geographically associated with Hanalei, Honouliuli, and Waialua soils...

On this soil, runoff is medium and erosion hazard is moderate...

This soil is used for sugarcane and homesites...

3.2.2. (b) The soil descriptions provided above are based on generalized surveys, not a site specific analysis. The soil engineering consultant firm, Geolabs, Hawaii, has prepared a more specific discussion on the site's soils based on field inspection and a previous soil boring study (1971). Geolabs description of the "wetland" soil is provided in Appendix V. It should be noted that the "wetland" type soil is located in a small portion of the site. This Pearl Harbor soil series have characteristics which include high shrink swell potential, low bearing capacity and high water table. Possible remedial measures to stabilize this soil for structures include the use of crushed rock for filling this area and the use of piles to form a solid foundation for the proposed buildings. More specific measures will be included after a detailed soil study (with soil borings) is completed and recommendations from the soil engineering consultant are provided.

3.2.3 Seismicity. Based on the standard zoning of seismic risk, the entire State falls within Zone 1, which is a zone described as: "Minor damage - corresponding to an intensity on the Modified Mercalli (MM) scale of less than 6." This standard is based on past earthquakes.

3.2.4 Microclimate. The annual average precipitation at the project site is approximately 25 inches. The temperatures on Oahu are representative of a semi-tropical climate; there are no extreme seasonal variations. The diurnal (daily) temperature range exceeds the seasonal range. Readings from the Honolulu International Airport indicate the temperature range has a monthly low of 58.1°F. and a monthly high of 80.4°F. during the winter months, to a similar range of 65.0°F. to 84.1°F. during the summer months. Based on wind data from Barbers Point Naval Air Station, the mean long-term wind speed can be estimated at approximately 8.9 knots, with the most typical wind direction from the northeast for 22 percent of the time. The predominant winds (80± percent) come from the north northeast and east-northeast, and are traditionally known as the tradewinds.

3.2.5 Flora. A botantical survey of the project site was undertaken in September, 1980. The entire report is included in this EIS as

Appendix III; therefore, no attempt is made to provide a detailed discussion on flora in this section. However, a summary discussion of the survey's findings is provided below.

3.2.5. (a) The vegetation within the project site can be classified into three major types which are easily distinguished in the field. In the low-lying areas fresh water springs provide water for the formation of a wetland. Wetlands have been defined as lands where the water table is at, near or above the land surface long enough each year to promote the formation of hydric soils and to support the growth of hydrophytes (water loving plants) as long as other environmental factors are favorable (Reference: Cowardin et al 1976, Cowardin 1977, see Appendis III). Three types of wetland vegetation were distinguished within the project site. These included the Brachiaria marsh in which Brachiaria mutica (Californiagrass) forms a monodominant cover, other plant species found in this area included Typha latifolia (cattail), and Jacquemontia sandwicensis (Pa'u-o-hi'i-'aka). The second wetland vegetation type was designated Cyperus marsh in which Cyperus alternifolius (umbrella plant) covers a rather large area; other species found in the Cyperus marsh included Typha (cattail) and Brachiaria (Californiagrass). The third vegetation type was identified as Cultivated; this was because this area was cultivated for a long time and was abandoned only in the past year or two. Abandoned ung-choi plants are still plentiful in this area. Most of the paddies have begun to dry out since the wells have been capped and Cynodon dactylon (Bermuda grass) now grows over much of the area. The paddies closest to the ocean and along the irrigation ditches are still wet and support a number of hydrophytes. The second major vegetation type found on the site was designated Leucaena Vegetation types. Leucaena leucocephala (koa-haole) covers extensive areas within the project site. There were three variants of this vegetation type which were distinguished by stature and composition. The third major vegetation type consisted of open, weedy vegetation with scattered, low-stature (1 to 1.5 meter tall) Leucaena (koa-haole) and a number of cultivated plant species, such as coconut, papaya, Heliconia and a large specimen of Chinese banyan near the ruins of the pig pens. This vegetation type was found near and around the abandoned farm and house sites.

3.2.5 (b) The location of the vegetation types and variants are shown on the Vegetation Map in Appendix III. The plant species list is also provided in Apendix III.

3.2.5 (c) The plant species found within the project site consist mostly of introduced, weedy species. Plant species listed in the Federal Register of proposed endangered and threatened species (1976) were not found.

3.2.6 Fauna. A Fauna Report for the proposed site was prepared by Dr. Andrew J. Berger; this Report is provided in Appendix IV of this EIS. The report provides the following information on the birds within the project site.

3.2.6 (a) The sea level location and the presence of only introduced or exotic vegetation in the subject site makes it totally unsuitable for

any endemic Hawaiian forest bird. All of the land bird species that were observed at the site as well as the surrounding area, have been those that have been introduced to the Hawaiian islands; for example, Lace-necked Dove, Barred Dove, Red-vented Bulbul, Japanese White-eye, Common Indian Mynah, House Sparrow, Red-crested Cardinal, and House Finch. Other species of introduced birds are found outside of the small project area. None of these species is protected by the Rare and Endangered Species Act of 1973, and a number of them are pest species in Hawaii.

3.2.6 (b) The only concern for birds in the Pearl Harbor area deals with the endangered waterbirds: Hawaiian Gallinule (Gallinula chloropus sandivicensis), Hawaiian Coot (Fulica americana alai), Hawaiian Stilt (Himantopus mexicanus Knudseni), and the Koloa or Hawaiian Duck (Anas wyvilliana). There appears to be no historical data that suggest that any of the endangered Hawaiian waterbirds have ever used this small "wetland" area, nor is this site close enough to existing Wildlife Refuges to make it likely that birds would occupy it even if optimal conditions could be provided.

3.2.6 (c) The Hawaiian Islands have only one endemic land mammal, the Hoary bat (Lasiurus cinereus), and this bat is rarely reported on Oahu. All other mammals found in the area are introduced species and all are serious pests (house mice, rats, mongoose, stray cats) causing damage to man's products and to wildlife.

3.2.6 (d) In 1977, a report, prepared for the U.S. Army Corps of Engineers for their wetlands' study, was released. The report, prepared by R. J. Shallenberger, entitled, An Ornithological Survey of Hawaiian Wetlands, identified the birdlife in the Waipio Peninsula area. These birds, in addition to those listed above, included: Spotted Munia, House Finch, Red-Vented Bulbuls, Shama, Red Munia, Black-headed Munia, escaped cage birds (Red Bishop and Golden Bishop weavers, Ring-necked Pheasant, Skylark, Barn Owl, Hawaiian Owl (Pueo), Hawaiian Gallinule, Black-crowned Night Herons, and migratory ducks. The Pueo is included on the State's endangered species list for Oahu.

3.2.6 (e) Aquatic fauna which inhabit a small pond area on the project site includes mosquito fish, bullfrogs and toads, tilapia and crayfish.

3.2.6 (f) Other mammals commonly found on the site include cats, dogs, Indian mongoose, house mice, Polynesian rats and roof rats. These pests are attracted to the area becasue of the dense shrub and discarded solid waste material on portions of the project site.

3.2.6 (g) Although there is no and suitable habitat available for the Hawaiian Stilt, Hawaiian Coot, and Hawaiian Gallinule (the three bird species which are endemic and are on the existing Federal and State rare and endangered species list), it is noted that the birds are found in the Pearl Harbor area. No other mammals known to live in the project site or surrounding area are on the Federal and State list of rare and endangered species.

3.3 Environmental Considerations.

3.3.1 Air Quality. The nearest State Department of Health Air Quality Monitoring Station is located at the sewage treatment plant in Pearl City, about one mile east of the project site. Table 1 shows the values of particulate matter, including sulfur dioxide and nitrogen dioxide monitored at the Pearl City Station. The recorded maximum values of the three pollutants monitored were substantially less than allowable State and Federal limits. It is reasonable to assume that the ambient air pollutant levels are approximately the same at the project site.

3.3.2 Noise Considerations. No noise measurements were taken for the purposes of this EIS. Based on observation, it was determined that the surrounding land uses do not generate a significant amount of noise pollution (generally defined as unwanted sounds). The only sources of noticeable noise was the noise from the cane haul trucks from the cane haul road at the mauka, Ewa end of the property, and the noise generated by events held at Waipahu High School's athletic field. These noise sources do not appear to create a significant or adverse impact at the project site and it was concluded that the existing noise level is within an acceptable range (does not exceed 45 dBA more than 30 minutes per 24 hours).[1]

3.3.3 Storm Drainage/Flooding. The project site slopes toward Middle Loch. The present drainage from the U.S. Navy Reservation, Waipahu High School and its athletic field drains onto the project site and eventually into Middle Loch. Drainage from Leeward Community College is also discharged via a box culvert located on the project site. Additionally, spring water from ponds on the site drain (surface and subterranean) into Middle Loch. Localized ponding occurs at the lower end of the project site.

3.3.4 View Planes and Aesthetics. The present view makai of the project site consists of the floating dry docks (a fleet of World War II vintage ships resting off Middle Loch). Although the floating dry docks represents the dominant makai view, there is also a view of Pearl Harbor (East Loch) and the Honolulu area on the Leeward Community College end of the site. The mauka view from the project site is obscured because of the site's topography (situated below the elevated mauka areas) and the dense vegetation. On the other hand, the appearance of the project site from the waters and across Middle Loch and from the mauka areas consists of a green open space area with the tall vegetation and telephone poles (at the shoreline) being the most visible.

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[1] Residential Noise Level Guidelines. U.S. Department of Housing and Urban Development, Policy Circular 1392.2. July 16. 1971.

TABLE 1

SUMMARY OF AIR QUALITY MEASUREMENTS
AT PEARL CITY MONITORING SITE

POLLUTANT	YEAR 1976	1977	1978	1979
Particulate Matter				
No. of Samples	71	54	60	58
Range of Values	16-83	22-111	20-81	20-48
Average Value	41	40	37	34
No. of times AQS exceeded	0	1	0	0
Sulfur Oxides				
No. of Samples	72	52	58	56
Range of Values	5-50	5-38	5-74	5-63
Average Value	5	5	15	9
No. of times AQS exceeded	0	0	0	0
Nitrogen Dioxide				
No. of Samples	22			
Range of Values	11-44			
Average Value	27			
No. of times AQS exceeded	0			

NOTES: Monitoring site located at Pearl City Sewage Treatment Plant about one mile east of proposed project site. All values in micrograms per cubic meter. Nitrogen dioxide sampling discontinued in April, 1976. All values are for 24-hour periods.

SOURCE: State of Hawaii Department of Health Records.

3.4 Land Use Considerations.

3.4.1 Existing Land Use. Vacant.

3.4.2 Land Use Designations:

State Land Use District: URBAN

General Plan Designation, Detailed Land Use Map (DLUM): MEDIUM DENSITY APARTMENT: AMENDMENT ADOPTED BY ORDINANCE NO. 3842 DATED 11/30/71.

Zoning: A-2, REZONED TO A-2, October, 1980. Prior to rezoning, a small portion (1 acre) of the property lying between the Waipio Point Access Road and the Cane Haul Road was zoned R-6, Residential District. The remaining acreage was zoned AG-1, Agricultural District.

3.4.3 A-2 Zoning Restrictions. Under A-2 zoning, the buildings can be 40 feet above the highest point on the property. The buildable area allowed in accordance with the Comprehensive Zoning Code, is 1.5 million square feet. The proposed 863 units represents 760,874 s.f. of developed floor space area, or 51 percent of maximum allowable density.

3.4.4 Coastal Zone. The project site lies entirely within the Shoreline Management Area (SMA) as identified by the City in Ordinance No. 4529, relating to the coastal zone. This means that nay development within the site will be subject to review and approval of the City Council.

It must be determined if the proposed development will be consistent with the policies of the Shoreline Management Area, since SMA designated areas are felt to be sensitive and may significantly affect our coastal resources.

3.4.5 Flood/Tsunami Zone. The site is not subject to tsunamis or severe flooding. Reference: Flood Insurance Rate Map (Final) Island of Oahu, City and County of Honolulu.

3.5 Utilities.

3.5.1 Potable Water. Potable water is available from an existing 12-inch main on Waipio Point Access Road. Based on a 300 gpd/unit demand (which is on the high side) the project will require (when completed and occupied) 258,900 gallons of potable water per day. As indicated, the developer proposes to install pumps and dedicate to the City and County an irrigation system that uses surface water from the ditch near Waipahu Park for the Ted Makalena Public Golf Course. Domestic, potable quality water presently being used to irrigate the golf course will be used for the Waterfront Manor project. With this trade-off, potable water will be available for the proposed project. See Exhibits 1 (letter from Board of Water Supply) and 3 (letter from the Department of Parks and Recreation).

3.5.2 Sewage Collection, Treatment, and Disposal. It is proposed that new 15- and 12-inch sewage mains be connected to an existing 18-inch main behind Leeward Community College. The Pearl City Sewage Treatment Plant will handle the project's sewage. See Exhibit 2 (letter from the Department of Public Works).

3.5.3 Electricity. Electrical lines from Waipio Point Access Road will be available. An underground system from the source to the project development will be installed.

3.5.4 Telephone. The connection is again along the Waipio Access Road. The telephone system will also be installed underground.

3.5.5 Energy Corridor. The State's Energy Corridor is located at the eastern end of the project site (see Figure 2 for its location).

3.6 Social Services and Community Facilities.

3.6.1 Recreational Use of the Site and Proposed Facilities. The shoreline area adjacent to the site is used for a variety of informal recreational activities including jogging, walking, fishing, and small gatherings. These activities take place outside the site, on HECO's 40-foot property. Based on periodic site visits, anywhere from two to seven individuals using the site for recreational purposes where seen on each visit (about ten site visits total). Individuals using the shoreline area for recreation have access to the property via the HECO 40-foot property.

Park dedication requires 110 square feet of park space per unit (110 sq. ft. x 863 units = 94,930 square feet). The recreational/health facility, pedestrian path, and open space totals over 6.0± acres. On-site amenities such as tennis courts, swimming pools, and areas for passive activities, will be provided to residents and their guests. The recreational area will be owned and operated by the project's condominium association.

3.6.2 Schools. There are several public schools (elementary, intermediate and high schools, and a community college) within 15 miles of the project. Because the condominium unit sizes and target market is directed toward young couples and single individuals, the number of children attending schools is expected to be less than other types of residential developments at various levels. The Waipahu Library is located within .3 mile of the project site.

3.6.3 Health Facilities. There are two medical clinics (Waipahu and Punawai Clinics) available in the Waipahu area. Additionally, various private medical and dental offices are found within a five mile radius of the site. With the rapid development of the Pearl City-Ewa area, more medical facilities (including a hospital) are anticipated. Ambulances answering emergency calls will respond to a call from the site in less than five minutes.

3.6.4 Police Protection. The City and County Police Department serves the project area. Policemen stationed at the Pearl City Station will

respond to emergency calls; normal patroling of the area will be part of a regular police "beat."

3.6.5 Fire Protection. Fire protection will be provided by the City Waipahu Fire Substation. Responses to a fire on the project site will be approximately 7 minutes. Fire hydrants and fire protection devices in the buildings will conform with the County's Building and Fire Codes. Inspection of fire safety devices/facilities are routinely performed by Fire Department inspectors.

3.6.6 Solid Waste Collection and Disposal. Solid waste will be collected and disposed of by a commercial refuse company as is the case for most condominium developments. To minimize the frequency of collection, a trash compactor will be incorporated into the building's solid waste disposal system.

3.6.7 Shopping Facilities. Commercial stores, markets, shopping centers and specialized shops are found within several minutes (driving time) of the project site.

3.6.8 Cultural Facilities. Movie theatres, plays (Leeward Community College), periodic flower/orchid shows, sports, and stadium activities are found within a 15-minute driving time from the project site.

3.7 Transportation.

3.7.1 Roadways. Presently, the project is served by a dirt road. A paved access road to the site from Waipio Point Access Road is proposed. This proposed road (56-foot ROW) will be built to County standards and will be dedicated to the County. Internal roadways adjoining the parking area and buildings will be privately owned and maintained by the development's condominium association. Henry T. Au, traffic consultant has prepared a study (see Appendix II) relating to traffic impact. In summary, the report provides the following information on the existing highway system and traffic.

(a) The major highway system serving the project consists of Farrington Highway, Interstate Route H-1 and Interstate Route H-2 (see Figure 3). Waipio Point Access Road serves as the primary access to the development. Within the development, a 56-foot access road will be constructed to connect with the existing Waipio Point Access Road.

(b) In 1965, the traffic volume on Farrington Highway at the Oahu Sugar Co. Road Overcrossing (Station C-8-G) in the vicinity of Waipio Point Access Road was only 25,224 cars. The highest traffic volume occurred in 1971, with a volume of 37,764 cars. Beginning in 1972 and even until the latest traffic count taken in 1977, traffic volumes consistently showed a decrease from its high volume of 37,764 in 1971, stabilizing at approximately 35,011 cars.

(c) Interstate Highway Route H-1 has diverted a significant volume of through traffic not only from the local streets,

but also from such major highways as Farrington Highway through the Waipahu District and from Kamehameha Highway through Pearl City, Waiau, Waimalu and beyond. With this diversion of through traffic, there will be excess capacity on both Farrington Highway and Kamehameha Highway.

3.7.2 Mass Transit. Mass transit (TheBus) is presently available along the Farrington Highway (with an average headway of 20 minutes). This would place the nearest bus stops over 700 feet from the project site.

3.8 Historical and/or Archaeological Sites. There are no known sites of historical or archaeological value on or adjacent to the project site. The modification of the land for agricultural uses significantly lessens the probability of archaeological sites or artifacts.

The Department of Land and Natural Resources (DLNR) provided comments on this subject during the Draft EIS review. The DLNR stated (letter, December 15, 1980): "Because the project site has been used for sugar cane cultivation, cattle grazing, pig farming, and watercress cultivation, and it is known that several old single family residences existed in the area, it is highly probale that important historic archaeological sites exist in the area, especially trash dumps from the Territorial Period."

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

4.1 DLUM and Zoning. The Detailed Land Use Map (DLUM) policies designate the subject property for Medium Density Apartment use. The project site was rezoned in October, 1980, to A-2. The proposed action would implement the A-2 zoning. Also shown on the DLUM is a roadway alignment for a proposed road along the mauka boundary of the subject property connecting Waipio Access Road with Lehua Avenue in Pearl City. The proposed roadway easement was included as part of the DLUM amendment which designated the subject property for Medium Density Apartment (Ordinance No. 3842 dated November 30, 1971) primarily for the purpose of providing a second access plan provides adequate reserve land along the mauka boundary of the site to permit the completion of the required road between Waipio Point Access Road and Lehua Avenue when such a road is constructed.

The A-2 zoning allows medium density apartments with a maximum height of 40 feet from the highest elevation of the project site. The highest elevation in the Waterfront Manor project site is 58 feet above mean sea level. Subsequently, a proposed building can be built at zero elevation on the project site and can achieve a total height of 98 feet.

4.1.1 County General Plan and the Proposed Development Plan. Both the General Plan and the proposed Ewa Development Plan were reviewed. There is no specific mention of this project site in either documents. However, both documents indicate that Ewa is designated as the secondary urban center for Oahu.

4.1.2 Use Restrictions Imposed by the Federal Government. During the Draft EIS review process the State Department of Accounting and General Services indicated that, "there are use restrictions imposed by the federal government on Waipahu High School athletic field for the future access road to Leeward Community College." These restrictions were not identified. However, it should be noted that there are no restrictions imposed by the federal government on the project site.

4.2 Special Management Area (SMA) and Coastal Zone Management (CZM). The project site is entirely within the SMA, as designated by Ordinance No. 4529. This also means that the property is within the Coastal Zone Management (Federal equivalent of SMA). A review for proposed actions within the CZM is required only if Federal land or permit action is involved. The SMA permit will be filed by agents of the developer pending the disposition of the Revised EIS and its' acceptability. The City Council must determine if the proposed action is consistent with the policies established by Ordinance No. 4529 and Chapter 205-A for the protection of the shoreline. These policies include the protection of endangered wildlife and plant species inhabiting the coastal zone, no substantial adverse impact to the area's air quality, water quality, view planes and preservation of recreational lands. The proposed land use will affect the area's air quality, traffic, view planes, and aesthetics of the project site. It is not anticipated that the project will adversely or significantly affect the adjacent water quality, recreational

or potential recreational uses of the site, birds on the proposed list of rare or endangered species, and the aquatic life within the shoreline waters. The impacts that will occur on air quality, traffic, view planes and aesthetics are unavoidable. These are impacts which normally occur because of urbanization. Discussion elaborating on these environmental impacts are provided in Sections 5 and 6. Mitigation measures are discussed in Section 9.

4.2.1 The CZM review process is required because a Department of the Army Permit (DOA Permit) is needed. A DOA Permit will be required because wetlands exist within the project site.

4.3 Wetland Designation. The project site is within a region which is defined as wetland. The Pearl Harbor area has several ponds and wetlands suitable for waterbirds which are on the proposed list of rare or endangered species. The site itself does not have extensive or suitable ponds for waterbirds. Most of the site (about 18.5 acres) is dry (the wells were temporarily capped after the watercress and ung-choi farming was discontinued). A small portion of the site (0.5 acre) has flowing and standing spring water which drains into Middle Loch. This "wet area" has abandoned ung-choi plants, cattails, other vegetation covering its surface. The open, shallow-water environment necessary for the proposed rare or endangered waterbirds is not found on the project site. Additionally, it is noted that the source of water in this area is a man-made well, and not a natural spring. The developer must obtain a DOA Permit and, subsequently, a CZM review is required.

4.4 Agricultural Productivity. The selected crop productivity ratings for the project site as provided in the Land Study Bureau's Detailed Land Classification - Island of Oahu, L.S.B. Bulletin No.11, 1972, are D99, E104, and C93i. Generally, these ratings indicate that the soil is unsuitable for most agricultural crops. The highest of the three ratings, C93i, at best could be utilized for grazing, class B, which represents a potential of 2.5 to 5 acres per animal unit year or an estimated live beef gains 11-55 pounds per year.

4.4.1 A check with the State's "Agricultural Lands of Importance to the State of Hawaii," (maps prepared by the State Department of Agriculture, identify the site as "Unique Agricultural Land". This classification means that the land has the special combination of soil quality, location, growing season, moisture supply, and is used to produce sustained high quality and or high yields of a specific crop when treated and managed according to modern farming method. However, according to the available information in the past few decades only four (4) acres of the site were actively used for agricultural purposes.

4.4.2 The project site cannot be feasibly used for agriculture. Economically, the land value is too high to support farming as a permanent use. Additionally, the size of the area and its soil productivity is insufficient for an intensive farming use. Environmentally, pig farming, a former agricultural activity, is not a permitted use in an AG-1 zone.

4.4.3 Adjacent Agricultural Activities. Adjacent agricultural activities are located several hundred feet east of the project site. Based on site observation, watercress appears to be the dominant crop in this area. It is not anticipated that this proposed development will effect these agricultural activities because the land is zoned for agriculture.

4.5 Other Land Uses Considered. During the rezoning hearing, the use of the site for a general aviation airport was mentioned. This use is felt to be undesirable because of the following factors:

(a) the size is too small (19± acres);

(b) the location is next to a public high school and other institutional uses (LCC, Navy property);

(c) the availability of other, more suitable sites and locations for the General Aviation Airport.

5. THE PROBABLE IMPACT OF THE PROPOSED ACTION ON THE ENVIRONMENT

5.1 Impact on the Physical Geography. Generally, there will be minimal adverse impact on the site's physical geography. Ground clearing, filling in and excavation, and construction will alter the physical appearance of the site; this is unavoidable. However, the geology, soils, microclimate, and seismic risk factors will not be altered.

5.1.1 Impact on Geology. No change is expected in the geology of the site or area because: (1) there are no unique or unusual geological features within or in the vicinity of the project site; (2) significant amounts of excavation and fill are not required; (3) there are no geological hazards in the area.

5.1.2 Impact on Soils. The soil characteristics will not be modified as a result of the project. The engineering consultant indicates that no off-site soil fill is expected. However, granular material (e.g. crushed rock) will likely be used to stabilize the area where moisture laden soil is located. There will be some impact relating to soils during the construction phase, these include: (1) the soil will be exposed during grading, and will be subject to erosion via wind and water; (2) water erosion will likely result in sediment transport, these sediments will eventually be deposited in Middle Loch.

5.1.3 Impact on Seismic Risk. Construction and occupancy of the proposed Waterfront Manor will not alter the seismic characteristics of the site. The seismic risk zone is relatively minimal and design standards for this seismic risk zone are reflected in the Building Code of the City and County of Honolulu. The structural design of the buildings must meet Building Code requirements.

5.1.4 Impact on Microclimate. The development of the project will not result in a significant impact on the climatic conditions. The landscaping, grassing and watering of the flora upon completion will, in the long-term, decrease the ground temperatures of the project site. This change is expected to be beneficial to residents, creating a cooler environment. Wind flow on the project site is expected to be modified due to the structures. This impact is not expected to be significant, in that the ground wind conditions are normally affected by vegetation and structures.

5.1.5 Impact on Flora. The original vegetation on the site has long been removed and replaced by rapidly growing exotic (introduced) plants. The removal of these plants is not adverse because of their common or noxious nature. The extensive landscaping of the project, as identified in Section 2, will enhance the property and will modify the area to create an aesthetically pleasing environment.

5.1.6 Impact on Fauna. The impact on fauna is not anticipated to be significant for the following reasons: (1) the fauna which nest or feed on the project site are exotic, common and/or considered pests; (2) the endemic avifauna (i.e. the Hawaiian stilt, Hawaiian coot, Hawaiian Gallinule) do not feed or nest on the site; nor is there a suitable habitat (because of its environment and size) for these endemic species

within the project site. Aquatic fauna (in the present remaining small wet area) will be eliminated. The aquatic fauna, as indicated earlier, is common; subsequently their elimination or displacement will not result in a significant impact on the human environment. Other land mammals on the site such as stray dogs and cats, rats, mongooses, and mice will be displaced by the proposed project. These animals are pests; their displacement or elimination are not considered to be significant.

5.2 Impact on Environmental Quality. The project will involve direct and indirect impact on environmental quality. The areas in which adverse impacts will occur, includes (1) degradation of ambient air quality; (2) increased noise; (3) obscured views.

5.2.1 Impact on Air Quality. An air quality impact analysis was prepared by Barry D. Root, Appendix I, for this project, the results of this analysis are as follows:

(a) With the possible exception of carbon monoxide, existing ambient air quality in the proposed project area is well within the allowable limits set as Federal and State of Hawaii Air Quality Standards.

(b) The only direct emission of air pollutants from the proposed project will be in the form of fugitive dust from construction operations. These emissions are likely to be both short-lived and easy to control.

(c) Indirectly, traffic from the project will increase emissions of carbon monoxide, hydrocarbons, nitrogen oxides, and airborne lead in the project area. Of these, carbon monoxide, will be the primary concern.

(d) Detailed microscale carbon monoxide modeling analysis for three selected critical receptor sites along Waipio Point Access Road indicates that in 1982 the increased morning rush hour traffic generated by Waterfront Manor could cause peak hour carbon monoxide concentration in excess of allowable State of Hawaii Standards at two of the three sites. By 1995, implementation of Federally-mandated vehicle emission controls should cause these predicted values to be reduced to levels within the allowable State Standards. All carbon monoxide concentrations computations assumed worst case traffic levels and meterological dispersion conditions.

(e) Emissions from vehicles traveling in the vicinity of the project can be reduced by decreasing individual vehicle emission rates, decreasing the total number of vehicles, or altering roadway configurations to speed vehicle flow. One possible mitigative measure regarding this project would be to provide a right turn lane for vehicles entering Waipio Point Access Road from the Waterfront Manor. This would allow morning rush hour traffic to move along expeditiously as possible and lower vehicular emission rates.

(f) Vehicular emission estimates did not consider the impact of future gasoline shortages. Reduced vehicle use and the introduction of less-polluting vehicles into the vehicle fleet could greatly mitigate the potential air pollution impact of the proposed project.

(g) The indirect impact of the project on electrical power generation and the burning of solid waste are discussed in detail in section 14, pages 14-41 and 14-42, as a response to the letter (dated December 8, 1980, on page 14-40) from the American Lung Association of Hawaii.

Because the air quality study is included as Appendix I, there was no attempt in this section to repeat the assumptions and calculations used by Root. These calculations and projected CO values are provided in Tables 4 and 5 of the study.

5.2.2 Impact on Ambient Noise. The impact of the project on noise levels can be considered in two ways: the short-term impact during the initial construction period, and the long-term impact or noise created by the proposed development's residents (primarily from vehicles).

5.2.2 (a) During construction there is likely to be impulse noise, defined as: "Noise of short duration (typically, less than one second) especially of high intensity, abrupt onset and rapid decay, and often changing spectral composition."[1]

Piles for the foundation of structures will probably be necessary. Noise from pile driving will create a nuisance to surrounding activities. It is likely that pile driving will be completed during the site preparation stage rather than phased. The contractor must meet the applicable noise regulations and it is likely that a noise permit for pile driving will be required from the State Department of Health.

5.2.2 (b) Although the noise created may be irritating to some people (as it relates to their individual hearing perception), it is felt that noise during construction will not produce complaints. Working hours would coincide with the working hours of most of the adjacent residents and construction will be located a reasonable distance away from Waipahu High School's classrooms.

5.2.2 (c) The long-term impact of the vehicular noise generated by the proposed project is expected to be noticeable. The internal roadways will have slow speed limits (15 mph) and the vehicles using the roadways (i.e. the 56-foot wide access road and the Waipio Point Access Road) nearest the buildings will be heard, similar to other condominium developments.

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1 Information on Levels of Environmental Noise Requisite to Project Public Health and Welfare with an Adequate Margin of Safety, U.S. Environmental Protection Agency, March, 1974.

5.2.2 (d) It is also noted that the project will not, on a the long-term basis, affect Waipahu High School. This is based on the distance of the project from the high school (150+ feet) and the average wind direction away from Waipahu High School.

5.2.2 (e) Noise from the school and athletic field may periodically be heard at the project site. This noise is likely to be associated with a sporting or school assembly event. This noise is unavoidable and the developer will advise potential buyers of the condominium units of this existing noise source.

5.2.2 (f) Noise from the cane haul trucks will be heard by about 25 percent of the proposed units. During harvesting, the cane haul trucks (which haul the sugarcane from fields in the Waipio Peninsula to the Waipahu Sugar Mill) will be utilizing the cane haul road which crosses the proposed 56-foot wide access road, on a 24-hour basis. To partially mitigate this noise, landscaping along the road will be provided and the trucks will be given the right-of-way so that the louder sounds from braking and accelerating will not occur. The developer will advise potential buyers of this existing noise problem.

5.2.2 (g) Farrington Highway is located several hundred feet from the project site. Because the proposed buildings will be slightly lower than the highway, vehicular noise from the highway is not expected to be significant or adverse.

5.2.3 Impact on Storm Drainage/Flooding. The "Preliminary Drainage Study," prepared by Park Engineering, Inc. in provided in Appendix VIII. This study provides detailed information on the drainage (existing and proposed alternatives); the interested reviewers should refer to Appendix VIII for further information on drainage. Surface water runoff from the site and Waipahu High School (and its athletic field) will be channeled into Middle Loch. This preliminary plan has been discussed with the Division of Engineering, City and County of Honolulu, Department of Public Works. Soil conditioners, fertilizers, herbicides and pesticides will be utilized to enhance the growth of ornamental plants. Use of these products will change the chemical constituents of the surface runoff, depending on the chemical, amount and frequency of use, solubility, amount of rainfall and frequency, and dilution. Because the collective drainage flowing into Middle Loch from the high school, college, residential areas, athletic field, and Navy property, has daily larger volume (250 cfs) and similar urban runoff, and because the total volume of runoff will decrease (due to the diversion of surface waters to Ted Makalena Public Golf Course and sealing off of wells at the Waterfront Manor site), the impact on water quality is expected to be minimal. Surface runoff from areas above the site is discharging through drainage facilities on the site. The drainage plans (see Appendix VIII) will accommodate the existing runoff and will not adversely effect the existing drainage facilities.

5.2.4 Impact on Middle Loch's Water Quality. A report entitled, "Environmental Aspects of Storm Water Runoff for the Proposed Waterfront Manor, Leeward Oahu, Hawaii," has been recently completed

(December 17, 1980) by Gordon L. Dugan, Ph.D. This report is provided in Addendix VII. Dugan concludes that the proposed project will have a slight impact on the water quality of Middle Loch.

5.2.5 Impact on Viewplanes and Aesthetics. The proposed project will have an impact on present visual landscape in the area. The project is surrounded by low-rise structures (structures no more than three stories high). This means that the proposed 10-story buildings will be visible from Farrington Highway and some Waipahu High School buildings. The present views from the immediately adjacent areas will be blocked or altered. The impact of the buildings' height was evaluated as follows:

(a) The present site was not felt to be aesthetically pleasing due to the discarded solid wastes on the site and the overgrowth of weeds.

(b) The lower makai portions of the site will be where the buildings will be sited; this portion lies approximately five to ten feet above sea level. Subsequently, the lower half of the buildings will not be visible from the surrounding lands.

(c) The makai view from the second story buildings of Waipahu High School and the overpass between the high school and the athletic field, and other high (25+ feet) areas above the project site will be obstructed by the upper floors of the five proposed 10-story buildings. The view blocked by the buildings will be the floating docks (on the Ewa side), and the Pearl City (Waiawa) Peninsula and the Honolulu area to Diamond Head (on the Leeward Community College side).

(d) Residential areas (Ewa of Waipio Access Road and within Waipahu), the Waipahu business area, and low-lying areas mauka of the project site will not notice the buildings because of the flat topography.

(e) A few buildings at Leeward Community College will have a view of the project site; the view will consist of the upper portion of Buildings A and B. Because this represents a very small corner of the total view, the visual impact of the buildings from LCC will be minimal.

(f) The view from Middle Loch and the shores of Waipio and Pearl City (Waiawa) Peninsulas of the project site and Waipahu High School will be obscured by the buildings. The view will be altered from a green open space use to an urban setting with buildings, open lawn areas, and landscaping.

(g) The view of the site will be enhanced by landscaping.

(h) A panoramic view of the harbor area will be afforded to occupants of this condominium development.

Figure 3 shows the viewplanes available from various locations mauka of the project site; it also shows which views will be blocked by the proposed buildings.

During the review o the Draft EIS a few comments requested visual aids. Any visual means of depicting a proposed project is subject to some bias or distortion. Although this is the case, the comments requested such material, and, subsequently, Exhibit 8 was provided to show the appearance of the project in comparison to the surrounding areas. These are photographs of a model for the Waterfront Manor project. As indicated in the above narrative, only the upper four or five floors of the buildings are visible from the higher areas adjacent to the project site.

5.3 Land Use Impacts. The property lies in an area where extensive urban development has occurred, (except for the HECO easement and the land owned by the Navy). These surrounding uses (e.g. Waipahu High School, Leeward Community College) are well established. It is not anticipated that the proposed project will act as a catalyst for growth in the area, nor is it likely to stimulate increased growth amongst the existing urban uses. It should also be noted that the project does conform with the new General Plan which directs growth of a second urban center to the Pearl City-Ewa area. In comparison with a total of 10,000+ residential units planned for over the next five years (including Gentry-Waipio, Village Park, Mililani), the proposed project will provide less than 8 percent of the project housing units to be built in this area (Pearl City-Ewa). Hence, the impacts of development, including the additional burden on public facilities and services (schools, fire and police protection, sewage treatment) will not result only from this project, but will represent a small percentage of the total development for this area. With the direction of growth towards the Leeward area, the governmental agencies have established CIP priorities within this region. This will, in part, alleviate the cumulative impacts of rapid urbanization in the Pearl City-Waipahu area.

5.3.1 The proposed project will be consistent with the zoning of the site. The buildings' height and parking will comply with CZC requirements.

5.4 Impact on the Coastal Zone Management Area. The impact on the coastal zone is expected to be minor. The CZM Consistency form was filed with the State Department of Planning and Economic Development recently (December 17, 1980). This information specifically addresses the project's impacts relating to the coastal zone policies and objectives. For further information, the reviewer should refer to Exhibit 7 (copy of the filed CZM Consistency form).

5.5 Impact on Utilities. As discussed in Sections 2 and 3, utilities (e.g. potable water, sewage, electricity and telephone) are available to the project site. Below, in table form, is information regarding the availability demand for, and preliminary approval for the utility.

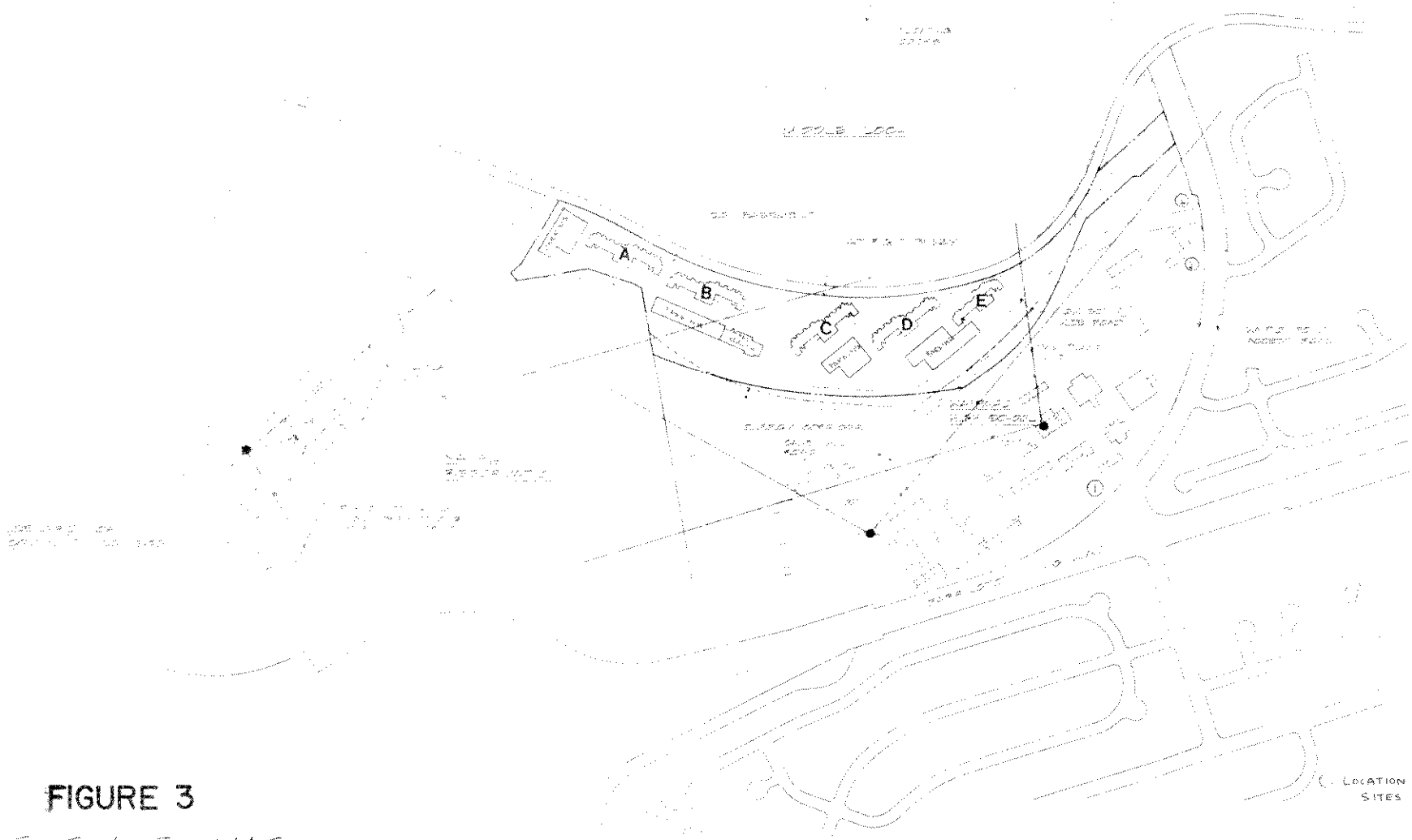

FIGURE 3

(LOCATION OF CARBON MONOXIDE R
SITES - SEE AIR QUALITY REPO

Utility	Connection Available	Estimated Demand	Preliminary Approval from Regulating Agency
Potable Water	Yes - with improvements and irrigation system for Ted Makalena Public Golf Course	258,900 gpd	Unresolved; approval was provided for 520 units (earlier plan) Need approval for an additional 343+ units
Sewage	Yes - developer contributed toward addition of Pearl City Sewage Treatment Plant Hook-up to LCC trunk line	181,650 gpd	Unresolved; earlier approval for 520 units okayed
Electricity	Yes - from electrical lines from Waipio Access Road	4.0 million kwh	To be accomplished during final drawings
Telephone	Yes - from lines along Waipio Access Road	Unknown	To be accomplished during final drawings

5.6 Impact on Easements and Utility Lines. It is anticipated that a few utility lines and pipelines will be affected by this project. These underground lines may require some reshifting and/or vertical dislocation in order to provide for the project's structures and infrastructures. The Energy Corridor, for example, is located under the proposed 56-foot wide access road; lines within the corridor may require some reshifting. This work will be coordinated with and subject to the appral of the Harbors Division, State Department of Transportation. Any dislocation or shifting of existing utilities and pipelines will require the consent of the agency owning the utility or pipeline. The cost of reshifting utilities and pipelines will be paid for by the developer. A U.S. Navy 8-inch aviation fuel main will be affected. The engineering consultant firm will work with the Navy to coordinate plans on the main. The actual work will be subject to the Navy's regulations and conditions.

5.7 Impact on Social Services and Community Facilities.

5.7.1 Impact on Recreational Facilities. Minimum impact on public recreational areas is anticipated. The informal activities taking place along the shoreline can continue. Some individuals now using the site because it is not crowded may decide that the project's proximity would take this aspect away. These individuals will likely seek out other areas that are undeveloped and/or isolated. On the other hand, future residents of the project are likely to find enjoyment in walking, jogging, fishing, and taking park in other recreational activities along the shore.

On-site recreational amenities (swimming pools, tennis courts, basketball court, volleyball court, passive recreational areas) will be provided. The project will exceed the required park space (recreational areas and open space).

5.6.2 Impact on Schools. Based on the proposed 863 units the Department of Education (DOE) provided the following information[1] on the approximate enrollment expected:

School	Grade	Projected Enrollment
Lehua Elementary or Pearl City Elementary	K-6	30-60
Waipahu Intermediate	7-8	20-30
Waipahu High	9-12	20-30

The DOE indicated that Waipahu Intermediate and Waipahu High Schools can accommodate the project enrollment of the proposed project. However, elementary schools in the Waipahu area are "operating at or above capacity." This will mean that the State will probably bus these students to Pearl City schools, either Lehua or Pearl City Elementary Schools rather than the closer August Ahrens Elementary School. The DOE commented: "Leeward District will determine the designated school on the basis of available classroom facilities."

5.7.2 (a) Given this information, the following impacts on public school facilities include:

(1) Additional educational costs incurred because of bussing elementary students from the proposed project to a school with available classroom facilities.

(2) Redistribution of students. It is likely that the people moving into this project will come from other parts of the island or State. This will mean that rather than a "new" student being generated by the project, a student now located at one public school will now be relocated at another school. Subsequently, the expense of public education remains basically the same.

5.7.2 (b) Except for the possible bussing of elementary school students, the other two schools, Waipahu Intermediate and Waipahu High are respectively located one mile and 500 feet from the project site.

5.7.2 (c) Leeward Community College is also close to the project site. Vehicular access to LCC would be through Farrington Highway; driving time to LCC would be about 5 minutes. It is anticipated that some residents of the proposed project will enroll in classes or utilize the facilities of LCC.

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[1] Letter dated November 17, 1980, from the State Department of Education to the Department of Land Utilization.

5.7.3 Impact on Health Facilities. There are various health facilities, including two medical clinics, doctors' offices in Waipahu and Pearl City, and Pearlridge Hospital in the Leeward area. The residents of the project, based on their discretion, will have these facilities available to them should they desire medical attention that is within a 10-minute drive from the site.

5.7.4 Impact on Police Services/Protection. During the EIS Consultation Period, the following comments were received from the Police Department (letter of March 27, 1980 to Environmental Communications, Inc.):

(1) 576 housing units may house as many as 1,700-1,800 new residents;

(2) the Police Department, by their letter of December 8, 1980, indicated that the workload increase due to this project will be equivalent to more than four (4) police employees.

Since the Police Department's comments, the project unit count has increased to 863. Using a 2.5 persons per unit estimate, the estimated population for the project site is 2,160. Therefore, a total of 5.4 police employees will be required. (It is noted that these employees are not only patrolmen, but includes clerical and administrative positions.) The Pearl City substation will provide the patrolmen necessary to respond to emergency calls. Normally, emergency and accident calls are responded to within 10 minutes.

5.7.5 Impact on Fire Protection Services. The Fire Department provided the following comments (dated March 24, 1980 to Environmental Communications, Inc.) on the proposed project:

(1) the project site is approximately three miles from the Waipahu Fire Station;

(2) the response time is approximately 7 minutes;

(3) supportive fire service will be provided by the Pearl City Fire Station;

(4) the Capital Improvement Program (CIP) for FY (fiscal year) 1980-8i calls for a new fire station in the Waipio-Crestview area, if this additional station becomes available this area will have more than adequate fire protection.

Based on this information, it is felt that the fire protection needs of the proposed project will be adequately accommodated by the existing and proposed fire stations.

Fire protection for the proposed project (fire hoses, fire hydrants) will be provided in accordance with applicable fire building codes, and the CZC.

5.7.6 Impact on Solid Waste Collection and Disposal. The proposed project will not utilize the public refuse collection system. Currently, 2.6 pounds of solid waste per capita per day is generated by residents living in high-rise apartments on Oahu. Using that figure (source:

Department of Public Works), the project, when fully occupied will generate about 2.8 tons of solid waste per day. A private commercial refuse company will be retained to collect and dispose of the solid waste. A trash compactor for the buildings will be installed to minimize the frequency of collection. As required by law, refuse must be disposed of at an approved landfill site.

5.7.7 Impact on Shopping and Cultural Facilities. In the past ten years there has been a significant growth in the Aiea to Waipahu area. This growth included the building of several shopping centers, industrial areas, fast food outlets, theatres, recreational (public and private) areas (parks, golf courses, amusement areas, bowling alleys, tennis courts), libraries the Aloha Stadium, Leeward Community College, et cetera. The area is targeted for increased population growth as a second urban center (after Honolulu) in the County's General Plan. Subsequently, shopping and cultural facilities are now available and will continue to be built to keep up with the population growth being experienced.

5.7.8 Economic Impact. The project will result in various economic impacts. Initially, during construction, labor and purchase of building materials occur. On a more permanent basis, the project will result in a few permanent jobs (e.g. management, maintenance) and significant increase in the property value and taxes.

5.8 Impact on Transportation. Henry T. Au, traffic consultant, provided the following summaration of his findings on impact (because the report is included in full as Appendix II, no attempt is made in this subsection to repeat the assumptions and elaborate on the analyses of the traffic report).

(1) The proposed dwelling units (863) will generate a 24-hour volume of 4,531 trips and a peak hour volume of 544 trips.

(2) Using a 73 percent/27 percent directional distribution of the 544 peak hour volume of the project, approximately 397 vehicles will be added to the peak hour volumes if the heavy direction is considerably less than the capacity of a local street. As a comparison, the capacity of a local street with a 44-foot right-of-way with no parking and at grade intersection is approximately 600 vehicles per hour in one direction and 900 for both directions of travel.

(3) The projected 1990 peak hour volume in the heavy direction on Farrington Highway, including the 397 vehicles from the Waterfront Manor project, will total 2,240 vehicles per hour, whereas the capacity of Farrington Highway is 2,550 vehicles per hour. The 1990 peak hour volume of 2,240 vehicles, therefore, is less than the capacity of Farrington Highway. With such excess capacity, Farrington Highway will be more than adequate to accommodate future traffic demands beyond 1990 and in all probability to the year 2000 but at Level of Service E, at a lane capacity of between 1,500 to 1,600 vehicles per hour.

(4) Public mass transportation service is available on Farrington Highway to serve the project. However, mass transportaton was considered only as possible mitigating factor which may mitigate in the future the adverse consequences of traffic and improve the traffic flow on the highway and street systems.

The traffic study concluded that: "Analyzing the various factors, it may be concluded that the proposed development will not add substantially to the traffic problems to create an adverse impact. The project will make possible the achievement of desirable social and economic improvements for the area."

During the Draft EIS review period, several reviewing agencies commented on the adequacy of Waipio Point Access Road. In response to these concerns, Henry T. Au, traffic consultant, provided the following information.

The highest volume of turning movements occur during the morning peak hours and is due primarily to school traffic whose directional flow is counter to the prevailing peak hour flow. Since the major employment centers are toward the Honolulu direction, the peak hour flow of 544 trips from Waterfront Manor will be predominantly towards the Honolulu direction with right turns from Waipio Point Access Road into Farrington Highway. The right turn movements (Movement 2) however, will not occur at the intersection but at a considerable distance from the intersection and will present less of a problem at the intersection. With these counterflows from the school traffic, there is no competition for space on the highway and therefore, less traffic congestion.

The critical capacity of the intersection is on Waipio Point Access Road (which is the extension of Kahualii Street) connecting with Waipio Point Access Road. At Level of Service C, the capacity is approximately 600 vehicles per hour in one direction and 900 vehicles per hour for both directions of travel. At Level of Service E, the capacity is approximately 900 vehicles per hour in one direction and 1,325 vehicles per hour for both directions. Thus, even at Level of Service C, there is considerable excess capacity at the intersection.

5.9 Impact on Historical and/or Archaeological Sites. The DLNR has indicated that there is a high possibility that "important historic archaelogical site exist in the area, especially trash dump from the Territorial Period." The DLNR has requested that their historic sites offic be notified when "ground disturbing activites are being conducted in the early stages of the project and to be allowed to make a field inspection of the project at the time." The developer will notify the historic sites office as requested.

6. ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

There are several adverse environmental effects which will probably occur: these are identified and discussed below.

(1) Alteration of the physical appearance of the project site. Short-term impacts: Sitework and construction will alter the open space appearance of the site; vegetation will be cleared and the soil exposed for a short period. Long-term impacts: the 10-story condominium buildings will be visible from higher elevations mauka of the site and from Middle Loch. The appearance of the project site will be that of a medium-density residential complex with various recreational amenities and landscaped open areas.

(2) Present wildlife on the project site will be destroyed or displaced. Although it is likely that the land and aquatic fauna (in the wetland area) will be destroyed or permanently displaced; the avifauna is likely to return after the project is completed. Birdlife on the project site, as identified in Section 3 consists of "urban" birds. That is, these birds adapt themselves to a residential or urban environment.

(3) Air quality will be adversely affected. For a short-term period, sitework and construction will create fugitive dust. Intermediate impact includes the indirect effect of vehicular emissions on the ambient air quality. Under the most adverse (e.g. peak hour, stable wind), the State's ambient air quality standard for carbon monoxide will be exceeded at two locations at the intersection of Waipio Access Road and Farrington Highway. Long-term impact will be mitigated via Federal emission control devices on new vehicles; by 1995, carbon monoxide levels, even under these adverse conditions, will be within the State's ambient air quality standard.

(4) Noise periodically from the cane haul trucks and Waipahu High School's athletic field will occur and may create a noise problem for future residents. Vehicular noise from vehicles along the adjacent roads (e.g. the proposed 56-foot wide access road and Waipio Point Access Road) will be increased due to the additional vehicles generated by the proposed project.

(5) The project site will commit the land to an urban use for a long-term period.

(6) Natural resources such as oil (to generate electricity), and potable water will be consumed. The electricity consumed per year by residents of the project will be equivalent to about 7,500 barrels of crude oil. Potable water consumption will be approximatey 94.5 million gallons per year.

(7) Public services in form of facilities (e.g. schools) and labor (e.g. police personnel, road maintenance) will be needed for

the proposed project. The total indirect use of public funds on a long-term basis was not estimated.

(8) On a long-term basis, additional traffic will be generated. There will be an increase in the peak hour congestion at the intersection of Waipio Access Road and Farrington Highway.

(9) The wetland on the project site will be altered and/or destroyed.

7. ALTERNATIVES TO THE PROPOSED ACTION

7.1 Alternative Uses. No alternative uses were considered by the developer. It was found that the site's present use or its use for agriculture is uneconomical. A lesser residential use or density will result in medium to high priced residential units; a use having a greater density will result in more significant adverse environmental impacts. Other uses of the site such as park and open space, will result in economic loss to the developer, and thus, these alternatives are highly unlikely to be implemented. Commercial or industrial uses would be inconsistent with the General Plan as well as have significant environmental (e.g. traffic, air pollutants) impacts.

7.2 Alternative Designs. Various site plans and designs were considered. The final design selected considered the following:

1. The view amenity from the condominium units.

2. The 10-story height limitation of the buildings considered the view from surrounding areas, with the height consistent with the A-2 zoning limits.

3. Avoidance of the afternoon sun from the condominium units.

7.3 Low-Rise Buildings. The construction of low-rise buildings using more land area was also considered. Low-rise buildings would not significantly affect the view plane from mauka properties, and lesser amount of units would be created, therefore, lessening impacts on traffic and air quality. However, the infrastructure and offsite improvement costs will still remain about the same. Subsequently the cost per unit may not be affordable to the middle income market. Based on these concerns, the developer selected the proposed project concept.

7.4 No Action. A no-action alternative is available. If no action is now taken, the monies expended for the land and preliminary planning will be lost. Eventually, other urban uses of the site must be considered since the site represents a sizeable area in an urbanized neighborhood such as this.

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

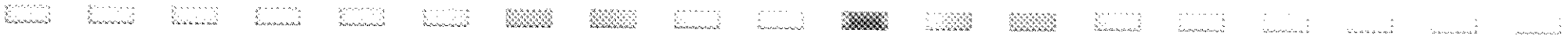
Both the short-term and long-term benefits derived from this proposed residential condominium project are anticipated to be the same. Economically, the property will increase in value, adding to the County's real property tax revenue. Construction jobs, although short-term, will be created. Purchases of building materials, landscape material, and other products will also provide income to businesses supplying these materials. Long-term jobs will include a resident manager position and probably several maintenance positions.

In addition to these economic benefits, the project will provide housing and property investments to individuals who purchase the units. From an individual standpoint, these units represent accumulated equity.

Aesthetically, the appearance of the project site will be permanently altered from its present open space to a medium-rise condominium complex. Although the four buildings will visually dominate the site, other components such as landscaping, open space and recreational amenities will form part of the site's use.

Finally, the proposed action will foreclose the long-term options of the land for other uses. It is rare to downgrade the use of a property once the infrastructures are built. The investment in these improvements will result in increases property value; therefore, withdrawing the land from an urban use has limited economic appeal. Subsequently, the land is committed to this or a higher land use.

Landscaping will enhance the project site. Landscaping will provide a visual enhancement, improve the appearance of the nearby shoreline, and provide shading and suitable trees for the "urban" birdlife.



9. MITIGATIVE MEASURES

Mitigative measures will be taken for the probable short-term and long-term adverse impacts. Generally, mitigative measures are established through various regulations, standards, and codes that the developer's contractor must comply with. This would apply primarily to the short-term period during the sitework and construction. Other mitigative measures, including landscaping, are incorporated into the design or site plan for the proposed project. Identified below are the probable adverse impacts and the mitigative measure available and/or proposed.

(1) Erosion and Water Quality: The following mitigative measures will be incorportated into the construction phase:

(a) the amount of land exposed, at any one time, during the construction period will be limited in conformance with the Grading Ordinance;

(b) dust control measures (watering down of the exposed ground) and grassing will be provided;

(c) where the soil is loose and wherever the contractor finds needed, the ground surfaces will be compacted with a smooth roller;

(d) a specific soil investigation report (borings from the project site) will be prepared so that a qualified soils engineer can identify any problem areas relating to soil stability; this information will be given to the contractor so that he may properly mitigate unstable conditions;

(e) useable soil will be stockpiled for landscaping;

(f) a temporary settling basin and/or drainage ditch will be constructed during construction to accommodate the surface runoff from the project site and the upper, mauka, areas;

(g) for mitigating long-term impact on water quality, the site plan calls for off-site and on-site drainage improvements;

(h) the sealing of the wells on the Waterfront Manor site will result less spring water entering Middle Loch, it is estimated that approximately 700,000 gpd of spring water from the well enters Middle Loch;

(i) temporary grassing (during and immediately after site work) of disturbed areas will control erosion/siltation into Pearl Harbor.

The adverse impacts on water quality which cannot be avoided are the increase in hard surfaces (which will increase stormwater runoff from the project site), and the chemical changes in the stormwater runoff that will reflect urbanization of the project site.

(2) Air Pollution: The only direct emission of air pollutants that this project is likely to create is fugitive dust associated with construction activities. State of Hawaii Department of Health Rules and Regulations (Chapter 43, Section 10) stipulate control measures that are to employed to reduce this type of emission. Primary control consists of frequent wetting down of loose soil areas (mentioned above) with water, oil or suitable chemicals. An effective watering program can reduce particulate emissions from construction sites by as much as 50 percent. Other control measures include good housekeeping on the job site and possibly, erection of dust catching barriers if nearby local residents are being subjected to suspended particulate levels more than 150 micrograms per cubic meter above the existing background levels.

Emissions from vehicles traveling on roadways in the project vicinity can be decreased if (a) the emission rate for each vehicle is decreased, (b) the total number of vehicles operating is decreased, or (c) the roadway configuration is altered to permit vehicle movement at more rapid rates of speed with as little time as possible spent in queues with engines idling.

At present, an individual developer can do little to decrease emission rates from individual vehicles. Federally-mandated controls on emissions from new vehicles produced during the next few years will become more and more effective as older vehicles are removed from the vehicle fleet, but the impact of these constrols will not be fully achieved until 1995.

It is always possible to build fewer units in order to reduce the amount of traffic going to and from the project, but the microscale carbon monoxide analysis carried out in the air quality study indicates that State and Federal Air Quality Standards can be met by 1995 with no change in present construction plans. Any delay in the project completion date would serve to further decrease the expected air pollutant emissions associated with project traffic. A State program of mandatory vehicle emissions inspections could also serve to encourage vehicle owners to maintain vehicles in such a way that lowered emission rates could be sustained over the years, but at present no such program exists.

The only potential mitigative alteration to the proposed roadway configuration would be at the intersection of the new road from Waterfront Manor and Waipio Point Access Road. If a right turn lane with a yield sign is constructed instead of a right lane intersection with a stop sign, then morning traffic leaving Waterfront Manor will be able to proceed as expeditiously as possible with a minimum of queuing. A change in vehicle speeds from 5 mph to 15 mph under morning cold start conditions can reduce individual vehicle emissions from 275 grams of carbon monoxide per mile traveled to 42 grams per mile using 1982 emission rates.

By including tall and dense vegetation as a part of the project plans the developer is helping to mitigate the impact on air

pollutants upon future residents of Waterfront Manor, since trees and shrubs do have a certain capacity to remove some carbon monoxide and particulate matter from the air.

Finally, vehicular emission estimates contained in the air quality study do not take into consideration the distinct possibility that future gasoline shortages may encourage reduced vehicle use and stimulate auto manufacturers to proceed in new directions to create smaller, more fuel-efficient, cleaner vehicles. Increased research could also result in the production of propulsion systems which create few or none of the air pollutants that are presently of concern.

(3) Noise Pollution: The noise generated by the project site must comply with the following State Department of Health noise regulations and standards.

(a) Public Health Regulations, Chapter 44B, relating to construction noise requires that a contractor obtain a noise permit if noise levels from the construction activities are expected to exceed the allowable levels of the regulations. Construction equipment and on-site vehicles or devices requiring an exhaust of gas or air must have a muffler. The contractor must comply with the conditional use of permit as specified in the regulations and conditions issued with the permit (if a noise permit is attained).

(b) The parking structures must be designed to comply with the provisions of Chapter 44B, Community Noise Control for Oahu. Design of the parking structure will attempt to avoid noise from tire squeals. This can be done by proper design of the turning radius and texturing of the concrete surface (so that the tire can adhere better to the surface).

(c) Traffic noise from heavy vehicles traveling to and from the construction site must be minimized in residential areas and must comply with the provisions of Public Health Regulations, Chapter 44A, Vehicular Noise Control for Oahu.

If construction noise generates complaints, two methods of minimizing noise can be taken: (a) instruct workers to avoid unnecessary "gunning" of construction equipment and to turn off equipment when not in use, and (b) create earth berms which would absorb some of the noise.

Noise which is unavoidable, that is, the noise from the Waipahu High School Athletic Field and from the cane hauling activitiesmay may disturb a few future residents sensitive to such noise. However, the developer will advise the potential purchasers of these noise problems. This would forewarn purchasers of these existing noise conditions. In that way, a person who may be particularly sensitive to noise will not purchase a unit in the development.

Noise created from a personal source (e.g. dogs barking, loud stereo or TV, parties) in which irritation or complaints result, can be reported to the management or to the Honolulu Police Department for their appropriate action.

(4) Impact on Viewplanes: The impact of the 10-story buildings on the viewplanes, as described earlier and as shown in Figure 3 is avoidable. Possible mitigative measures include a change in building height, or consideration of low-rise structures. For economic reasons, a lesser density would result in higher priced per unit sales prices.

Landscaping of the project site and the amount of open space remaining will lessen the impact on the building.

(5) Depleted Resources: As identified in Section 10, resources that will be utilized for this project includes, land, building and landscaping materials, labor, energy, and potable water. These resources are normal living requirements in our urban society and, as such, are unavoidable uses of our man-made and natural resources. It should be noted, however, that the developer plans call for a relatively small amount of potable water from the Pearl Harbor aquifer. The developer proposes to construct an irrigation system for the Ted Makalena Public Golf Course which presently utilizes 223,000 gpd of potable water for irrigation. The water for the irrigation system will come from a surface drainage ditch (draining spring water into Middle Loch). The developer would then request that the Board of Water Supply approve the use of this potable water for the Waterfront Manor project.

10. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES THAT WOULD BE INVOLVED IF THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

The following resources will be committed should the proposed action be implemented.

1. Land: as described in Section 8, land will be committed to a medium-density residential land use.

2. Shoreline: although the project is not located directly adjacent to the shoreline, it is recognized that its proximity to the Middle Loch shoreline will curtail development of nearshore public recreational options (i.e. park use). Landscaping of the site will enhance the appearance of the shoreline area.

3. Building Materials and Landscape Plants: will be committed to the proposed project. These include wood, cement, rock, steel, as well as standard condominium fixtures such as kitchen appliances, carpets, et cetera. The materials could be possibly reused; however, at the present time and state of our economy, it is felt that the reuse of these materials will be limited. Plants and trees used for landscaping will be irretrievable resources committed to the project site.

4. Labor: utilized in the planning, construction, and maintenance will be committed to the project. Although irretrievable, labor is compensated to individuals who work on the project.

5. Views and Viewplanes: will be altered by the proposed project. As indicated previously, the site appearance will be altered from the present open space use to a medium-rise condominium complex. Views of the project site from neighboring areas (Waipahu High School, Kamehameha Highway, Leeward Community College, from the waters of Pearl Harbor looking mauka) will be partially obscured (depending on the elevation and view prospective) due to the height of the building. It should be noted that the view of the project site from other residential/business areas of Waipahu is non-existent (because of the lower elevation of the Waipahu area and the surrounding uses) and subsequently, the project will not affect the viewplanes from Waipahu town.

6. Energy: will be consumed by the future residents of this project. Based on information obtained from the Hawaiian Electric Company, an average two-bedroom condominium unit occupied by three persons and having typical appliances (e.g. frost-free refrigerator, stove-oven, dishwasher, TV) with central water heater, utilizes approximately 450 KWH per month. Because over 75 percent of the dwellings will be one-bedroom units, the annual consumption of energy per unit is estimated to be less than 400 KWH per month. At the present rate of about 7¢ per KWH, this use will amount to $336.00 per year (use of 4800 KWH/year). Other energy consumed will include a gas central water heater and other electrical uses for common use areas; the amount of gas consumption for the cen-

tral heater has not been calculated. Electrical energy utilized for this project in one year will be approximately 4,000,000 KWH. In 1978, the total residential consumption of electricity was 1,799,024,000 KWH. This project would represent less than .2 percent of the total residential electrical consumption of State (and .25 percent of Honolulu County).

7. Potable Water: will be available to the project site. As described, the project proposes to develop existing surface water to irrigate the Ted Makalena Golf Course. The golf course presently uses potable water for irrigation. The use of surface water for irrigation will result in the savings approximately 223,000 of potable water. The project will then utilize approximately 258,900 gpd (863 x 300 gpd/unit). Additionally, the three (3) wells on the Waterfront Manor site will be sealed, thereby further reducing the amount of water being withdrawn from the Pearl Harbor basin.

11. AN INDICATION OF WHAT OTHER INTERESTS AND CONSIDERATIONS OF GOVERNMENTAL POLICIES ARE THOUGHT TO OFFSET THE ADVERSE ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

There are several governmental policies that would offset the adverse environmental impacts. These are as follows:

(1) The Federal Clean Air Act requires that automobile manufacturers install air emission control devices in new automobiles. As the vehicular fleet is replaced by newer vehicles, the emissions will be less. Subsequently, the ambient air quality will be cleaner. This is the reason why, by 1995, the CO levels at the intersection of Waipio Access Road and Farrington Highway will decrease.

(2) The General Plan identifies the Ewa area as the second urban center. CIP improvements, business and industrial centers, and housing are being constructed because of urban land use designation and the higher rezonings being granted. The existing and planned facilities will provide adequate public services and personnel to accommodate the proposed project.

(3) In addition to the existing policies, codes, standards, and regulations, governmental agencies (i.e. Department of Land Utilization, City Council, Board of Water Suply, Department of Public Works) will still have the authority to place restrictions on the proposed project. For example: the SMA permit may, as a condition, require a lesser density or place a height limitation on the buildings. The Board of Water Supply may not approve potable water usage up to the 863 units. These governmental conditions may be imposed at the time the permit or approval process is finalized.

12. ORGANIZATIONS AND PERSONS CONSULTED

The EIS Preparation Notice was filed with the State Environmental Quality Commission on March 23, 1980. Environmental Communications, Inc. (ECI) sent copies of the EIS Preparation Notice (see Exhibit 4), to various agencies requesting their review and comments. A total of twenty-four (24) agencies were provided copies of the Notice, these agencies are identified in Table 2. Of this total, five (5) provided no responses, two (2) had no comments, and the remaining seventeen (17), provided comments on the proposed project. Table 2 provides an accounting of those agencies receiving a Notice, those commenting, and pages on which their comments and ECI's dispositions are provided.

The Draft EIS was filed with the Environmental Quality Commission and the Department of Land Utilizatin, City & County of Honolulu on November 5, 1980; the Draft EIS review period officially began on November 8, 1980. The deadline date for responses was December 8, 1980. Section 14 provides a detailed breakdown of the distribution list, the agencies sending in a reply, and the date of their reply.

This Final EIS was filed with the Environmental Quality Commission (20 copies) and the Department of Land Utilization (5 copies) on December 22, 1980.

13. REPRODUCTION OF COMMENTS AND RESPONSES MADE DURING THE CONSULTATION PERIOD

In the following pages are half size reproductions of the comments received during the consultation period (March 23 through April 23, 1980). Where substantive comments were provided, the letter from ECI responding to the comments follow. The letters are listed in chronological order (from the earliest received to the latest). In order to find specific letters, please refer to Table 2, below.

TABLE 2

AGENCIES INVOLVED IN THE CONSULTATION PERIOD

Agency/Organization	Date of Response	Page
City and County Agencies:		
Board of Water Supply	3-27-80	13-10
Department of General Planning	3-27-80	13-9
Department of Parks and Recreation	3-25-80	13-7
Department of Public Works	4-2-80	13-11
Department of Transportation Services	4-15-80	13-19
Honolulu Fire Department	3-24-80	13-2
Honolulu Police Department	3-27-80	13-8
State Agencies:		
Department of Agriculture	No response	
Department of Education	3-24-80	13-5
Department of Health	4-8-80	13-2
Department of Land & Natural Resources	4-8-80	13-14
Department of Planning and Economic Development	4-15-80	13-18
Department of Transportation	4-16-80*	13-2, 13-20
U.H. Environmental Center	3-24-80	13-6
Office of Environmental Quality Control	3-24-80	13-3
U.H. Water Resources Research Center	No response	
Federal Agencies:		
Fish and Wildlife Service	4-15-80	13-16
U.S. Army Corps of Engineers	4-21-80	13-21
Civic and Private Environmental Organizations:		
American Lung Association of Hawaii	4-21-80	13-20
Life of the Land	No response	
Pearl City Neighborhood Board No. 21	No response	
Outdoor Circle	No response	
Waipahu Community Association	4-14-80	13-15

*Two (2) letters (indicating that they had no comments) were received; the first letter was dated March 21, 1980 and, the second, April 16, 1980.

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIR TRANSPORTATION FACILITIES DIVISION
HONOLULU INTERNATIONAL AIRPORT • HONOLULU, HAWAII 96819

March 21, 1980

RYOKICHI HIGASHIONNA, PH.D.
DIRECTOR

DEPUTY DIRECTORS
JACK K. SUWA
JAMES R. CARRAS
JAMES B. MCCORMICK
JONATHAN K. SHIMADA, PH.D.

IN REPLY REFER TO
AIR-EP
1477

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

Dear Mr. Rodriguez:

Thank you for apprising us of the Proposed Waterfront Manor at Waiawa-Waipio, Ewa District and providing us an opportunity to comment on this matter.

At this time, we have no significant comments nor do we foresee any conflicts with the project and our plans and programs.

Very truly yours,

Jonathan K. Shimada

JONATHAN K. SHIMADA
Deputy Director

cc: Department of Land Utilization

13-2

MAR 26 1980

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
1455 S. BERETANIA STREET, ROOM 305
HONOLULU, HAWAII 96814

FRANK F. FASI
MAYOR

B. K. AIU
CHIEF

March 24, 1980

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

Dear Mr. Rodriguez:

SUBJECT: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District Oahu

We have no objections to the proposed project.

The Waipio Point Access Road is approximately three miles away, with response time approximately seven minutes from Waipahu Fire Station. This station houses one engine company and one ladder company and is the headquarters for the Battalion Chief. Supportive fire service will also be provided by the Pearl City Fire Station.

Our Capital Improvement Program for FY 1980-81 calls for a new fire station in the Waipio-Crestview area. With the additional fire station, this area will have more than adequate fire protection. This proposed fire station is fourth in priority and construction is projected for fiscal years 1981 through 1986, subject to the availability of funds.

Should you have any questions, please contact Acting Assistant Chief Lawrence Suganuma at 955-8304.

Sincerely,

Boniface K. Aiu

BONIFACE K. AIU
Fire Chief

BKA:LS:eya

cc: Dept. of Land Utilization

MAR 26 1980

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 7, 1980

Mr. Boniface K. Aiu, Chief
Fire Department
City and County of Honolulu
1455 S. Beretania Street, Room 305
Honolulu, Hawaii 96814

Dear Mr. Aiu:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

13-3

Thank you for your response of March 24, 1980, relating to the EIS Preparation Notice for the Proposed Waterfront Manor Project. The information provided in your letter will be incorporated into the EIS now being prepared.

We would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

We appreciate this information and your expedient response.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

1152 BISHOP BUILDING, SUITE 508 • P. O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8391

GEORGE R. ARIYOSHI
GOVERNOR

RICHARD O'CONNELL
DIRECTOR

TELEPHONE NO.
548-6915

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

March 24, 1980

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

SUBJECT: EIS Preparation Notice for Waterfront Manor, Waiau-Waipio, Ewa District, Oahu

Dear Mr. Rodriguez,

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

1. Appropriate maps should be included in the EIS for ease of identification of project location.

2. How much water is required? Discussion should also reflect the conclusions of the Water Commission regarding overdraft of the Pearl Harbor ground water basin.

3. How much sewage will the project generate? Where will it be treated and discharged?

4. What is the definition of lower to moderate income? What is the estimated range of costs for the units? Will Hawaii Housing Authority be purchasing some units?

5. We recommend that the Hawaii Housing Authority and the Navy be consulted on this project.

6. The preparation notice indicates that ponds will be created for the project. In the past, this area has had mosquito problems. Ponds may aggrevate the problem.

7. The impact of pesticides and fertilizers on Pearl Harbor should be discussed.

MAR 28 1980

8. The EIS should discuss the project in terms of the Coastal Zone Management Program, State Environmental Policy Act, the General Plan, and the State Plan.

We trust that these comments will be helpful to you in preparing the EIS. If you should have any questions regarding this matter, please do not hesitate to contact us.

Sincerely,

Richard L. O'Connell
Director

cc: DLU

13-4

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 7, 1980

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

Dear Mr. O'Connell:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Walawa-Waipio, Ewa District, Oahu

Thank you for your response, dated March 24, 1980, on the EIS Preparation Notice for the proposed Waterfront Manor Project. We would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

In regards to your concerns, (items 1 through 8), we note that all these subjects will be discussed in the EIS. Also, during the preparation of the EIS, we anticipate that along with the reproduction of your letter, we will indicate the specific subsection in the EIS that provides discussion on each of your comments.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization

1132 BISHOP BUILDING SUITE 508 • P.O. BOX 936 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8391

GEORGE R. ARIYOSHI
GOVERNOR

CHARLES G. CLARK
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

March 24, 1980

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

Dear Mr. Rodriguez:

SUBJECT: Consultation Process Prior to Filing EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

We have reviewed your submittal of March 14, 1980 and note that the proposed action differs slightly from the data submitted earlier in January of this year. Because of the change in the number of units and bedrooms, our estimate of projected enrollment has been revised.

Student enrollment in the K-6 grade level has now been assigned to Lehua Elementary School rather than to August Ahrens Elementary School. There is a severe classroom shortage at Ahrens and a surplus of classrooms at Lehua.

SCHOOL	GRADE	APPROXIMATE ENROLLMENT
Lehua Elementary	K-6	20 - 40
Waipahu Intermediate	7-8	10 - 20
Waipahu High	9-12	10 - 20

1515

AN EQUAL OPPORTUNITY EMPLOYER

MAR 31 1980

We would like to call to your attention our response of January 17, 1980 to Park Engineering which confirmed our concurrence with the temporary alignment of the 56-foot roadway with the ultimate alignment to Leeward Community College utilizing a portion of Waipahu High School land. On February 14, 1980 the Department of Land & Natural Resources wrote to Park Engineering objecting to the ultimate alignment because of the use restrictions imposed by the Federal Government when the Waipahu High School land was acquired.

Should there be any questions, please contact Mr. Howard Lau at 548-5704.

Sincerely,

CHARLES G. CLARK
Superintendent

CGC:HL:jl

cc: Dept. of Land Utilization
DAGS
Dept. of Land & Nat. Res.
Leeward District
Mr. James E. Edington

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 7, 1980

Mr. Charles G. Clark, Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Mr. Clark:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

We appreciate your March 24, 1980 response to our EIS Preparation Notice for the Proposed Waterfront Manor Project. First, we would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

13-6

1132 BISHOP BUILDING SUITE 508 • P.O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8391

University of Hawaii at Manoa

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

Office of the Director

March 24, 1980

PN:0005

Mr. Fred J. Rodriguez
Environmental Communications, Inc.
P.O. Box 536
Honolulu, Hawaii 96822

Dear Mr. Rodriguez:

Preparation Notice
Draft Environmental Impact Statement
Proposed Waterfront Manor
Waiawa-Waipio, Ewa District, Oahu

The Environmental Center has received the above cited preparation notice for review. Given the nature of the information contained in the notice we can offer no specific questions or comments at this time.

In general, however, we would like to see the EIS address the environmental impacts in light of other new development in this area. Since the Waiawa-Waipio region is undergoing rapid development questions over such matters as traffic, air pollution, water supply, sewage and other major concerns should be assessed in the context of short and long-term development plans and issues. Furthermore, the cumulative environmental impacts of the project should be evaluated from a regional perspective, taking into account other developments or projects which have been officially proposed or are under construction.

Thank you for soliciting our comments on this notice. We look forward to making an in-depth review of the EIS when it becomes available.

Sincerely,

Doak C. Cox
Director

DCC/dh

cc: Department of Land Utilization
OEQC
John Sorensen

AN EQUAL OPPORTUNITY EMPLOYER

MAR 31 1980

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 7, 1980

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

Dear Mr. Cox:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

Thank you for your letter of March 24, 1980, regarding the EIS Preparation Notice for the proposed Waterfront Manor Project. First, we would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

Responding to your comment on discussion of cumulative impacts, we note that we will address cumulative impact to the extent that (1) data is available for other projects in the area; (2) these proposed projects will be implemented in accordace with County's General Plan; (3) this type of analysis is practical and will not result in a detailed review and evaluation of each project which is beyond the scope of the EIS.

We appreciate your comment on this concern.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

1152 BISHOP BUILDING, SUITE 508 • P. O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8391

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

FRANK F. FASI
MAYOR

RAMON DURAN
DIRECTOR

March 25, 1980

Mr. F. J. Rodriguez, President
Environmental Communications, Inc.
1152 Bishop Building, Suite 508
P. O. Box 536
Honolulu, Hawaii 96809

Dear Mr. Rodriguez:

SUBJECT: CONSULTATION PROCESS PRIOR TO FILING THE EIS FOR THE PROPOSED WATERFRONT MANOR

At this time, we have no comments to offer on the EIS Preparation Notice of the proposed Waterfront Manor.

Warm regards.

Sincerely,

RAMON DURAN, Director

RD:sn

MAR 31 1980

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96814 AREA CODE (808) 955-4111

FRANK F. FASI
MAYOR

FRANCIS KEALA
CHIEF

OUR REFERENCE EFS-ES

March 27, 1980

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

Dear Mr. Rodriguez:

CONSULTATION PROCESS PRIOR TO FILING
THE EIS FOR THE PROPOSED WATERFRONT MANOR,
WAIAWA-WAIPIO, EWA DISTRICT, OAHU

Our concerns are the same as were stated in January, when we reviewed the request for a zone change to accommodate this project.

First, the addition of 576 housing units in this area may mean as many as 1700-1800 new residents, which will increase considerably the demand for police services in the area. At the current ratio of 2.5 police employees per 1,000 population, we could anticipate a workload increase in the area equivalent to more than four police employees.

Second, the addition of approximately 1,000 vehicles to the area promises to put a considerable strain on the existing road network. We question the ability of Waipio Point Access Road and its junction with Farrington Highway to absorb this increased volume of traffic without serious congestion. To reduce the possibility and hazards of such congestion, we would like to see some provision for upgrading the other roadways that could provide access to the project area. These are the Cane Haul Road that runs from the vicinity of the center of the proposed development into Waipahu, and Waiawa Road, which runs from the Diamond Head end of the development toward Pearl City. We would hope that your plans for this project will address this concern.

Sincerely,

FRANCIS KEALA
Chief of Police

By
EARL THOMPSON
Assistant Chief
Administrative Bureau

cc: Tyrone Kusao, Director
Department of Land Utilization

MAR 31 1980

13-8

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 7, 1980

Chief Francis Keala
Police Department
City and County of Honolulu
1455 South Beretania Street
Honolulu, Hawaii 96814

Dear Chief Keala:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

Thank you for your response of March 27, 1980, regarding the EIS Preparation Notice for the Proposed Waterfront Manor Project. The information provided on the number of police employees per 1,000 people will be included in the EIS (in light of the increase number of units, we will increase the 4+ police employees needed, accordingly). Additionally, we will address the adequacy and proposed improvements to the existing roadway system.

We would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles, and other demand/impact factors will be recalculated and incorporated into the EIS.

We appreciate your concern on this matter.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

1132 BISHOP STREET NO. SUITE 508 • P. O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8391

DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

GEORGE S. MORIGUCHI
CHIEF PLANNING OFFICER

DGP3/80-759(CT)

March 27, 1980

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

Gentlemen:

Environmental Impact Statement Preparation Notice for
Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu
Comments Requested March 17, 1980

The assessment by the Department of Land Utilization outlines the areas of concern generally.

In our review of the impact statement, we will be particularly interested in the following areas of concern:

Soils - the soil types and their characteristics for urban as well as agricultural uses, including wet and dry crops

Water table and possible salt water intrusion

The ultimate fate of drainage from the project and the estimated pollutant loads

Water demand and availability for the project, water source, i.e., well field

Traffic and traffic mix - golf course, cane haul, this project, existing and projected other traffic; intersection volumes at Waipio Point Access Road and Farrington Highway, intersection capacity

13-9

Demographic impact - kinds of people expected here, i.e., age and income brackets; kinds of community services they will require; proximity to such services

Visual impact - view of project from Leeward Community College toward Pearl Harbor

Thank you for affording us the opportunity of reviewing the preparation notice.

Sincerely,

GEORGE S. MORIGUCHI
Chief Planning Officer

GSM:fmt

cc: DLU

MAR 31 1980

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 7, 1980

Mr. George S. Moriguchi, Chief Planning Officer
Department of General Planning
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Moriguchi:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

Thank you for your comments of March 27, 1980, regarding the EIS Preparation Notice for the Proposed Waterfront Manor Project. Each of your concerns will be discussed in the EIS.

We would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ulitmate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

In order to assure that your concerns are included in the EIS, we plan to have a section which outlines the subjects brought up during the EIS Consultation Period, and indicate where (in the EIS) these concerns are addressed.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

13-10

1152 BISHOP BUILDING SUITE 508 • P O BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8391

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA
HONOLULU, HAWAII 96843

March 27, 1980

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

Dear Mr. Rodriguez:

Subject: Your Letter of March 17, 1980, on the Proposed Waterfront Manor, Tax Map Key 9-4-08: 23

We request that the following be included in your environmental impact statement for the proposed project:

1. A map showing the proposed waterline and sizes needed to serve the development; and

2. A discussion on the source of water for the project and any other alternative sources.

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

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

APR 2 1980

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 7, 1980

Mr. Kazu Hayashida, Manager & Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96813

Dear Mr. Hayashida:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor Waiawa-Waipio, Ewa District, Oahu

We appreciate your response of March 27, 1980 on the EIS Preparation Notice for the proposed Waterfront Manor Project. First, we would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

Regarding your comments on the proposed water facilities, we will include this information (e.g. map showing the proposed waterline and sizes needed to serve the development, discussion on the source of water) in the EIS.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

1152 BISHOP BUILDING, SUITE 508 • P. O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8391

13-111

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

WALLACE MIYAHIRA
DIRECTOR AND CHIEF ENGINEER

ENV 80-104

April 2, 1980

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

Dear Mr. Rodriguez:

Re: EIS Consultation Process for Proposed Waterfront Manor, Waiawa-Waipio, Ewa, Oahu

We have the following comments on the proposed project.

1. Drainage and Erosion Control. There will be no impact on existing drainage facilities. New storm drains which enter directly into Pearl Harbor should be discussed in the EIS. Facilities that retain runoff and reduce flow rates to pre-development conditions are encouraged. Erosion control measures that will be employed to prevent soil losses during construction should be discussed.

2. Refuse Collection. If private collection is employed, it will not affect the workload of municipal collection.

3. Wastewater. There are no existing sewers in the immediate project site. The construction of the necessary trunk sewer by the developer should be discussed.

Very truly yours,

WALLACE MIYAHIRA
Director and Chief Engineer

cc: DLU
WWM
Engineering

APR 8 1980

F. J. RODRIGUEZ,
PRESIDENT

ENVIRONMENTAL
COMMUNICATIONS
INC.

August 7, 1980

Mr. Wallace Miyahira, Director & Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Miyahira:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

Thank you for your letter of April 2, 1980 on the EIS Preparation Notice for the Proposed Waterfront Manor Project. We would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

Because of these additional units, the engineering consultant will provide revised drainage and wastewater estimates to your office. We appreciate the information provided in your response.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

13-12

1152 BISHOP ST., KING SUITE 508 • P.O. BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8391

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

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

GEORGE A. L. YUEN
DIRECTOR OF HEALTH

VERNE C. WAITE, M.D.
DEPUTY DIRECTOR OF HEALTH

HENRY K. THOMPSON, M.A.
DEPUTY DIRECTOR OF HEALTH

JAMES S. KUMAGAI, PH.D., P.E.
DEPUTY DIRECTOR OF HEALTH

TADAO BEPPU
DEPUTY DIRECTOR OF HEALTH

April 8, 1980

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

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

Dear Mr. Rodriguez:

Subject: Request for Comments on Proposed Environmental Impact Statement (EIS) for Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

Thank you for allowing us to review and comment on the subject proposed EIS.

It is our understanding that the Waterfront Manor Project proposes the construction of a total of 576 one- and two-bedroom condominium units which would provide housing for approximately 1,400 persons in the Waiawa-Waipio area of Oahu.

We believe the size, nature, and location of the project makes the question of adequate water supply an extremely critical issue. In view of the recent designation of the Pearl Harbor area as a groundwater control area by the Board of Land and Natural Resources, we strongly recommend that the question of water demand, supply, and its impact on regionalized water quality be fully addressed in the forthcoming environmental impact statement for the Waterfront Manor Project. Please be advised that since the designation of the Pearl Harbor area, pumpage limits have been identified and set. This action has been taken in the interest of preserving the quality of water being withdrawn from the Pearl Harbor Basin. Proposed additional withdrawals, which when added to the present demand may place the total pumpage from the aquifer over these limits, may not be allowed.

We recommend that the sponsors of the project contact the Division of Water and Land Development of the Department of Land and Natural Resources for clarification of this matter.

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.

Sincerely,

for MELVIN K. KOIZUMI
Deputy Director for
Environmental Health

cc: Dept. of Land Utilization

APR 9 1980

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 7, 1980

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

Dear Mr. Koizumi:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Walawa-Waipio, Ewa District, Oahu

We have received your comments, dated April 8, 1980, on the EIS Preparation Notice for the proposed Waterfront Manor Project. First, we would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

Your comments on the availability of potable water is indeed, crucial, for this and all proposed projects in the Pearl Harbor area. Please be assured that we will be addressing this concern with your agency, and have already consulted with the Department of Land and Natural Resources.

Thank you for your response.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

13-14

1152 BISHOP BUILDING SUITE 503 • P O BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8391

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

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

SUSUMU ONO, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

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

April 8, 1980

REF NO.: APO-1500

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

Dear Mr. Rodriguez:

We have reviewed the EIS preparation notice for the Middle Loch condominium to be built by Horita Realty.

There are many points that ought to be addressed by the EIS. We suggest:

1. The effect of the project on water resources of the area.
2. Shoreline design and use.
3. The effect upon DOT's energy corridor.
4. The impact of traffic from the project.
5. Allocation of ground water supplies from the Pearl Harbor aquifer.
6. Impact of grading and control of runoff during clearing and construction.

Very truly yours,

SUSUMU ONO, Chairman
Board of Land and Natural Resources

APR 16 1980

PAGE 13-13 (INTENTIONALLY LEFT BLANK)

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 7, 1980

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

Dear Mr. Ono:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

Thank you for your comments of April 8, 1980 on the EIS Preparation Notice for the Proposed Waterfront Manor Project. We would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

Your comments (items 1 through 6) will be discussed in the EIS document. We plan to have a section which outlines the concerns brought up during the EIS Consultation Period, and idenfity the specific subsections (in the EIS) where concerns are addressed. In this way, we feel that we can substantiate that all comments were considered and included in the EIS.

We appreciate your response.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

13-15

1152 BISHOP BUILDING SUITE 508 • P O BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8361

"REPRESENTING ALL THE PEOPLE OF WAIPAHU"

Waipahu Community Association

HONOLULU SAVINGS AND LOAN BUILDING
94-227 WAIPAHU DEPOT STREET
WAIPAHU, HAWAII 96797
TELEPHONE 677-4950

April 14, 1980

Mr. F. J. Rodriguez
Environmental Communications, Inc.
P. O. Box 536
Honolulu, HI 96808

Dear Mr. Rodriguez:

In response to your letter of March 17, 1980, please be informed that our Board of Directors favors the development of the eighteen plus acres planned as Waterfront Manor, Waiawa-Waipio, Ewa District and Oahu, but with certain reservations.

The reservations are those discussed with the developers presentation team at the time of presentation to our group of community leaders, namely:

Support: Zone change Ag-1 to A-2, as required.
Oppose : Building height in excess of forty (40) feet.
Seek : Additional ingress/egress routes to project, to prevent traffic congestion that will develop from the development.

Educated observation of similar developments dictates that planned vehicle parking spaces will not be adequate. Additional parking required will tend to obstruct traffic as vehicles line the streets within the development, and the single access road leading to the development.

The concept of multiple family dwellings is in keeping with the need to consider alternatives that can make housing available at minimum cost to prospective buyers, however, strong management of such a project must be incorporated into the overall concept to ensure successful operation and maintenance of property values.

Sincerely,

C.C. Anderson
President

CCA/ls

copy to: Pearl City Neighborhood Board #21
Life of the Land
Herbert K. Horita Realty, Inc.
file
Department of Land Utilization

APR 17 1980

COMPRISING OF
Crestview/Seaview Association, D. O. E. Leeward District, Friends of Waipahu Cultural Garden Park, Harbor View Neighborhood Association, Leeward Community College, Oahu Sugar Company, Robinson Heights Association, Waiani Neighborhood Association, Waiani Rise Association, Waipahu Advocates for the Elderly, Waipahu Businessmen's Association, Waipahu Highlands Association, Waipahu Jackrabbits, Waipahu Recreation Advisory Council, Waipahu Recreation Center

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 7, 1980

Mr. C.O. Anderson, President
Waipahu Community Association
94-229 Waipahu Depot Street
Waipahu, Hawaii 96797

Dear Mr. Anderson:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

We have received and reviewed your letter of April 14, 1980 on the abovementioned subject. First, we would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

Please be assured that all the concerns expressed in your letter will be addressed especially in light of the above noted increase in units. Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

13-16

1152 BISHOP BUILDING SUITE 508 • P.O. BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8391

United States Department of the Interior

FISH AND WILDLIFE SERVICE
300 ALA MOANA BOULEVARD
P.O. BOX 50167
HONOLULU, HAWAII 96850

IN REPLY REFER TO:
ES
Room 6307

April 15, 1980

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

Re: EIS Preparation Notice
Waterfront Manor,
Waiawa-Waipio,
Ewa District, Oahu, Hawaii

Dear Sir:

We have reviewed the referenced preparation notice dated March 17, 1980, and offer the following comments for your consideration.

1. The parcel of land planned for development, as shown on the Project Location Map provided the U.S. Fish and Wildlife Service by your office, is a wetland. Development in a wetland must comply with regulations promulgated pursuant to Section 404 (b) of the Clean Water Act (40 CFR 230).

Specifically, Regulations 40 CFR 230.5(b)(ii)(a) and (b) are in part as follows:

> (a). "The activity...must have direct access or proximity to, or be located in the water resources in order to fulfill its basic purpose ...and, (b). that the proposed...activity...will not cause a permanent unacceptable disruption to the...affected aquatic ecosystem..."

The applicant must explain in the EIS how the activity complies with the above provisions.

2. Although this area is not regularly surveyed for waterbirds, Hawaiian coot and gallinule have been seen there occasionally. For this reason, use of this area by waterbirds (endangered and migratory species) must be investigated and addressed in the EIS.

3. The fate of irrigation water and its fertilizer nutirent load must be discussed. Will it drain through the existing culvert into Middle Loch of Pearl Harbor? Where will storm water runoff from the parking areas and tennis courts go? If it goes into Middle Loch, what will be the effect on the nearshore biota?

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

APR 18 1980

We hope these comments will be helpful to you in writing the EIS. Please keep us informed of the status of the project and provide a copy of the Draft EIS.

If we may be of further assistance, please contact us at 546-8326.

Sincerely yours,

Maurice H. Taylor
Field Supervisor
Division of Ecological Services

cc: Dept. of Land Utilization

13-17

ENVIRONMENTAL COMMUNICATIONS INC.

F. J. RODRIGUEZ, PRESIDENT

August 7, 1980

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

Dear Mr. Taylor:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

We have received and reviewed your letter of April 15, 1980 on the abovementioned EIS Preparation Notice. If the property is within the designated wetland area, we will comply with the applicable requirements (e.g. EIS review, permits, approvals). The remaining questions raised by your staff are valid and we will discuss these concerns in the EIS.

In addition, we would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

Thank you for your response.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

1152 BISHOP BUILDING, SUITE 508 • P.O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8391

DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT

Kamamalu Building, 250 South King St., Honolulu, Hawaii • Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

GEORGE R. ARIYOSHI
Governor

HIDETO KONO
Director

FRANK SKRIVANEK
Deputy Director

April 15, 1980

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

Ref. No. 1066

Dear Mr. Rodriguez:

SUBJECT: Waterfront Manor Environmental Impact Statement, Ewa, Oahu

We have reviewed the subject EIS Preparation Notice and wish to make the following comments.

1. As the proposed project site is located predominately on AG-1 zoned lands, the EIS should contain a review of the potential loss of agricultural activities on or near the residential development. Soil classification, types of agricultural crops historically cultivated and land productivity ratings are some areas which the EIS should assess.

2. Infrastructural elements and capacities should be thoroughly inventoried including those pertaining to highways and roadways, water and sewage systems, parks and playgrounds and public schools.

3. Since a Shoreline Management Permit is required, it is recommended that the applicant directly address within the EIS all pertinent Coastal Zone Management objectives and policies of Chapter 205A, Hawaii Revised Statutes. We cite in particular the fourth policy under the Scenic and Open Space resource category which encourages "those developments which are not coastal dependent to locate in inland areas." As applicable, the applicant should also address those objectives and policies pertaining to recreation, flood hazard and historic resources.

We have no additional remarks to offer at this time, but would like the privilege of commenting further when the draft EIS is available for review.

Sincerely,

Hideto Kono

cc: Department of Land Utilization
Office of Environmental Quality Control

APR 18 1980

13-18

ENVIRONMENTAL COMMUNICATIONS INC.

F. J. RODRIGUEZ, PRESIDENT

August 7, 1980

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

Dear Mr. Kono:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

Thank you for your letter of April 15, 1980 on the EIS Preparation Notice for the Proposed Waterfront Manor Project. We would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

In response to your comments, please be assured that each of these items will be reviewed in the EIS document. We plan to include in the EIS a section which outlines the comments received during the EIS Consultation Period, and the subsections in the EIS where these comments are specifically discussed.

We appreciate the comments provided.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

1152 BISHOP BUILDING SUITE 508 • P O BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521 8391

DEPARTMENT OF TRANSPORTATION SERVICES

CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

DIRECTOR
TE3/80-794

April 15, 1980

Mr. Fred J. Rodriguez
Environmental Communications, Inc.
P. O. Box 536
Honolulu, Hawaii 96808

Dear Mr. Rodriguez:

Subject: Your Letter of March 17, 1980 Regarding Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor
Waiawa-Waipio, Ewa District, Oahu

We recommend that a traffic study be included in the Environmental Impact Statement. It should include a discussion on the impact of this project on the supporting street system. The demand for bus service resulting from this project should also be discussed.

Very truly yours,

AKIRA FUJITA
Acting Director

cc: Dept. of Land Utilization

13-19

APR 16 1980

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

August 7, 1980

Mr. Akira Fujita, Acting Director
Department of Transportation Services
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Fujita:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

Thank you for your comments of April 15, 1980 on the above indicated subject. First, we would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

We would like to note that the engineering consultant, Park Engineering, did send your department a copy of the Traffic Report in October, 1979. (See attached.) Because of the increase in total units, we will be recalculating the traffic estimates and revising the traffic report. This report will be included in the EIS.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

1152 BISHOP BUILDING SUITE 508 • P. O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8351

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 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

April 16, 1980

STP 8.6182

Mr. F. J. Rodriguez
Environmental Communications, Inc.
1152 Bishop Building, Suite 508
Honolulu, Hawaii 96809

Dear Mr. Rodriguez:

Subject: Proposed Waterfront Manor
Waiawa-Waipio, Ewa District, Oahu

We have reviewed the subject EIS preparation notice and based on the information presented we have no objections regarding the development of the 576 units.

However, we would appreciate the opportunity to review the EIS when drafted.

Very truly yours,

Jonathan K. Shimada

for Ryokichi Higashionna
Director of Transportation

13-20

APR 21 1980

245 North Kukui Street, Honolulu, Hawaii 96817, Telephone (808) 537-5966

AMERICAN LUNG ASSOCIATION *of Hawaii*

April 21, 1980

Mr. Fred J. Rodriquez, President
Environmental Communications, Inc.
P.O. Box 536
Honolulu, Hawaii 96809

Dear Mr. Rodriquez:

Subject: Proposed Waterfront Manor, Waiawa-Waipio, Oahu

Thank you for informing us of the subject project and seeking our early participation in the "consultation process".

We trust that your EIS will adequately address the impact on the principal roads and streets serving the project area as well as the concomitant effect on air quality. Of particular concern is the cumulative impact, i.e., the combined effect of existing conditions plus the increments of traffic and air quality degradation directly attributable to this project and any other approved or under-construction projects in the area.

We look forward to reviewing the final document when it is completed.

Sincerely yours,

James W. Morrow

James W. Morrow, Director
Environmental Health

JWM;jm

cc: DLU
OEQC

APR 21 1980

Christmas Seals Fight TB, Asthma, Emphysema, Air Pollution

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 7, 1980

Mr. James W. Morrow, Director
Environmental Health
American Lung Association of Hawaii
245 North Kukui Street
Honolulu, Hawaii 96817

Dear Mr. Morrow:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Walawa-Waipio, Ewa District, Oahu

We have received and reviewed your response of April 21, 1980, on the abovementioned EIS Preparation Notice. First, we would like to acknowledge that since the preparation and filing of the Notice, the developer has revised his project plans so that the ultimate project development will be 800 rather than 576 units as stated in the Notice. It should also be noted that the total unit count will be equivalent to only 45% of the total allowable buildable area (about 700,000 s.f. of a maximum allowable of 1.5 million s.f.). Because of this increase, the added water, sewage, parking, traffic, air emissions (from vehicles), and other demand/impact factors will be recalculated and incorporated into the EIS.

The air quality study initially prepared on the 576 units will be revised to reflect the 800 units (as indicated above). A summary of the air quality study will be provided in the EIS document. In addition, a copy of the study will be sent to you for your review and comments.

Thank you for your response.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

13-21

1152 BISHOP BUILDING SUITE 508 • P O BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8391

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 230
FT. SHAFTER, HAWAII 96858

PODED-PV

21 April 1980

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

Dear Mr. Rodriguez:

We have reviewed your request for comments on the Environmental Impact Statement Preparation Notice for the proposed Waterfront Manor Project, Walawa-Waipio, Ewa District, Oahu, dated 17 March 1980. It was difficult for us to review and evaluate the proposal because the subject notice did not contain a map of the project location and sufficient descriptive material. We offer the following general comments for your consideration in preparation of a Draft Environmental Impact Statement (DEIS).

We believe that the DEIS should discuss the relationship between rezoning prime AG-1 lands to R-6 residential and land use plans and planning priorities. Since the proposed project is situated within the Ewa District, potable water supply for the 576 units will have a substantial impact upon Oahu's groundwater supplies. We recommend that you fully evaluate the projected water need for the development, the proposed source of water, and the effects of withdrawal on future groundwater supplies. Additionally, we suggest that you discuss the cumulative impacts of the proposed project and other proposed residential and industrial developments (West Beach Resort Community, Ewa Beach Marina, and the deep draft harbor facility) on the available supplies of potable water in the Ewa District. We also recommend that your DEIS fully address the impacts of the proposed condominimum on area traffic, utilities, sewerage, Pearl Harbor water quality, and sites listed in or eligible for listing in the Hawaii or National Registers of Historic Places.

We wish to point out that there are several wetlands located near the project site (refer to Incl 1). A Department of the Army (DA) permit must be obtained if the proposed development involves the discharge of dredged

APR 2 3 1980

PODED-PV
Mr. Fred J. Rodriguez

21 April 1980

or fill material into waters of the United States (including these wetlands and the waters of Middle Loch). Please note that a portion of the Pearl Harbor National Wildlife Refuge is also located near the proposed residential development (Incl 2). We recommend that you discuss the impacts of the proposed development on the refuge.

In order to avoid costly delays in project planning, we recommend that you submit detailed illustrations of the proposal and an environmental assessment so that we may determine if a DA permit is necessary. We thank you for the opportunity to comment on the proposed project at this early stage.

Sincerely,

B. R. SCHLAPAK
Colonel, Corps of Engineers
District Engineer

2 Incl
As stated

Copy Furnished: w/o incl
Mr. Tyrone T. Kusao, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Source: Wetlands and Wetland Vegetation of Hawaii, by N.E. Elliot & E.M. Hall, 1977. Prepared for US Army Corps of Engineers, POD.

Site 30. PEARL HARBOR - EAST LOCH

Pearl Harbor in southern Oahu is a nearly level coastal plain formed by the submergence of ancient river valleys. Soils are poorly drained deltaic sediments and lie on layers of muck or peat and on reef deposits.

Dozens of Hawaiian fishponds once dotted Pearl Harbor's coastline. Development of the harbor for shipping and military use, however, resulted in destruction of nearly all. Today much of the area is extensive fill land.

Since the introduction of mangrove (Rhizophora mangle) to Oahu, many of Pearl Harbor's coastal areas have become rapidly overgrown with this species. This site (Map 30) includes such an area and is located on Pearl City Peninsula along the waters of the East Loch.

Most of the site is covered by a dense growth of Rhizophora mangle which reaches 40 ft in height. Inland from this is a small area of marsh and cultivated wet paddies. These are characterized by Brachiaria mutica, Scirpus validus, Ludwigia octivalvis and cultivated taro (Colocasia esculenta), watercress (Nasturtium microphyllum) and ung-choi (Ipomoea aquatica). Prior to Navy occupation of the Peninsula, rice was also grown over a much more extensive acreage. Table 30 lists the species found at this site.

Site 31. PEARL HARBOR - MIDDLE LOCH

This site is located north of the Pearl City Peninsula just inland from the Middle Loch (Map 32). It is an extensive inland marsh with mangrove (Rhizophora mangle) and hau (Hibiscus tiliaceus) growing along the coastal edges. A small road runs along its southern edge. Numerous freshwater springs feed this wetland. Some areas are cultivated for watercress, but most are covered by Brachiaria mutica, Scirpus validus and Typha angustata. Other species are listed in Table 31. Strips of fill land occasionally cross the marsh and on these are built small homes and dirt roads. Junk cars and rubbish are strewn along the roads everywhere.

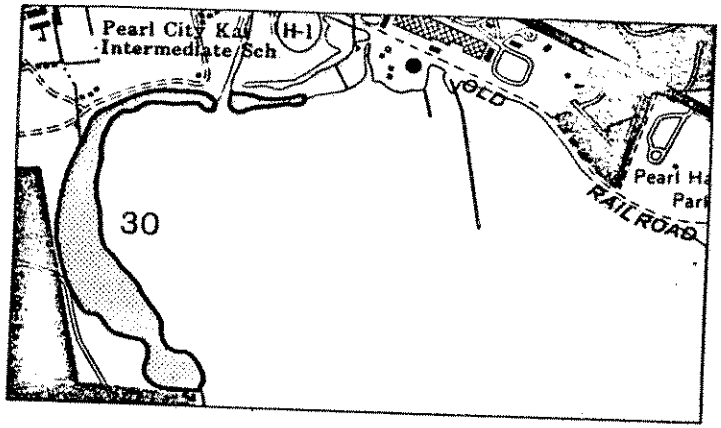
A National Wildlife Refuge occupies a small corner of the peninsula just to the south of the Brachiaria mutica marsh. Batis maritima and mudflats characterize this site, which serves as a habitat for the Hawaiian stilt.

Along the coast to the west, the marsh grades into a thin strip of mangrove swamp.

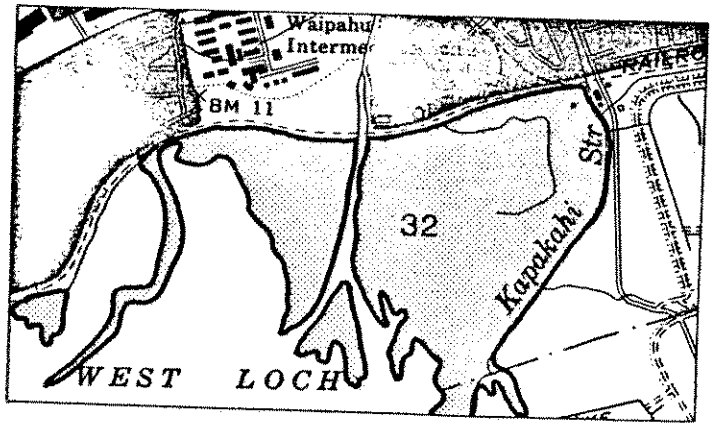
Site 32. PEARL HARBOR - WEST LOCH

This site occupies the northwestern corner of Waipio Peninsula (Map 31). It is covered by Batis maritima and salt and mudflats. Numerous Hawaiian stilts frequent the area. Along the coastal edge are well-developed stands of Rhizophora mangle. The inland edge of the wetland is marked by a dirt road strewn with piles of junk (PLATE 26). Small homes line the opposite side of this road. Table 32 indicates the species found at this site.

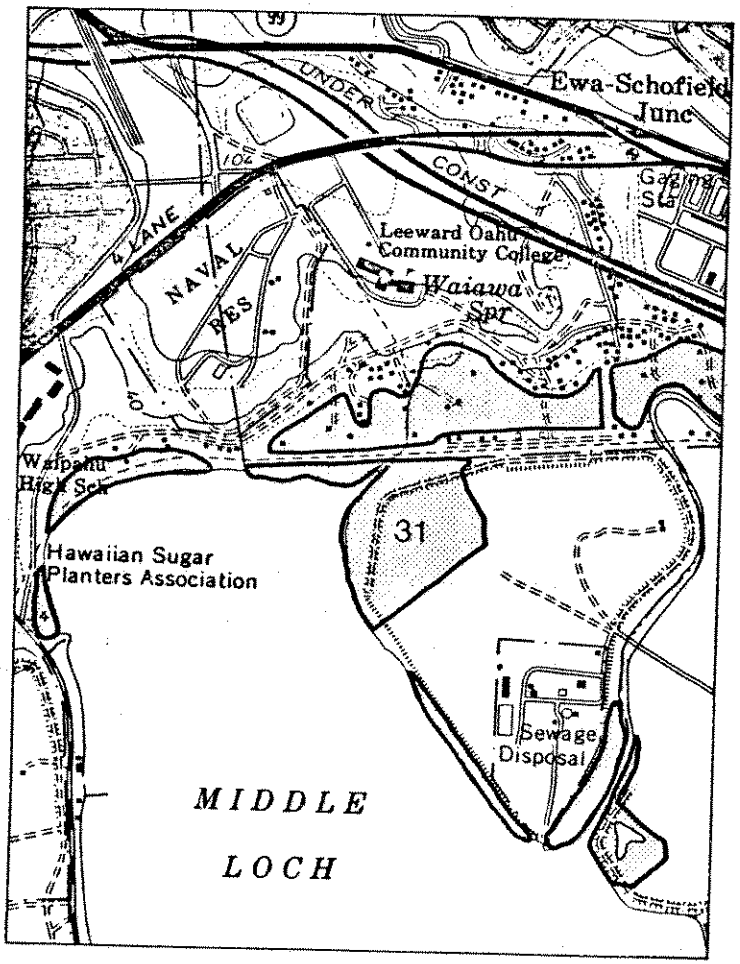
Further west along the West Loch is a small fishpond surrounded by a Rhizophora mangle swamp. It appears similar to other mangrove areas mentioned above. Scirpus validus grows at the edge of the pond.



Map 30. Pearl Harbor-East Loch (Waipahu Quadrangle).
Scale = 1:12,000

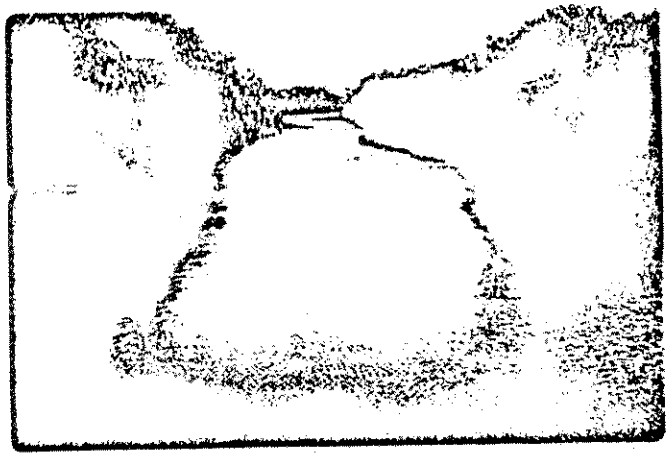


Map 31. Pearl Harbor-West Loch (Waipahu Quadrangle).
Scale = 1:12,000

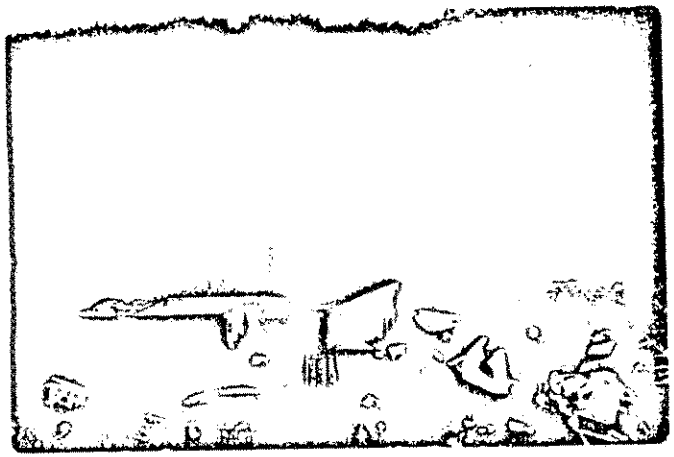


Map 32. Pearl Harbor-Middle Loch (Waipahu Quadrangle).
Scale = 1:12,000

PLATE 26



Pearl Harbor: Mangrove swamps dominated by Rhizophora mangle occur along the edges of the harbor.



Site 32. Pearl Harbor-West Loch: rubbish is dumped along the edge of this Batis maritima-Rhizophora mangle wetland.

Table 30. SPECIES LIST FOR PEARL HARBOR-EAST LOCH, OAHU (Site 30)

		Cover	Abundance
FILICINAE			
SALVINIACEAE			
**Azolla filiculoides	Azolla	1	A
MONOCOTYLEDONAE			
ARACEAE			
*Colocasia esculenta	Taro	2	O
CYPERACEAE			
**Scirpus validus	Great bulrush	1	R
GRAMINEAE			
*Brachiaria mutica	California grass	1	O
*Coix lachryma-jobi	Job's tears	1	R
*Echinochloa colona	Jungle rice	1	R
*Echinochloa crusgalli	Barnyard grass	1	O
DICOTYLEDONAE			
COMPOSITAE			
*Eclipta alba	False daisy	1	O
*Pluchea indica	Indian pluchea	1	R
Youngia japonica	Oriental hawksbeard	1	R
CONVOLVULACEAE			
**Ipomoea aquatica	Swamp cabbage	1	O
Ipomoea obscura	—	1	R
CRUCIFERAE			
**Nasturtium microphyllum	Watercress	2	A
MALVACEAE			
*Hibiscus tiliaceus	Hau	1	R
ONAGRACEAE			
**Ludwigia octivalvis	Kāmole	1	R
RHIZOPHORACEAE			
**Rhizophora mangle	American mangrove	5	F
RUBIACEAE			
Plantago major	Broad-leaved plantain	1	R
SAPINDACEAE			
Cardiospernum halicacabum	Balloon vine	1	R

** Obligate species
* Facultative species

Table 31. SPECIES LIST FOR PEARL HARBOR-MIDDLE LOCH, OAHU (Site 31)

		Cover	Abundance
FILICINAE			
SALVINIACEAE			
**Azolla filiculoides	Azolla	1	A
MONOCOTYLEDONAE			
ARACEAE			
*Colocasia esculenta	Taro	2	O
CANNACEAE			
Canna indica	Ornamental canna	1	R
COMMELINACEAE			
*Commelina diffusa	Honohono	1	O
CYPERACEAE			
*Cyperus alternifolius	Umbrella sedge	1	R
Cyperus polystachyus	—	1	R
**Eleocharis geniculata	—	1	O
**Scirpus paludosus	Makai	1	O
**Scirpus validus	Great bulrush	2	A
Unidentified sedge	—	1	O
GRAMINEAE			
*Brachiaria mutica	California grass	3	A
*Coix lachryma-jobi	Job's tears	1	R
*Echinochloa colona	Jungle rice	1	R
*Echinochloa crusgalli	Barnyard grass	1	O
Eragrostis pectinacea	Carolina lovegrass	1	R
LEMNACEAE			
**Lemna minor	Duckweed	1	A
MUSACEAE			
Musa xparadisiaca	Banana	1	R
TYPHACEAE			
**Typha angustata	Cattail	2	F
DICOTYLEDONAE			
BATIDACEAE			
*Batis maritima	Pickleweed	1	O
COMPOSITAE			
*Pluchea indica	Indian pluchea	1	O
*Pluchea odorata	Pluchea	1	R
Youngia japonica	Oriental hawksbeard	1	R

Table 31. Continued

		Cover	Abundance
CONVOLVULACEAE			
**Ipomoea aquatica	Swamp cabbage	1	O
CRUCIFERAE			
**Nasturtium microphyllum	Watercress	2	A
HALORAGACEAE			
**Myriophyllum brasiliense	Parrots feather	1	R
LEGUMINOSAE			
Leucaena leucocephala	Koa haole	1	R
MALVACEAE			
*Hibiscus tiliaceus	Hau	2	O
NYMPHAEACEAE			
**Nelumbo nucifera	Lotus	1	R
ONAGRACEAE			
**Ludwigia octivalvis	Kāmole	1	O
RHIZOPHORACEAE			
**Rhizophora mangle	American mangrove	3	O
SCROPHULARIACEAE			
**Bacopa monnieria	Water hyssop	1	F

** Obligate species
* Faculative species

1 = <5% cover; 2 = 5-25%; 3 = 26-50%; 4 = 51-75%; 5 = 76-100%

R = Rare; O = Occasional; F = Frequent; A = Abundant; V = Very abundant

Table 32. SPECIES LIST FOR PEARL HARBOR-WEST LOCH, OAHU (Site 32)

		Cover	Abundance
MONOCOTYLEDONAE			
CYPERACEAE			
**Scirpus validus	Great bulrush	1	F
GRAMINEAE			
*Brachiaria mutica	California grass	1	O
DICOTYLEDONAE			
BATIDACEAE			
*Batis maritima	Pickleweed	3	V
CHENOPODIACEAE			
Atriplex semibaccata	Australian salt bush	1	R
COMPOSITAE			
*Pluchea indica	Indian pluchea	1	R
LEGUMINOSAE			
Prosopis pallida	Kiawe	1	R
RHIZOPHORACEAE			
**Rhizophora mangle	American mangrove	3	O

13-26

** Obligate species
* Faculative species

1 = <5% cover; 2 = 5-25%; 3 = 26-50%; 4 = 51-75%; 5 = 76-100%

R = Rare; O = Occasional; F = Frequent; A = Abundant; V = Very abundant

Source: An Ornithological Survey of Hawaiian Wetlands, by R.J. Shallenberger, 1977. Prepared for US Army Corps of Engineers, POD.

SITE NAME: Pearl Harbor Wetlands (includes Pearl Harbor National Wildlife Refuge)

LOCATION: 'Ewa District, O'ahu

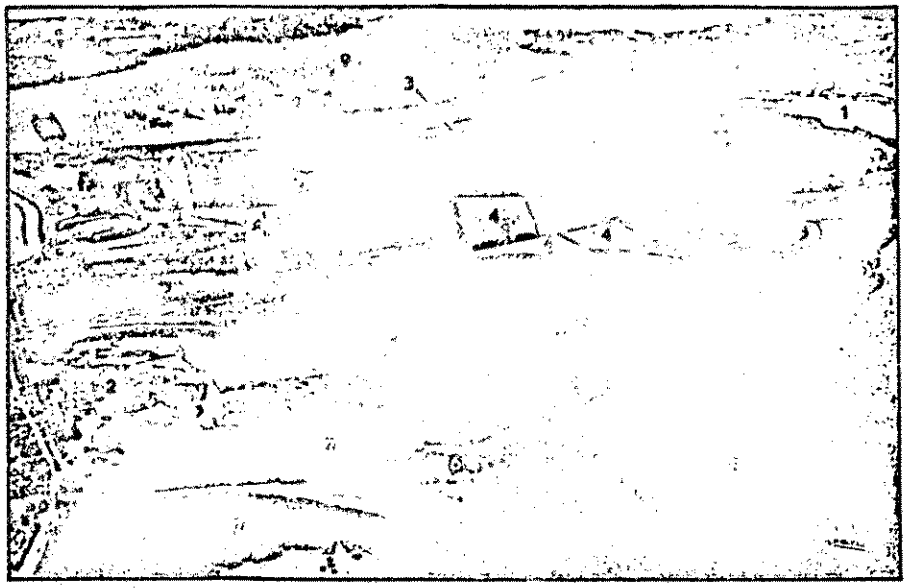
TOPOGRAPHIC MAPS: Wai-pahu, Pu'u-loa, 'Ewa

DATES OF SURVEY: 1 June, 27 August 1977 (Pearl Harbor NWR)
1 June, 19 August 1977 (Honouliuli Ponds)
1 June, 21 August 1977 (Waipio Peninsula)

WETLAND DESCRIPTION: Our survey sites in the Pearl Harbor area included a variety of man-made and "natural" wetlands; ponds along the west shoreline of West Loch (Honouliuli), the Waikele-Kapakahi stream drainage on Waipio Peninsula, and mangrove swamp and ponds on east and west sides of Waiawa (Pearl City) Peninsula. Several other small ponds, marshes and settling basins were not surveyed, but are discussed in the treatment of waterbird abundance and distribution. The nature and condition of the Pearl Harbor wetlands has changed dramatically during this century. As many as 50 fishponds lined the shores and covered the flats within the Pearl Harbor area in the late 1800's. Colonization of this estuary by American (Red) Mangrove approximately 35 years ago signalled the beginning of extensive natural modification of original wetlands.

Honouliuli Sites: Numerous fishponds and a 31 acre salt evaporation pond were found on the west shore of West Loch (Honouliuli) early in this century. At the suggestion of Federal and State biologists, the salt pond was set aside as a wildlife sanctuary by the U.S. Navy in 1971. More recently, this site was selected as one of two areas to be developed as waterbird refuges to compensate for 186 acres of silted coral mudflats that were lost in the construction of the reef runway at Keehi Lagoon. The original pond was extensively modified by the State Department of Transportation and the Federal Aviation Administration, under direction from the USF&WS. Modification involved development of separate impoundments, construction of roads, drainage channels and nesting islets and development of a pumping system to supply water. The site became a unit of the Pearl Harbor National Wildlife Refuge in 1976.

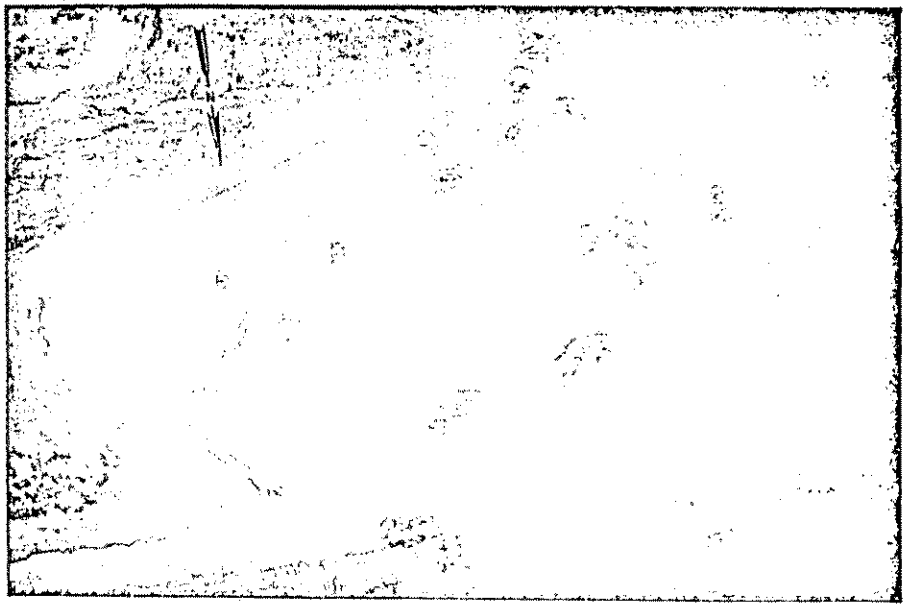
The Honouliuli branch of the Pearl Harbor NWR was not in "full" operation at the time of our survey, due to problems in maintaining an adequate supply of fresh water. Since the construction has been completed, pickleweed has encroached onto the shores of most of the nesting islands and into the drainage channels. The site is fenced except along the West Loch shore, where mangrove has taken over a large portion of the refuge shoreline. The refuge is surrounded by a narrow, but dense, kiawe forest. Most of the land west of the site is in sugar cane production.

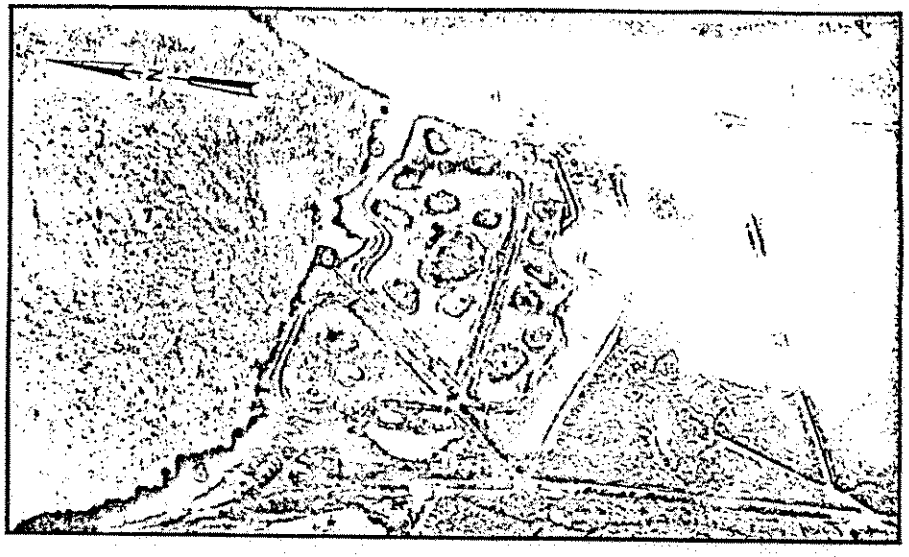


Waipio Peninsula

1. Walker's Bay
2. Pouhala wetland
3. settling basins
4. sewage oxidation ponds
5. primary stilt nesting islets, 1977 (Reference - 510)
6. Cattle Egret nesting colony
7. mangrove
8. Pearl Harbor West Loch
9. Pearl Harbor Middle Loch

Pearl Harbor NWR, Waiawa (Pearl City) Unit

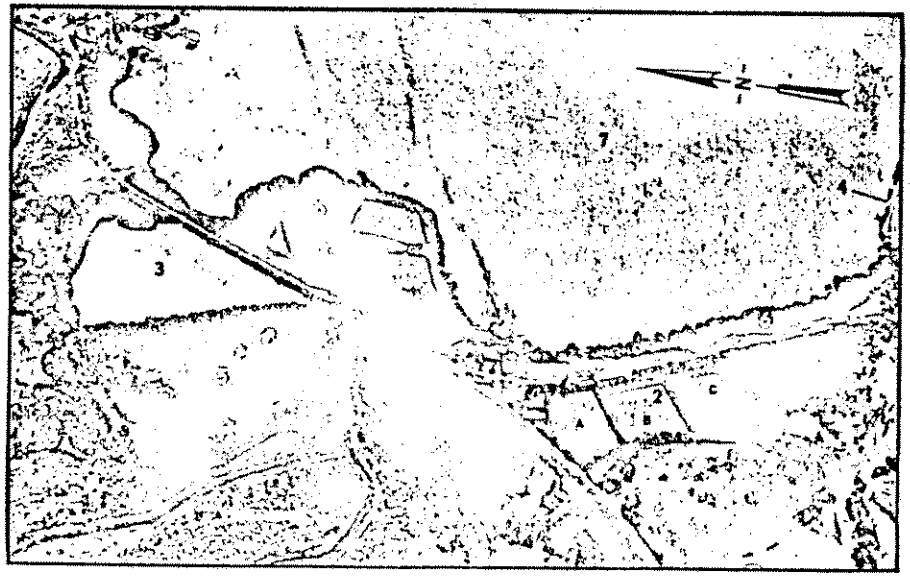




Pearl Harbor NWR, Honouliuli Unit

1. kiawe forest
2. Honouliuli prawn ponds (A,B,C,D)
3. Honouliuli fishpond
4. edge of Pearl Harbor NWR, Honouliuli Unit
5. marsh
6. mangrove
7. Pearl Harbor West Loch

Honouliuli Ponds



Immediately north of the Honouliuli refuge is a series of four 1-2 acre fishponds, now in use for production of Malaysian Prawns. This wetland was formerly a single pond, but extensive diking in recent years has allowed independent use of the four different water impoundments. The two most southern ponds (C and D on the photograph) are not presently in active use for aquaculture. As a result, cattails and pluchea have been allowed to encroach into these two impoundments. All of the ponds are between 6-36 inches in depth, with a relatively hard packed mud bottom. Water is supplied by a well and the ponds drain into West Loch.

Further north along the Honouliuli shoreline are three fishponds, the largest of which is essentially unchanged in shape from its historical configuration. This pond is now encircled with mangrove, which in turn is backed up by a small area of marshland, dominated by California grass, pickleweed, bulrush and other sedges. Water in the pond is generally very turbid. The pond is still in marginal use for aquaculture, and the surrounding lands support limited grazing of cattle.

Waipio Peninsula Sites: At the northwest corner of Waipio Peninsula, several large fishponds formerly bordered the Kapakahi Stream drainage where a very extensive mangrove swamp now exists. Inland of the mangrove swamp, between the Waipahu Dump and housing areas to the north, a remnant marsh (Pouhala) can still be found. At the suggestion of State and Federal biologists, approximately 330 acres of mangrove forest and associated shallow water and mudflats were set aside as a wildlife refuge by the U.S. Navy in 1970. Pouhala Marsh is dominated by pickleweed, with scattered patches of bulrush. This city-owned site is threatened by possible expansion of the Waipahu Dump.

Numerous other "wetlands" on Waipio Peninsula provide important waterbird habitat. Two very large fishponds (Loko Hanaloa and Loko Eo) formerly occupied most of the eastern half of the peninsula. Most of the land on the peninsula, which is leased from the U.S. Navy by Oahu Sugar Company, is now in sugar cane production. As a mechanism for removing the silt from cane irrigation and processing water, large settling basins have been constructed on the peninsula. As they fill with silt, they are dried and leveled for cane production or cleared for reuse as settling basins. In addition, large sewage oxidation ponds occupy a portion of the western half of the peninsula. Mangrove now occupies much of the Waipio Peninsula shoreline, as a result of which extensive tidal mudflats have developed in formerly open bays. Walker's Bay, along the western shore, now provides feeding habitat for some resident and migratory waterbirds.

Pearl City (Waiawa) Peninsula: This peninsula is much smaller than Waipio Peninsula. At least four fishponds formerly bordered the outlet of Waiawa Stream at the northwest edge of Pearl City Peninsula. Mangrove has now taken over the drainage and most of the western shoreline. A brackish pond and marsh north of the stream drainage provided some habitat for stilt and other birds but was threatened by expansion of a neighboring U.S. Navy landfill. In 1970, with the encouragement of the USF&WS, the U.S. Navy agreed to cooperate with the State in designation of refuge sites as mitigation habitat for the loss of stilt feeding habitat during reef runway construction. The Pearl City pond was modified by diking, nest island construction, development of a fresh water source and fencing. The 24.5 acre site became the Waiawa or Pearl City Unit of the Pearl Harbor National Wildlife Refuge in 1976. At the time of our brief survey of the refuge, USF&WS personnel were having difficulty pumping sufficient water to maintain desired levels in the pond. Pickleweed had taken over some of the nesting islets, while others are nearly free of vegetation. It is apparent that some selective vegetation control and possibly judicious planting of other marsh vegetation may be desirable in the future.

A dense growth of American mangrove has taken over most of the northeastern shoreline of Pearl City Peninsula. Although the mangrove mudflats provide only limited waterbird habitat, several watercress farms north of the mangrove fringe are visited by waterbirds on a regular basis.

NON-AVIAN WILDLIFE: The diversity of Pearl Harbor wetland areas insures availability of a wide range of invertebrate and vertebrate organisms as potential food for waterbirds. The sites vary in salinity, substrate, water depth, circulation, degree of water level fluctuation, and age. The last of these variables has particular relevance to recently constructed wetlands (refuge sites) that are likely to develop a more diverse aquatic fauna over time.

Mangrove mudflats throughout Pearl Harbor are covered and exposed with fluctuations in tides, providing ephemeral feeding habitat for waterbirds. Most fishes characteristic of estuarine waters in Hawaii are found in waters over the mangrove mudflats in Pearl Harbor. We observed mullet, milkfish, barracuda, and aholehole. Some of these fishes are particularly abundant where they were caught in shallow pools left by receding tides. Tilapia and mosquito fish were found in numerous drainage ditches, fishponds, prawn ponds, marshlands and watercress ponds in the sites we surveyed. Bullfrogs and toads were observed in the prawn ponds, stream drainages and watercress farms.

Invertebrates we observed on mangrove mudflats were those characteristic of saline impoundments (i.e. grapsid crabs, portunid crabs, snapping shrimp, mud shrimp, annelid worms, etc.). Marshlands in Honouliuli and Waipio Peninsula support a variety of aquatic insects, although there was no attempt to survey these areas thoroughly. The invertebrate fauna of cane waste water settling basins warrants intensive study because it may provide some guidelines for increasing the productivity of newly-created waterbird habitat. We found crayfish and freshwater prawns in prawn ponds, watercress farms and stream drainages.

The abundance and distribution of potential predators in the Pearl Harbor wetlands provides genuine reason for concern. Dogs (or their sign) were found in virtually all habitats, except the very soft mud within some mangrove mudflats. Several dogs have been removed from the Federal refuges by maintenance personnel. Apparently the existing fences are not adequate at the present time to prevent access. Problems with water supply have rendered the nesting islets accessible to dogs and other predators during part of this year. The proximity of some sites (i.e. Pouhala, Waiawa refuge) to operating landfills insures the presence of greater than average numbers of rats and mongoose. Feral cats are sure to be present in all areas. Unlike many other wetland areas we surveyed on Oahu and on other islands, grazing animals were not a significant problem threatening the condition of waterbird habitat in the Pearl Harbor areas.

NON-WATERBIRD AVIFAUNA: The habitat associated with wetland areas of Pearl Harbor supports an unusual variety of exotic birds, including game species, cage birds and long-established varieties that are widely distributed throughout the islands. Numerous field trip reports in recent years by Hawaii Audubon Society members, as well as HDF&G and USF&WS records provide considerable background data.

Several exotic birds were common at all sites surveyed in this study: Japanese White-eye, Barred Dove, Spotted Dove, Common Myna, Spotted Munia. In sites where kiawe or mangrove forest was found associated with the wetland, we also observed Northern Cardinal, Red-crested Cardinal and less commonly, House Finch. House Sparrows were locally abundant near landfills and in suburban areas. Two additional species we recorded, that do not appear on earlier count records, were Red-vented Bulbuls and Shama. The bulbuls were locally common in mangrove forest on Pearl City Peninsula, but were not seen at other sites. Shama were observed in mangrove forest; one on Waipio Peninsula and one on Pearl City Peninsula.

On the west side of Waipio Peninsula, we observed several large flocks of Red Munia (Strawberry Finch) and Black-headed Munia (Black-headed Mannikin). Both species were seen near the Waipahu Dump, at Walker's Bay and near the settling ponds. These species have been established on the peninsula for several years. There are at least two earlier reports of Tri-colored Mannikins on the peninsula as well, but none have been observed since 1969. Other cage birds recorded from the peninsula include Red Bishop, and Golden Bishop weavers, both seen as recently as fall, 1976.

The list of additional non-wetland birds recorded in Pearl Harbor wetland areas includes Ring-necked Pheasant, Skylark, Barn Owl and Hawaiian Owl (Pueo). Of these, pheasants are by far the most frequently observed, particularly on Waipio Peninsula. We did not record any of these species on our wetland surveys in Pearl Harbor.

WATERBIRDS OBSERVED: Historical data on waterbird abundance and distribution in the Pearl Harbor wetlands also comes from field trip reports of Audubon Society members, as well as from HDF&G and USF&WS records. Few data are available prior to 1960, but there have been more recorded field trips to these areas since 1970 than any other wetland on the island. Our survey of refuge units in Pearl Harbor was complicated by difficulty in obtaining independent access, so we rely heavily upon the historical data in evaluating the different sites. The major reason for combining several Pearl Harbor wetlands together in this discussion is the well-documented movement of birds between sites.

Hawaiian Stilt are found in Pearl Harbor wetlands in far greater numbers than all other endangered waterbirds put together. In some recent surveys, nearly half of the recorded Statewide population of this species was distributed throughout the Pearl Harbor sites. Recent construction of two new refuge units promises to increase the importance of Pearl Harbor to the survival of this species. As many as 268 stilt have been counted in the Honouliuli unit of the Pearl Harbor on counts since its construction, but there have been radical variations in population, even from day to day. Average population of several counts over the last two years has been less than 50 birds. The other Honouliuli wetlands provide very little stilt habitat, although small numbers are occasionally found in flooded pastureland or in the small marsh bordering the Honouliuli fishpond.

The Waikele-Pouhala area of West Loch supported several hundred stilt in earlier years. An earlier publication (343) indicated that 300-500 stilt were consistently found in this area. Although HDF&G/USF&WS count in 1970 ran as high as 259 stilt, on several more recent surveys less than 20% of that number have been recorded. The recent decline is not fully understood, but is probably due to a combination of factors including increasing human disturbance, encroachment of vegetation and increased stilt use of other Pearl Harbor areas. The sewage

oxidation ponds and settling basins on Waipio Peninsula areas together have run as high as 353 stilt and as low as 33. On HAS counts, as many as 500 stilt were counted on the largest sewage oxidation pond ("Big Pond") in 1976, but the average of recent counts is less than 200.

Stilt counts at the Pearl City unit of the Pearl Harbor NWR have been surprisingly large for a site so small by comparison to other wetlands. Recent counts by USF&WS biologists have ranged as high as 454 stilt, but the average of more than 75 counts over the last year is only slightly above 100. Greatest numbers are found in late summer and fall months. Several pairs of stilt have nested successfully on islets within the refuge. Improvements in water level maintenance and predator control is likely to increase production significantly. The mangrove mudflats on the east shoreline of Pearl City Peninsula provide marginal habitat for a small number of stilt when tides are appropriate. On our brief surveys of refuge units, we observed 52 stilt at the Honouliuli unit and 44 at the Pearl City unit. More than 70 stilt were counted on the settling basins and sewage oxidation ponds. Less than a dozen stilt were seen in the Pouhala Marsh area.

Coots find far less suitable habitat in the Pearl Harbor wetlands than do stilt. No more than 3 coots have been reported on individual counts at Honouliuli refuge unit. Although they do not appear on count records at the Waiawa Unit, the refuge maintenance foreman reports having observed the species at this site (510). Greatest numbers in the Pearl Harbor area have generally been found in small fish ponds in the Waikele area, although recent HDF&G/USF&WS counts for this area average less than 15 birds. The largest coot counts in the Pearl Harbor area come from the sewage oxidation ponds on Waipio Peninsula. As many as 52 birds have been counted in recent Audubon field trips (9/15/76), but the species is often absent from the site. The only documented nesting of this species in recent years that we are aware of has been within the Honouliuli prawn ponds. The Principal Investigator has observed at least three pairs nesting simultaneously in the least developed ponds (c & d). In these ponds, we witnessed successful rearing of young by a pair consisting of a red-shielded adult bird and a bird with the typical white shield in 1973. This phenomenon has since been observed at several other locations in the islands. Althoughwe have counted as many as 13 coots on the Honouliuli fishpond north of the prawn ponds, nesting has not been documented. On this survey, we observed coots at the prawn ponds (n=6) and in a large sewage oxidation pond on Waipio Peninsula (n=20).

Hawaiian Gallinule are even less common in Pearl Harbor areas than are coots. No more than two birds have been reported at the Honouliuli refuge unit in recent years. We recorded one gallinule in the algae-infested impoundment during our survey of this site. The prawn farm at Honouliuli is tne only Pearl Harbor location where nesting by gallinule has been confirmed, at least in recent years. At this site, the Principal Investigator has recorded as many as 7 birds, and at least one nesting pair, each year since 1972. The fishpond north of the prawn farm also supports between 2-6 gallinule, and it is likely that nesting occurs undetected in the dense shoreline vegetation. We could find no records of gallinule on Waipio Peninsula, but it is likely that small numbers occasionally visit freshwater stream drainages or irrigation ditches. Gordon Black (510) indicated to us that he has seen gallinule at the Waiawa refuge unit, but they do not appear on count records.

Hawaiian Ducks (Koloa) appear only recently on count records in the Pearl Harbor wetlands. Although releases of cage-reared Koloa began on the windward side of Oahu in 1969, we can find no reports of the species in the Pearl Harbor area until 7/18/76, when two birds were counted on ponds on Waipio Peninsula. Since that time, they have also been observed at the Honouliuli refuge unit. Because of the distance involved, it is questionable whether or not birds from the windward side will successfully disperse in greater numbers to this area. Some consideration should be given to a future release of Koloa at Pearl Harbor wetlands, particularly after water levels are stabilized within the refuge units.

Black-crowned Night Herons ('Auku'u) have been recorded at all Pearl Harbor wetlands that have been visited in past years. The greatest numbers are found on Waipio Peninsula sites, particularly within sewage oxidation ponds and Walker's Bay area. Yet even in all these sites together, rarely are more than 20-30 birds counted. The heron population that frequents the shallow fish ponds and marsh areas near Waikele is generally larger than in any other single Pearl Harbor wetland, but even here the average number counted in recent years is less than 20. Small numbers of herons are nearly always present in the Honouliuli prawn ponds and refuge unit, but they are seen far less often in the Waiawa refuge unit. Extensive mangrove and kiawe forest on the shores of all Pearl Harbor lochs provide unlimited potential nesting habitat for herons. In view of the diversity and abundance of suitable feeding habitat in the Pearl Harbor area, it is surprising that the resident heron population is not larger. We observed herons on our survey at the Honouliuli refuge unit (n=4), at the prawn ponds (n=1), at the Honouliuli Fishpond (n=2), in the egret nesting colony area at the Kapakahi Stream drainage (n=4), and elsewhere on Waipio Peninsula (n=14).

Cattle Egrets were first found nesting in the Pearl Harbor area (West Loch) in January, 1963, four years after their introduction to the island. By April, 1963, the rookery was estimated to include a minimum of 100 active nests (351). Since that time, egrets have been observed at all Pearl Harbor wetlands. Counts as high as 500 birds have been made on Waipio Peninsula, although the observed population is generally much lower. Settling basins provide a particularly abundant source of insect food. The egrets are regularly found in the landfill area around the Pearl City refuge unit and within the Waipahu Dump. Watercress farms northeast of Pearl City Peninsula are also an important feeding site for egrets, where they consume large numbers of crayfish. The prawn ponds and fishpond at Honouliuli do not attract many egrets, but some birds are generally found with grazing animals nearby. On our survey, we observed egrets at all wetland sites surveyed, but greatest numbers were found near Pouhala Marsh, the Waipahu Dump, and the nesting colony in nearby mangrove forest.

The large numbers and variety of migratory waterfowl recorded in Pearl Harbor wetlands reflects the diversity of habitat available. Numbers vary, often daily, at different areas as large groups of ducks move from site to site. Pintail counts on the settling basins and sewage oxidation ponds of Waipio Peninsula have run as high as 250 birds. Shoveler counts are generally lower, but one count of 400 birds was recorded at the "Big Pond" in January, 1977. On the average, the Pearl Harbor population of wintering Pintails and Shovelers together runs between 100-200 birds. Both species are seen irregularly at the two refuge units, but it is expected that numbers will increase when water levels are stabilized and a more diverse and abundant source of aquatic food is avilable. The list of less common

The Honouliuli prawn ponds provide very limited space for waterbirds, but have proven to be surprisingly productive for coot and gallinule in recent years. The two ponds that are not in current use for prawn farming could support even greater numbers of these birds if encroaching cattails were judiciously controlled. Hopefully, the current lessee will not find it necessary to put these two ponds back into aquaculture production. It is our understanding that the present farming operation is marginal economically and the possibility that the entire site could be converted to protected waterbird habitat under State or Federal jurisdiction should be investigated. The fishpond north of the prawn farm could be improved as waterbird habitat by restriction of human disturbance and by restoration of suitable wetland within the adjacent marsh. Together with the prawn farm, these sites probably account for most of the limited production of gallinule in the Pearl Harbor area. For this reason alone, the possiblity of refuge status or cooperative habitat improvement programs should be investigated.

The best waterbird habitat at the north end of West Loch appears to have lost much of its suitability for stilt and other waterbirds. Although 330 acres of shallow water and tidal mudflats have been designated as a U.S. Navy refuge, there has been no management of the area to increase waterbird productivity. Encroaching vegetation and the increasing levels of human disturbance on neighboring lands has lowered the value of these areas over time, but there is considerable room for improvement under proper management. The draft HWRP (346) recommends preservation of the Pouhala Marsh as a wildlife sanctuary by the City and County.

By far the best habitat on Waipio Peninsula is now provided by "artificial" wetlands created by the activities of the Oahu Sugar Company. As long as direct flow of irrigation waters into Pearl Harbor is prohibited, it is likely that some habitat will be available year around. However, radical fluctuations in past counts reflect the extreme variability in wetland habitat conditions on these lands. There are few areas within any of the Waipio wetlands that are not accessible to predators. Also, the schedules of flooding and drying of settling basins or oxidation ponds are determined without reference to varying needs of waterbirds. For these two reasons alone, it is doubtful that breeding productivity of these ephemeral sites will ever approach maximum potential. In view of the comparatively large population of stilt, coots and migratory waterbirds that inhabit these wetlands, it would be advisable for HDF&G and USF&WS biologists to work more closely with Oahu Sugar Company personnel to insure effective management of the habitat. Under cooperative agreement with the lessee (Oahu Sugar) and landowner (U.S. Navy), it may be possible to develop and maintain settling basins or more permanent impoundments that could be managed exclusively for waterbirds. If these areas were assured permanent water supply and predator protection, then together with more extensive ephemeral habitat, they would insure that all the needs of these birds were met.

The Pearl City unit of the Pearl Harbor NWR has been successful in attracting relatively large numbers of nesting and feeding stilt. Prior to construction of the refuge, the condition of the wetlands on the peninsula varied considerably over the year. Much of the habitat dried in summer months. Provision of permanent water and protection from predators will encourage continued use of the site by stilt. This site may have drawn some birds away from the deteriorating habitat at the north end of West Loch. There is considerable room for further development of wetland habitat on the peninsula on lands that have accomodated landfill and along the Waiawa Stream drainage.

Waterbird habitat within the mangrove-infested shoreline along the east shoreline of Pearl City peninsula is typical of that found throughout much of Pearl Harbor. Encroaching mangrove accelerates siltation in its roots and provides limited feeding habitat that is characterized by temporary availability of food, relative lack of submergent vegetation and exposure to wave action and wind. Of the waterbirds in the Pearl Harbor area, only herons and egrets nest within the mangrove swamps of Pearl Harbor. This vegetation has already become a problem within the newly constructed refuge units, and will require constant attention to prevent deterioration of this habitat.

POTENTIAL IMPACT OF DREDGE/FILL ACTIVITIES: An examination of earlier topographic maps for the Pearl Harbor area makes it very clear how deposition of fill and encroachment of mangrove over the last 40 years have eliminated several hundred acres of former wetlands and fishponds. Yet, much of this loss has been compensated by the development of water impoundments to remove silt from irrigation waters and to permit sewage oxidation. Maintenance of these areas requires movement of accumulated silt and the construction of dikes and diversion channels. The same methods can be used to create and maintain more secure waterbird habitat. The long-term productivity of recently constructed refuge sites is uncertain, but it is already evident that waterbirds are adaptable to this "artificial" habitat.

Dredging and filling can also be used as a tool to improve the suitability of other wetland sites for waterbirds. Encroaching vegetation in the Honouliuli prawn ponds and within the marsh adjacent to the Honouliuli fishpond can be controlled through careful dredging. On the other hand, the existing value of these sites would be lost if they were totally cleared for other use. Construction of water impoundments in the Pouhala marsh area may prove necessary to insure more permanent water supply to this small wetland. It is anticipated that expansion of the Waipahu Dump may threaten the condition of neighboring wetland, either through elimination of habitat, or more subtly, through the leaching of waste chemicals and gasses.

The established movement of waterbirds between the various Pearl Harbor wetlands increases the opportunity for maintaining overall habitat availability as current sites are altered. Although the 61 acres of Pearl Harbor NWR units do not nearly equal in size the habitat lost in Keehi Lagoon, the long-term potential of the new areas as both feeding and nesting habitat for stilt make the adjustment a good tradeoff in the end. However, since passage of the Endangered Species Act of 1973, mitigation of adverse impact on endangered waterbird habitat by creation or improvement of habitat elsewhere is no longer in compliance with Federal law. The long-term effects of habitat alteration in individual Pearl Harbor wetlands will not be totally clear until more prolonged studies of habitat use and bird movement between sites has been completed. Hopefully, the new refuge units will compensate, at least in part, for further alteration of wetlands in the Pearl Harbor area.

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

August 7, 1980

Mr. B. R. Schlapak, Colonel
Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Fort Shafter, Hawaii 96858

Dear Mr. Schlapak:

Subject: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

Thank you for your comments of April 21, 1980. We have reviewed your comments and, in response to your concerns provide the following dispositions:

1. The rezoning process is expected to be completed in August, 1980 from AG-1 and R-6 to A-2. The EIS will discuss the pros and cons of leaving the land in AG-1 and R-6 versus A-2.

2. The matter of potable water has been partially resolved. The developer plans to construct an irrigation system for the Ted Makalena Golf Course. The golf course is presently using potable water (250,000 gpd) for irrigation. The new source of irrigation water will be from a surface ditch (draining fresh spring water into Pearl Harbor). Additionally, the developer proposes to seal off the well on the Waterfront Manor site, thus, another 700,000 gpd of water (fresh spring water) will be retained within the Pearl Harbor Basin. Subsequently, the developer will request from the Board of Water Supply, a sufficient amount of potable water (796 units x 300 gpd/unit = 238,800 gpd) for the proposed project. In total, there will be a surplus of water (spring and potable) of over 710,000 gpd. The issue which needs to be resolved is whether the Board of Water will approve the 238,800 gpd of potable water for the project. Earlier project plans called for 520 units; at that unit count, the Board of Water Supply approved the proposal. With an increase unit count, new information must be given to the Board of Water Supply for their review and approval. The Department of Land and Natural Resources have indicated their approval of this water exchange concept.

3. Concerns such as traffic, utilities, sewerage, water quality, and historical sites are addressed in the EIS.

4. There is a possibility that the project site lies within an area identified as a wetland.

5. The project site was formerly used for watercress and ung-choi growing. No open, shallow water was available within the site for waterbirds.

1132 BISHOP BUILDING SUITE 508 • P O BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521 8391

Presently, most of the site consists of a dry open space area. The exception is a .5-acre (approximately) area of an abandoned ung-choi patch in which spring water is found. The site does not have a suitable environment for waterbirds and the development of the proposed project will probably not affect the other surrounding wetlands supporting waterbirds. A second area of concern is a ponding area that is below Waipahu High School. The runoff that collects there has created a favorable environment for wetland vegetation. It is the intent of the developer, during the off-site improvement phase to correct this drainage problem. Since the construction of the Waipahu High School Athletic Facilities on the adjacent mauka property, the project site has been receiving storm waters through a 36" reinforced concrete drain line installed by Waipahu High School. During heavy rainfall, water ponds on the lowlands of the project site and would normally take two or three months before the area can be dried. The project has two (2) 18" Reinforced Concrete Pipe outlets that discharges into West Loch. One outlet has been covered and presently there is only one 18" RCP outlet that is functioning properly. However, the outlet is at approximately elevation 1.0 feet and although it helps to keep the project site properly drained, because of tide water from West Loch, the drainage ditches and a small portion of the project lowland is always wet.

We will remain in contact with your permit branch staff for the final determination of the wetland designation. We appreciate your concerns in these matters. A copy of the EIS will be sent to your office for review and comments.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission

bcc: Karen Horita
Park Engineering, Inc.
Anbe, Aruga & Ishizu, Architects, Inc.

14. REPRODUCTION OF COMMENTS AND RESPONSES MADE DURING THE DRAFT ENVIRONMENTAL IMPACT STATEMENT REVIEW PERIOD

The Draft EIS was filed with the Environmental Quality Commission and the Department of Land Utilization, City and County of Honolulu on November 5, 1980; the Draft EIS review period officially began on November 8, 1980. The deadline date for responses was December 8, 1980.

A total of fifty one (51) governmental agencies, libraries, and private organizations received a copy or copies of the Draft EIS. Of these 51 agencies, 23 provided a written response.

Table 3, identifies the agencies receiving a copy or copies of the Draft EIS, the date of the comments, and the beginning page on which that comment is reproduced. Where response to the comment was made, the response immediately follows the reproduced comments. The enclosure(s) to the various responses are reproduced in this Final EIS principally in the Appendices.

TABLE 3

AGENCIES INVOLVED IN THE DRAFT EIS REVIEW

AGENCIES	DATE OF RESPONSE	PAGE
STATE:		
Office of Environmental Quality Control	12/8/80	14-3
Department of Agriculture	12/10/80	14-7
Department of Land & Natural Resources	12/15/80	14-8
Department of Health	11/25/80	14-9
Department of Planning & Economic Development	12/4/80	14-10
Department of Defense	11/20/80	14-12
Department of Accounting & General Services	12/2/80	14-12
Department of Social Services & Housing	11/20/80	14-13
Department of Transportation	11/28/80	14-14
Department of Education	11/19/80	14-15
State Historic Preservation Officer	No response	
State Energy Office	No response	
UNIVERSITY OF HAWAII:		
Environmental Center	12/8/80	14-17
Water Resources Researh Center	12/3/80	14-19
Chancellor for Community College	12/8/80	14-21
NEWS MEDIA:		
Honolulu Star-Bulletin	No response	
Honolulu Advertiser	No response	

TABLE 3 CONTINUES ON THE NEXT PAGE

TABLE 3, AGENCIES INVOLVED IN THE DRAFT EIS REVIEW, CONTINUED....

AGENCIES	DATE OF RESPONSE	PAGE
FEDERAL:		
U.S. Army Corps of Engineers	11/26/80	14-23
U.S. Fish & Wildlife Service	12/5/80	14-24
Soil Conservation Service	12/5/80	14-25
15th ABW/DEE	No response	
U.S. Department of the Navy	No response	
Army-DAFE	No response	
U.S. Coast Guard	11/24/80	14-27
Headquarters, Naval Base Pearl Harbor	11/28/80	14-28
CITY & COUNTY OF HONOLULU:		
Department of General Planning	12/5/80	14-29
Department of Transportation Services	12/9/80	14-31
Department of Parks & Recreation	11/28/80	14-33
Department of Public Works	11/18/80	14-33
Board of Water Supply	11/25/80	14-34
Department of Housing & Community Development	11/19/80	14-36
Building Department	No response	
Department of Land Utilization	12/10/80	14-37
Police Department	12/8/80	14-39
LIBRARIES: (FILED FOR PUBLIC TO REVIEW - NO RESPONSES RECEIVED)		
State Main Branch		
Kaimuki Regional Library		
Kaneohe Regional Library		
Pearl City Regional Library		
Hilo Regional Library		
Wailuku Regional Library		
Lihue Regional Library		
Ewa Beach Community-School Library		
Wahiawa Library		
Waialua Library		
Waipahu Library		
Hamilton Library, Hawaiian Collection		
State Archives		
LRB Library		
Municipal Reference Center (Oahu)		
PRIVATE ORGANIZATIONS:		
American Lung Association of Hawaii	12/8/80	14-40
Life of the Land	12/8/80	14-42
Pearl City Neighborhood Board #21	No response	
Outdoor Circle	No response	
Waipahu Community Association	11/14/80	14-44

GEORGE R. ARIYOSHI
GOVERNOR

HARRY Y. AKAGI
Acting Director
TELEPHONE NO.
548-6915

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
DEPARTMENT OF HEALTH
550 HALEKAUWILA ST
ROOM 301
HONOLULU, HAWAII 96813

December 8, 1980

Mr. Tyrone T. Kusao, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Kusao:

Subject: Environmental Impact Statement for the Proposed Waterfront Manor Condominium Project

We have reviewed the subject environmental impact statement. It is our understanding that the EIS was filed pursuant to Ordinance #4529. We offer the following comments for your consideration:

Page 1

The three Hawaiian waterbirds are already on the existing federal and state endangered species lists.

Page 2

The last sentence under the air quality section does not make sense.

Page 4

a) A tax map should be reproduced in the EIS to show who the surrounding affected landowners are. It appears that the proposed 56-foot wide access road would require the use of Waipahu High School lands. Any restrictions on the use of this school land for different purposes should

14-3

DEC 9 1980

be discussed, as is pointed out in the consultation comment made by the Department of Education.

b) Since the school property is owned by either the state or city and county, then the requirements of Chapter 343, H.R.S. will apply when the purchase or use of that land is requested. The same holds true if any use of the state energy corridor is requested.

c) We note that the proposed access road is a portion of the previously proposed "Second Entrance to Leeward Community College," for which an EIS was prepared but not accepted.

Page 8

The EIS does not document the critical need for housing in this area. It is our understanding that the DLUM was changed in 1971 in order to provide for increased rental units in this area. We note the present proposal is for selling condominiums with arrangements to be made with the city for moderate income housing units.

The land was owned by the developer prior to 1977, perhaps the statement should read 1971.

Page 9

The EIS only mentions a portion of the soils characteristics of the site. The EIS should also state that the Soil Conservation Service interprets the Pearl Harbor series (Ph) to have: high shrink swell potential, low bearing capacity and high water table.

Page 12

a) The Pueo is included on the state's endangered species list for Oahu.

b) Cane haul trucks have been known to generate noise complaints in the past. Since a cane haul road traverses the property, noise measurements from this source should be taken and discussed in the EIS.

Page 14

How much of the subject site is in a flood zone? No detailed topographic map is provided in the EIS which would allow for evaluation of drainage patterns and flood zones.

Page 18

How does the project relate to the County General Plan and the upcoming development plan? The EIS should discuss why this project is proposing ten story buildings in A-2 zoning. It is our understanding that the intent of A-2 zoning is to protect view planes by allowing for medium density and forty foot height limits.

Page 19

Is the project site included on the state's map of Prime and Unique agricultural lands?

14-4

Page 20

a) The statements that flooding occurs on the property and that there are no geological hazards on the site are inconsistent. Isn't a flood zone a geological hazard?

b) The orientation and size of the proposed buildings may change the wind induced mixing characteristics of nearby Middle Loch waters. There is little discussion on the quality of these receiving waters, their fauna or the project's potential impact on this water body.

Page 21

Please note that the Environmental Protection Agency is in the process of reducing the Carbon Monoxide (CO) maximum one hour average from 40 to 25 micrograms per cubic meter. Some of the estimated CO readings for this project approach the reduced figure.

Page 22

If piles need to be driven it should be so stated. Pile driving for the second increment would affect the first, and

so on until project completion. Increased traffic using the proposed access road and Waipio Point Access Road will create additional noise impact on Waipahu High School and Waipahu Health Clinic. This impact should be discussed in the Statement.

Page 23

Photographs or other visual aids showing the existing views should be included in the EIS along with drawings showing the proposed buildings as seen from the view points mentioned on this page. Since the elevation of the property is not mentioned in the EIS, the maximum allowable height of the buildings cannot be determined by reading the statement.

Page 26

There is little discussion about the State's Energy Corridor which borders the property. Does the location of the energy corridor provide hazards to the subject property or vice versa?

Page 28

Is the Waipahu Fire Station equipped to fight fires in a ten-story building?

Page 73

We could not find any detailed discussion on the provision of access to the subject property. What is the status of the proposed use of Waipahu High School lands for the access road? Is this an unresolved issue? Are state or county approvals necessary?

We also found no discussion on the existing mosquito problem of the area. Also, will there be mitigation measures for the intersection of the access road and the cane haul road? Will parking along the cane haul road become a problem?

Thank you for allowing us to review this statement.

Sincerely,

Harry Y. Akagi
Acting Director

cc: Environmental Communications, Inc.

ENVIRONMENTAL
COMMUNICATIONS
INC.

C. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. Harry Y. Akagi, Acting Director
Office of Environmental Quality Control
Department of Health
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Mr. Akagi:

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT

We have received and reviewed your letter of December 8, 1980, commenting on the abovementioned Draft EIS. Below, responses to your comments are provided.

14-5

1. Endangered Hawaiian Waterbirds. The word "proposed" will be replaced by "existing."

2. Page 2, relating to Air Quality. This sentence will be corrected.

3. a) Tax Map (page 4). Maps showing the adjacent landowners are provided on page 77 and 78 of the Draft EIS.

   The restriction on school property as provided by the federal government will be included.

   b) The road alignment was set in 1971 by the City's Detailed Land Use Map (DLUM) for the area, Ordinance 3842. Portions of the road are owned by the Waipahu High School and Park Engineering, Inc., the engineering consultant, has received preliminary conceptual approval for the use of the land for the 56-foot wide access road (see attached correspondence). Also, the engineering consultant has indicated that the energy corridor will be affected by the access road. Because of the proposed access road, pipelines within the corridor may be raised or lowered as appropriate. The Harbors Division will be contacted in order to obtain approval for work on the energy corridor. The requirements for a State EIS under Chapter 343 for use of State land or monies will be considered by the appropriate State agencies from whom such approvals will be requested.

   c) The EIS for the Second Entrance to Leeward Community College was prepared and a Draft document was circulated. The State decided to discontinue processing of the EIS because of funding concerns. Therefore, the EIS was not accepted because it was not continued. Your letter implies that the EIS was found to be unacceptable, which is incorrect. The procedure aborted further processing.

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4. Page 8, Need for Housing in the Area and Year of Ownership. The need for housing is documented in the General Plan, City and County of Honolulu, and the State Functional Plan for Housing.

   The property was purchased by the developer in 1966. This information will be corrected in the Final EIS.

5. Page 9, Soil Characteristics. As indicated on footnote 2, bottom of page 9, the soil description provided in subsection 3.2.2 was general and not a site specific analysis. The soil engineering consultant firm, Geolabs, has prepared a more specific discussion on the site's soils based on field inspection and a previous soil boring study (1971). Geolabs description of the soils on the site is enclosed for your information. This additional discussion will be included in the Final EIS. Additionally, it should be noted that the Pearl Harbor soil series is located in a small portion (less than two acres) of the project site. Possible remedial measures to stabilize this soil for buildings include the use of crushed rock for filling this area and the use of piles to form a foundation for the proposed buildings. More specific measures will be included after a detailed soil study (with soil borings) is completed and recommendations from the soil engineering firm are provided.

6. a) Page 12, Pueo. This information will be included in the Final EIS.

   b) Page 12, Cane haul truck noise. We concur that noise from cane haul trucks will be a nuisance. A partial mitigation measure will include landscaping along the road and giving the right-of-way to the trucks. The latter measure will allow the trucks to continue moving along the road without stopping. Stopping or braking and re-starting would result in a noisier situation. Additionally, the developer will inform the potential buyers of the existing noise created by the cane haul trucks (during harvesting) and crowd noise from periodic athletic events at Waipahu High School's athletic field. Full disclosure at the time of purchase will be made so as to present any misunderstanding on the part of the purchaser regarding Noise and its impacts.

7. Page 14, Flood Hazard. The site is not within a known or defined flooding zone. Water on the site occurs due to surface runoff ponding in low-lying areas and because of possible leakage from temporarily capped wells on the site. The Final EIS will contain a narrative describing the existing drainage patterns.

8. Page 18, Relationship of the Project to the County's General Plan and the Development Plan, A-2 Zoning - Height Requirements. Both the General Plan and the proposed Ewa Development Plan were reviewed. There is no specific mention of this project in either documents. Both documents indicate Ewa is designated as the secondary urban center.

   The A-2 zoning allows medium density apartments with a maximum height of 40 feet from the highest elevation of the project site. In this case, the highest elevation has been found to be 58 feet above mean sea level. Subsequently, a proposed building can be built at 0 elevation and can achieve a total height of 98 feet.

9. Page 19, Agricultural Land. A check with the State Department of Agriculture indicates that the project site is identified as Unique agricultural land. This information will be included in the Final EIS.

10. a) Page 20, Flooding. The site is not located in a flood hazard zone. Ponding of surface water does occur on the low-lying portions of the site.

    b) Wind Changes due to the Buildings. The modification to wind direction is anticipated to be slight and will effect the mixing characteristics of Middle Loch's nearshore water. The anchoring of dry docks has a greater impact on mixing than this proposed project. The project will result in additional surface runoff being generated. The amount of additional runoff and its impact on water quality will be included in the Final EIS.

11. Page 21, Carbon Monoxide. EPA is considering lowering the Federal 1-hour AQS for carbon monoxide from 35 to 25 ppm (parts per million), not "25 micrograms per cubic meter (mg/m^3)." Micrograms is incorrect since the correct unit of measure is milligram. Microgram measurement is 10^{-6} or the six zeros are to the left; Milligram Measurement is 10^{-3} or 3 zeros to the left of the decimal point. In any case, the amounts on levels being measured are minute. The new standard, if adopted, would thus be about 29 milligrams per cubic meter and values estimated in this study are well below that level.

12. Page 22, Noise. Piles for the foundation of the proposed buildings will be necessary. Noise from pile driving will create a nuisance to surrounding activities. It is likely that the pile driving will be completed during the site preparation stage rather than phased. The contractor must conform to the noise regulations and it is likely that a permit for pile driving will be obtained from the State Department of Health.

Noise from traffic along the access road and Waipio Point Access Road will be created; this information is included in subsection 5.2.2 (b).

13. Page 23, Visual Detailed Aids. Detailed discussion of the views that will be affected is provided on pages 23 and 25 (Figure 3) of the Draft EIS. A visual aid to show impact on existing view planes is expensive and provides bias or distortion. Although we feel that a visual aid is not the best method to evaluate impact, we are including for the benefit of the layman reviewer photographs of the model of the project.

14. Page 26, Energy Corridor. See response to item 3 b) above. Also, no hazards to the project from the energy corridor and vice versa is foreseen.

15. Page 28, Fire Equipment for 10-Story Building. The Waipahu Fire Station does not have the capability to fight fires on the upper floors of a 10-story building. Like other projects, the Fire Codes must be met. This includes provisions for a water sprinkling system and the appropriate placement of fire hydrants and alarms.

16. Page 73, Access to the Property and Mosquito Problem. The 56-foot wide access road will follow the alignment set by the DLUM. Preliminary coordination with the appropriate State agencies owning the property or having disposition over the property have been made. Correspondence with these agencies are enclosed. Information of the 56-foot wide roadway will be included in the Final EIS.

    No mosquito problems were encountered during several site visits. Perhaps the problem occurs periodically. The proposed development will alleviate ponding at the low-lying portion of the site, eliminating the standing water in which mosquitos breed.

Thank your for your comments.

Very truly yours,

F. J. Rodriguez

cc: DLU, EQC, Horita Realty, Park Engineering, Inc.

Enclosures: Correspondence on 56-foot wide access road
Geolabs Soil Discussion
Preliminary Drainage Study

GEORGE R. ARIYOSHI
GOVERNOR

JOHN FARIAS, JR.
CHAIRMAN, BOARD OF AGRICULTURE

YUKIO KITAGAWA
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
1428 SOUTH KING STREET
HONOLULU, HAWAII 96814

December 10, 1980

MEMORANDUM

To: Mr. Tyrone T. Kusao, Director
Land Utilization, C&C of Honolulu

Subject: Shoreline Management Permit
Herbert K. Horita Realty, Inc.
TMK: 9-4-08:23

The Department of Agriculture has reviewed the subject Environmental Impact Statement and has one comment to offer. We believe that the impact of the proposed development on the agricultural activities on the adjacent Bishop Estate wetlands should have been addressed. According to our records, the tax map key of this area is 9-6-03:25-40 inclusive.

Thank you for the opportunity to comment.

JOHN FARIAS, JR.
Chairman, Board of Agriculture

✓ cc: Herbert K. Horita Realty, Inc.

14-7

DEC 12 1980

F. J. RODRIGUEZ
PRESIDENT

ENVIRONMENTAL
COMMUNICATIONS
INC.

December 22, 1980

Mr. John Farias, Jr., Chairman
Board of Agriculture
Department of Agriculture
1428 South King Street
Honolulu, Hawaii 96814

Dear Mr. Farias:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of December 10, 1980, commenting on the abovementioned Draft EIS. Your letter requested that the project's impact on the adjacent agricultural activities on the Bishop Estate wetlands be addressed. Field visits indicate that the agricultural activities are located several hundred feet east of the project site. It is not anticipated that the proposed development will effect these activities; additionally, these lands are zoned for agricultural uses.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Environmental Quality Commission
Department of Land Utilization
Herbert K. Horita Realty, Inc.

1152 BISHOP BUILDING, SUITE 508 • P. O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8391

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

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

SUSUMU ONO, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

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

DEC 15 1980

REF. NO.: APO-2408

Department of Land Utilization
c/c of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Gentlemen:

We have reviewed the EIS for the proposed Waterfront Manor condominium.

Because the project site has been used for sugar cane cultivation, cattle grazing, pig farming, and watercress cultivation, and it is known that several old single family residences existed in the area, it is highly probable that important historic archaeological site exist in the area, especially trash dumps from the Territorial Period. In the event that buried archaeological deposits are encountered during construction, it would be commendable to make some provisions for the emergency recovery of information.

Our historic sites office would like to be notified (Ph. 548-6408) when ground-disturbing activities are being conducted in the early stages of the project and to be allowed to make a field inspection of the project at that time.

Very truly yours,

SUSUMU ONO, Chairman
Board of Land and Natural Resources

cc: Herbert K. Horita Realty

14-8

DEC 17 1980

F. J. RODRIGUEZ
PRESIDENT

ENVIRONMENTAL
COMMUNICATIONS
INC.

December 22, 1980

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

Dear Mr. Ono,

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT

We have received and reviewed your letter of December 15, 1980 commenting on the abovementioned document. Your letter was received nine (9) days after the deadline date, and although we have the alternative to not respond to your letter (because of the tight schedule in which we must prepare the Final EIS), we find that your concerns on historic sites should be addressed.

The developer has reviewed your letter and will contact your office when as to the approximate date of ground-disturbing activities.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty

1152 BISHOP BUILDING, SUITE 508 • P.O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8391

GEORGE N. ARIYOSHI
GOVERNOR OF HAWAII

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

GEORGE A. L. YUEN
DIRECTOR OF HEALTH

JOHN F. CHALMERS, M.D.
DEPUTY DIRECTOR OF HEALTH

HENRY H. THOMPSON, M.A.
DEPUTY DIRECTOR OF HEALTH

MELVIN K. KOIZUMI
DEPUTY DIRECTOR OF HEALTH

ABELINA MADRID SHAW, M.A., J.D.
DEPUTY DIRECTOR OF HEALTH

November 25, 1980

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

MEMORANDUM

To: Mr. Tyrone T. Kusao, Director
Department of Land Utilization, City & County of Honolulu

From: Deputy Director for Environmental Health

Subject: Environmental Impact Statement (EIS) for Proposed Waterfront Manor Condominium Project

Thank you for allowing us to review and comment on the subject EIS.

We submit the following comments for your consideration:

Drinking Water

We have reviewed the drinking water related aspects of the project and find that our concerns have been addressed.

It is our understanding that in order to make available the required supply of potable water, the developer intends to replace 223,000 gpd of potable water now being used to irrigate the Ted Makalena Golf Course with that amount of irrigation water by providing the facilities necessary to supply the golf course's irrigation system with water from springs presently discharging into Pearl Harbor. In addition, the developer proposes to seal an artesian well which exists on the site of the proposed Waterfront Manor Project.

We are pleased by the developer's apparent recognition of the water supply conditions in the Pearl Harbor Basin and the constructive and innovative proposals for making potable water available to the project.

Noise

We have strong reservations in regard to the proposed project for the following reasons:

1. Residents of the proposed project may be adversely affected by noise impacts from cane haul trucks operating along the cane haul road at the mauka/ewa end of the property. During the harvesting season these trucks may operate 24 hours a day and are capable of generating high noise levels.

14-9

NOV 28 1980

2. Residents of the proposed project may be adversely affected by noise generated by events at Waipahu High School and the school's athletic field. The close proximity of the school and its field to the project will subject the residents to direct noise impacts. In addition, given the nature of concrete high-rise structures, significant amounts of noise may be reflected back of the buildings towards the Waipahu Community during athletic and school assembly events.

3. Residents of the proposed project may be adversely affected by noise from vehicular traffic along Farrington Highway. The heavy present and future traffic flow may create unwanted noise impacts particularly on the upper floors of the proposed buildings.

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.

for MELVIN K. KOIZUMI

cc: OEQC
F. J. Rodriguez

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

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

Dear Mr. Koizumi:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter dated November 25, 1980, commenting on the abovementioned Draft EIS. Your comments on the drinking water requires no response; however your comments on the potential noise impacts have particular merit and we have provided additional information on this concern in the text of the Final EIS.

Noise from the cane haul trucks will be a periodic nuisance (during harvesting) for approximately 25 percent of the condominium units. The noise can be partially mitigated by landscaping along the road and by allowing cane haul trucks to have the right-of-way across the 56-feet wide access road. This would allow the trucks to have the right-of-way through the road without stopping, thus, noise from braking and acceleration will be prevented. However, potential buyers will be forewarned about this noise problem.

Noise from the athletic field will be periodic and will affect future residents. Because this noise cannot be practically mitigated at the source, the developer will advise the buyer of this noise. Because sporting events occur only periodically and during the weekend or evening hours for a few hours, it is felt that the residents will not be unduly subjected to this noise.

Farrington Highway is located several hundred feet from Farrington Highway. Because the proposed buildings will be slightly lower than the highway, the noise from the highway is not expected to be significant or adverse.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.

1152 BISHOP BUILDING SUITE 508 • P.O. BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8381

14-10

GEORGE R. ARIYOSHI
Governor

HIDETO KONO
Director

FRANK SKRIVANEK
Deputy Director

DEPARTMENT OF PLANNING
AND ECONOMIC DEVELOPMENT

Kamamalu Building 250 South King St. Honolulu, Hawaii • Mailing Address P.O. Box 2359 Honolulu, Hawaii 96804

December 4, 1980

COPY

Ref. No. 2449

Mr. Tyrone Kusao
Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Kusao:

SUBJECT: Draft Environmental Impact Statement for the Proposed Waterfront Manor Condominium Project at Waipio, Oahu

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

1. In our EIS Preparation Notice comments on this project (refer to page 3c of the draft EIS) we recommended that the applicant "directly address within the EIS all pertinent Hawaii Coastal Zone Management (HCZM) objectives and policies of Chapter 205A, Hawaii Revised Statutes." While this recommendation was originally made relative to the review of the Shoreline Management Area (SMA) permit, we note that a U.S. Army Corps of Engineers (COA) permit has now been added to the list of necessary government approvals due to the proposed modification of a designated wetland area.

   In regard to this recommendation, we believe that the draft EIS does not contain sufficient information, nor analysis, which identifies whether the proposed project is consistent with the Hawaii CZM Program. As an example, we highlighted the fourth policy under the Scenic and Open Space resource category which encourages "Those developments which are not coastal dependent to locate in inland areas" (Sec. 205A A-2(3) (d), HRS). It is our belief that Waterfront Manor, and its access road, should be considered as a development which is proposed adjacent to a delineated shoreline. Due to the nature of the proposed project, we believe the applicant should more closely address those CZM objectives and policies pertaining to recreation, valued scenic resources and coastal ecosystems.

DEC 9 1980

2. The draft EIS states, on page 15, that "the site is not subject to tsunamis or severe flooding," as determined by the preliminary Flood Insurance Rate Map for Oahu. As the proposed site is situated along a coastline, and has varied topography with the lowest point being only three feet above mean sea level, we believe a more definitive statement on flood and tsunami potential is warranted, particularly in terms of compliance with the final Flood Insurance Rate Map and supporting ordinances.

3. Finally, we note that the proposed project is situated adjacent to a Naval Reservation (see map on page 25). If they have not yet been notified, the Department of the Navy should be given the opportunity to comment on the compatibility of the proposed project with the existing and future use of the Naval Reservation.

Thank you for the opportunity to comment on this document.

Sincerely,

Hideto Kono

14-11

cc: ✓Environmental Communications, Inc.
Office of Environmental Quality Control

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. Hideto Kono, Director
Department of Planning and Economic
Development, State of Hawaii
Kamamalu Building
250 South King Street
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Kono,

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT

We have received and reviewed your letter of December 4, 1980, commenting on the abovementioned project. Below responses to your comments are provided.

1. Hawaii Coastal Zone Management. The CZM objectives and policies will be addressed and included in the Final EIS.

2. Flood hazard. The site is not located directly adjacent to the coastline as implied by your letter; it is located about 45 feet from the shoreline. The Final Flood Insurance Rate Map was reviewed at the Department of Land Utilization. Based on this review, the site is not within any flood or tsunami hazard area.

3. Location next to Naval Reservation. The Department of the Navy has been informed about the proposed project and has not identified the project as being incompatible with the use of their adjacent lands. Based on recent correspondence, the Navy has indicated that some of the land in this area have been determined to be surplus land and that this land may become available to the State or County.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty
Park Engineering, Inc.

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

2 0 NOV 1980

HIENG

Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Gentlemen:

Waterfront Manor Condominium

We have received a copy of the "Waterfront Manor Condominium" project Environmental Impact Statement and have no comments to offer at this time. The Environmental Impact Statement is being forwarded to the Environmental Quality Commission under separate cover.

Sincerely,

JERRY M. MATSUDA
Captain, HANG
Contr & Engr Officer

cc: Herbert K. Horita Realty, Inc.
c/o F. J. Rodriguez
P. O. Box 536
Honolulu, HI 96809

14-12

(P)3090.0

Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Gentlemen:

Subject: Proposed Waterfront Manor
Condominium Project
Environmental Impact Statement

The subject environmental impact statement should indicate in Paragraph 4.1 on Page 18 that there are use restrictions imposed by the federal government on Waipahu High School athletic field. This restriction applies to the proposed use of a portion of Waipahu High athletic field for the future access road to Leeward Community College.

Additionally, the maximum peak traffic flow of 544 vehicles/hour from the development would appear to overload the capacity of Waipio Pt. Access Road in the morning. This matter should be discussed in the Traffic Impact Statement.

Thank you for the opportunity to review the subject EIS.

Very truly yours,

HIDEO MURAKAMI
State Comptroller

HI:jm

cc: Mr. C. Kitaoka
Mr. J. Edington
Herbert Horita Realty

DEC 5 1980

F. J. RODRIGUEZ
PRESIDENT

ENVIRONMENTAL
COMMUNICATIONS
INC.

December 22, 1980

Mr. Hideo Murakami, State Comptroller
Department of Accounting and General Services
State of Hawaii
1151 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Murakami:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of December 2, 1980, commenting on the abovementioned Draft EIS. Below, we provide the following responses to your comments:

14-13

Paragraph 4.1 on Page 18, relating to restrictions by the federal government on Waipahu High School. This information will be included in the Final EIS.

Traffic impact on Waipio Point Access Road. The traffic consultant, Henry T. Au, has indicated that the Waipio Point Access Road is utilized primarily by local traffic (with the exception of the Naval dry-dock maintenance staff, the users of the golf couse, and the sugarcane hauling and maintenance trucks). Consequently, the road is not heavily used and no adverse or significant impacts on traffic along the Waipio Point Access Road is anticipated.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.

1152 BISHOP BUILDING SUITE 506 • P O BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8391

GEORGE R. ARIYOSHI
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING
HAWAII HOUSING AUTHORITY
P O BOX 17907
HONOLULU, HAWAII 96817

Paul A. Tom
EXECUTIVE DIRECTOR

WILLIAM A. HALL
ASS'T EXEC. DIRECTOR

IN REPLY REFER

TO: 4-105/2827

November 20, 1980

Dept. of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Gentlemen:

SUBJECT: Draft, EIS for the Proposed Waterfront Manor Condominium Project

We have reviewed the draft EIS for subject project and have no significant comments to offer at this time.

We, however, recommend that the social and economic impacts of the project be more fully covered. Information providing dimensions and plans, price ranges, amenities, etc. should also be included and discussed.

Thank you for affording us the opportunity to review and comment on this matter.

Sincerely,

PAUL A. TOM, Original Signed

PAUL A. TOM
Executive Director

cc: Herbert K. Horita Realty, Inc.
c/o F. J. Rodriguez
Environmental Communications, Inc.
P. O. Box 536
Honolulu, Hawaii 96809

Dept. of Social Services & Housing

DEC 1 1980

ENVIRONMENTAL
COMMUNICATIONS
INC.

December 22, 1980

Mr. Paul A. Tom
Executive Director
Department of Social Services and Housing
Hawaii Housing Authority
P.O. Box 17907
Honolulu, Hawaii 96817

Dear Mr. Tom:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of November 20, 1980, commenting on the abovementioned Draft EIS. In regards to your request for further social and economic impacts, we will provide more detailed information in the text of the Final EIS. However, please understand that since no detailed design or engineering work has been prepared this information is preliminary and subject to change.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Environmental Quality Commission
Department of Land Utilization
Herbert K. Horita Realty, Inc.
Anbe, Aruga & Ishizu, Architects, Inc.

1152 BISHOP BUILDING SUITE 508 • P.O. BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8391

November 28, 1980 STP 8.6870

Mr. Tyrone Kusao
Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Kusao:

Draft Environmental Impact Statement
Waterfront Manor Condominium Project
Waipio, Ewa District, Oahu

Thank you for the opportunity to review the subject draft EIS.

While the site plan shows the existing energy corridor, no documentation of it is included in the text. We suggest that this energy corridor which borders the project's "mauka" boundary be mentioned in the text.

The applicant is advised that any work within this energy corridor must be coordinated with our Harbors Division.

Very truly yours,

Ryokichi Higashionna
Director of Transportation

cc: Herbert Horita c/o F. J. Rodriguez

DEC 9 1980

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

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

Dear Mr. Higashionna:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of November 28, 1980, commenting on the abovementioned Draft EIS. We will provide a discussion of the energy corridor in the Final EIS.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Environmental Quality Commission
Department of Land Utilization
Herbert K. Horita Realty, Inc.
Park Engineering, Inc.

14-15

1152 BISHOP BUILDING SUITE 508 • P O BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8391

GEORGE R. ARIYOSHI
GOVERNOR

CHARLES G. CLARK
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF BUSINESS SERVICES

November 19, 1980

Department of Land Utilization
City and County of Honolulu
650 S. King Street
Honolulu, HI 96813

Gentlemen:

SUBJECT: Environmental Impact Statement
Waterfront Manor Condominium Project

Our assessment of the subject project has been revised to reflect the change in unit count from 576 to 863 units and the resultant makeup of 682 1-bedroom and 181 2-bedroom units. The projected enrollment is as follows:

SCHOOL	GRADE	APPROXIMATE ENROLLMENT
Lehua Elementary	K-6	30 - 60
Waipahu Intermediate	7-8	20 - 30
Waipahu High	9-12	20 - 30

Our earlier comment on the shortage of classrooms at August Ahrens Elementary is still valid and student enrollment in the K-6 grade level is assigned to Lehua Elementary School.

Under Noise Considerations, 3.3.2, the noise generated by athletic events at Waipahu High athletic field was listed as not appearing to create a significant or adverse impact. It is our contention that the noise level generated by football games with more than 7,000 participants in attendance will generate noise levels above acceptable ranges. It is further contended that it will be impossible to control spectator cheering and yelling and other associated sounds to an acceptable level.

AN EQUAL OPPORTUNITY EMPLOYER

DEC 3 1980

As the athletic field at Waipahu High was designed to accommodate these late athletic contests, it is our belief that either the prospective purchasers of these units be forewarned of possible high noise levels with no feasible means of relief or to have the developer incorporate noise attenuating devices in the design of the units.

Should there be any further questions, please contact Mr. Howard Lau at 737-5231.

Sincerely,

CHARLES G. CLARK
Superintendent

CGC:HL:jl

cc: Leeward District

14-16

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. Charles G. Clark, Superintendent
Department of Education
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Mr. Clark:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of November 19, 1980, commenting on the abovementioned Draft EIS. Below, we provide the following responses to your comments:

Information of student enrollment in public schools. The information provided in your letter relating to student enrollment will be included in the Final EIS.

Noise Considerations. We concur that noise from athletic events at Waipahu High School's athletic field will periodically affect the future residents of Waterfront Manor. Since this type of noise cannot be practically mitigated, the developer will, in selling the condominium units, forewarn the future residents of the athletic field and the potential noise from athletic events.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.

1152 BISHOP BUILDING, SUITE 508 • P.O. BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8391

University of Hawaii at Manoa

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

Office of the Director

December 8, 1980

RE:0318

Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Sir:

Environmental Impact Statement
Waterfront Manor Condominium
Waipio, Ewa District, Oahu

14-17

The Environmental Center has reviewed the draft Environmental Impact Statement for the proposed Waterfront Manor Condominium project with the help of Jacquelin Miller and Alexis Cheong Linder. We have the following concerns about this proposal and hope our comments will aid in the further assessment of the project's impacts.

The proposed project site is frequented by residents who use it extensively for fishing and crabbing. The Leeward Community College maintained a boat dock there a few years ago and found that it was in continuous use. It appears that the location of the project may eliminate access to this part of the shore of Middle Loch. Most of the Pearl Harbor is controlled by the military and access to most of its shoreline is limited. Thus it does not appear in the best interest of the community to lose even the limited amount of shoreline accessible. In the event that the proposed project is implemented, will the community be provided with access to the Middle Loch shoreline? An abandoned railway bed runs through the proposed project area. In Aiea the railbed is extensively used by joggers and bicycle riders. The EIS does not mention this recreational use.

We are most concerned about the potential adverse impact on the water quality of Middle Loch due to surface runoff from the proposed increase of hard surfaces and additional pollutants originating from herbicides, pesticides and fertilizers used in landscaping. It is noted in the EIS that "soil permeability is very slow" and "runoff is very slow to ponded." In addition since the project site slopes toward Middle Loch, surface run-off from the project site and any chemicals used to enhance ornamental growth will be carried to the adjacent waters of Middle Loch. Increased deposition of soil and potential pollutants will have significant negative impacts on the water quality and marine ecosystem. These processes may also damage the wetland ecosystem of the Pearl Harbor Wildlife Sanctuary. Although the section of the sanctuary is not utilized as a nesting site for avian fauna, it is a primary feeding ground for the Hawaiian stilt, an endangered, native species. We believe that the impacts on the water quality and on the wetlands of Middle Loch should be included in the EIS. What mitigative measures are proposed to assure that water quality will not undergo further degradation as a result of the proposed project?

The soils in the project site primarily consists of Pearl Harbor clay which has a large "shrink-swell" capacity. Extensive reinforced construction of building foundations will be necessary, contributing to the cost of the project. Considering this, what is the current estimated cost per unit? Is the cost considered to be within reasonable reach of the moderate income family?

This project will contribute significantly to the cumulative impacts of urbanization in the Pearl City-Waipahu area. At present, there are no high rise buildings in the vicinity of Leeward Community College. Five ten-story buildings will have a major impact on the area, contrary to what is noted in the EIS. It is noted in a communication to Mr. Rodriguez from the Waipahu Community Association that a major mitigative measure would be to lower the height of the building to 40 feet. Has the developer considered alternative design plans which incorporate this idea? Although such measures might add to the overall cost of the project, such measures would render the project far more acceptable to the community.

Will sewage eventually be routed from the Pearl Harbor STP to Honouliuli STP in 1981? Impacts of such a proposal should be considered and included in the EIS for review at this time.

At present, Waipio Point Access Road is the primary access to Leeward Community College and to the proposed project site. The continued urbanization of the Ewa and Central Oahu districts will generate greater traffic volumes in the future; many of the residents in these areas will also be attending the Leeward Community College. We believe that the cumulative traffic problems due to increasing urbanization was not adequately dealt with in the EIS. The addition of the approximately 1122 automobiles that the project will generate will significantly impact the existing traffic situation. Has the developer considered the possibility of constructing a back road access connecting the proposed project and Leeward Community College to Farrington Highway which would bypass the Waipio Access Road interchange? Such a mitigative measure would alleviate further congestion in that area.

Thank you for the opportunity to comment upon this EIS. We look forward to hearing from you in the near future.

Yours truly,

Doak C. Cox
Director

DCC/ck

cc: Herbert K. Horita Reality, Inc.
OEQC
Bert Kimura
Bill Burke
Jacquelin Miller
Alexis Cheong Linder

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 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: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED WATERFRONT MANOR PROJECT

We have received and reviewed your letter dated December 8, 1980 commenting on the abovementioned Draft EIS. Below, we have provided responses to your comments.

14-18

Recreational Use of the Project Site
The shoreline area adjacent to the site is used for various recreational purposes, as indicated in your letter. The site itself is not utilized (especially in its present condition). This information will be included in the Final EIS. Because the developer plans to landscape the adjacent makai areas, it is anticipated that the informal recreational activities now taking place will continue. Access to the shoreline will not be significantly impacted and people using the area will be able to use the Hawaiian Electric Company's 40-foot property. Also, no sign of the railway bed was found on the project site, perhaps you refer to the 40-foot HECO property?

Water Quality Impact on Middle Loch
A report entitled, "Environmental Aspects of Storm Water Runoff for the Proposed Waterfront Manor, Leeward Oahu, Hawaii," has just been prepared by Gordon L. Dugan, Ph.D., environmental consultant. This report is enclosed for your review and information. Dugan's report will also be included in the Final EIS document. Dugan concludes that the proposed project will have a slight impact on the water quality of Middle Loch at various storm intensities.

Soils
As indicated on footnote 2, bottom of page 9, the soil description provided in subsection 3.2.2 was general and not a site specific analysis. The soil engineering consultant firm, Geolabs, has prepared a more specific discussion on the site's soils based on field inspection and a previous soil boring study (1971). Geolabs description of the soils on the site is enclosed for your information. This additional discussion will be included in the Final EIS. Additionally, it should be noted that the Pearl Harbor soil

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series is located in a small portion (less than two acres) of the project site. Possible remedial measures to stabilize this soil for buildings include the use of crushed rock for filling this area and the use of piles to form a foundation for the proposed buildings. More specific measures will be included after a detailed soil study (with soil borings) is completed and recommendations from the soil engineering firm are provided.

Visual (Height of Buildings) Impact
The visual impacts are described in the Draft EIS. Additionally the Final EIS will contain photographs of the model. The height of the building is within the A-2 zoning, that is, the height of the structures 40 feet from the highest elevation on the site, is allowable. As stated in the Draft EIS, much of the lower floors will not be visible from higher elevations making them appear as four- or five-story buildings. An alternative of low rise buildings will leave little open space and would result in a "cluttered" appearance.

Sewage Concerns
This information is not known at this time. The impact of such an action would be addressed by the agency (the City's Department of Public Works) proposing the action.

Waipio Point Access Road
The traffic consultant, Henry T. Au, provides the following response to your comment on traffic.

The highest volume of turning movements occur during the morning peak hour and is due primarily to school traffic whose directional flow is counter to the prevailing peak hour flow. Since the major employment centers are toward the Honolulu direction, the peak hour flow of 544 trips from Waterfront Manor will be predominantly towards the Honolulu direction with right turns from Waipio Point Access Road into Farrington Highway. The right turn movements (Movement 2) however, will not occur at the intersection but at a considerable distance from the intersection and will present less of a problem at the intersection. With these counterflows from the school traffic, there is no competition for space on the highway and therefore, less traffic congestion.

The critical capacity of the intersection is on Waipio Point Access Road (which is the extension of Kahuailii Street) connecting with Waipio Point Access Road. At Level of Service C, the capacity is approximately 600 vehicles per hour in one direction and 900 vehicles per hour for both directions of travel. At Level of Service E, the capacity is approximately 900 vehicles per hour in one direction and 1,325 vehicles per hour for both directions of travel. Thus, even at Level of Service C, there is considerable excess capacity at the intersection.

The extension of the 56-foot wide access road will require the permission and financial participation of several private and public landowners. Because this participation has failed in the past (Leeward Community College Second Entrance), and there is no indication that such a participation is desired, such a mitigation measure for traffic is not feasible.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh
Enclosures

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.

14-19

UNIVERSITY OF HAWAII

Water Resources Research Center

3 December 1980

Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Gentlemen:

Subject: DEIS for Proposed Waterfront Manor Condominium Project, Waipio Ewa District, Oahu, November 1980

We have reviewed the Proposed Waterfront Manor DEIS and have the following comments:

1. It is unclear whether or not the well(s) at the site are presently sealed. Under "Drainage" on p. 2 it speaks of "...wells to be sealed on the site", in the future tense. In para. 4.3 (p. 18) it says, "the wells were sealed after... farming was discontinued", in the past tense. Similarly, in para. 7, (p. 7), "...the developer proposes (emphasis added) to seal off the well on the ...site". What is the exact status of the well(s)?

2. The following comments are with reference to p. 7, para. 7:
   a. Is the 700,000 gpd well water or spring water? This is not clear from the statement.
   b. If the wells are presently sealed, the 700,000 gpd flow savings is already occurring in the aquifer. Therefore, nothing "...will be added to the Pearl Harbor groundwater basin"; it has already occurred.
   c. If the parcel has a 700,000 gpd well capacity and projected demand is 258,900 gpd, why doesn't the development put in its own on-site water system rather than negotiating with BWS for service?
   d. There is no mention of water quality in the developments water exchange proposal. Is the surface ditch water quality satisfactory for sustained long-term golf course irrigation? What is the quality of the well water?
   e. In the golf course irrigation system, can the water source provide a sustained 223,000 gpd constant flow? If so, what would be the impact of this withdrawal on the quality and quantity of surface and groundwaters in the area?

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DEC 9 1980

3. There is a major omission in this DEIS, which is the unsuitability of Pearl Harbor clay for urban use without substantial remedial activity. It is a wetland soil, having peat or muck in the subsoil, with poor bearing capacities and instabilities that this implies. In addition there is substantial expansion and contraction of this soil on wetting and drying. Without remedial subgrade engineering, sidewalks, pavement, and roads can crack, buckle, and even sink. Structures will probably need to be piled; but unstabilized appurtenant sidewalks, stairways, etc., can separate from the buildings, crack, rise or sink and otherwise become unuseable.

   Since a substantial portion (90%, p. 9) of the parcel is in this soil, virtually all of the improvements can be affected.

4. Due to the parcels proximity to the ocean and low elevation, salt will rise to the surface through capillary action. This salt will adversely affect many plants and lawn grasses, making landscaping difficult.

Thank you for this opportunity to comment. This DEIS was reviewed by WRRC and affiliate personnel.

Sincerely,

Edwin T. Murabayashi
EIS Coordinator

ETM:jm

cc: C. Liu
H. Gee
Y.S. Fok
Herbert K. Horita Realty
c/o Env. Communications, Inc.
Environmental Center, UH

14-20

ENVIRONMENTAL
COMMUNICATIONS
INC.

C. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. Edwin T. Murabayashi, EIS Coordinator
University of Hawaii
Water Resources Research Center
2540 Dole Street
Honolulu, Hawaii 96822

Dear Mr. Murabayashi,

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT

We have received and reviewed your letter of December 3, 1980, commenting on the abovementioned Draft EIS. Below, we have provided the following responses to your comments.

1. The site contains three (3) wells. As of this date, all three have been capped. Capping of the wells is a temporary measure. The capping of the wells were done after agricultural operations ceased. Prior to the site work, the developer will seal (permanent) the wells as required by the Board of Water Supply. This information will be included in the Final EIS for clarification.

2. a. The 700,000 gpd represents the average amount of well water from one of the wells on the Waterfront Manor site. The other two wells contributed a minor portion of water that was used for watercress and ung-choi cultiviation in the past.

   b. As stated above, the wells on the site are presently capped. The saving is now occurring due to the action taken by the developer for the proposed project. The sealing of the wells will result in the permanent water savings.

   c. The water from the wells at the site are too saline to meet potable water standards.

   d. The surface ditch water quality has been tested and determined to be satisfactory for sustained long-term irrigation for the golf course. The quality of the well water is indicated in the enclosed correspondence.

   e. The water source for the golf course can provide a sustained 223,000 gpd flow as indicated in Exhibit 2, page 80 of the DEIS. As indicated on the Table, the water source has had an average water flow of 1.90 mgd (million

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gallons per day) water over the past eight years. No impact is anticipated on the withdrawal of this water; there are no downstream users of this water.

3. As indicated on footnote, bottom of page 9, the soil description provided in subsection 3.2.2 was general and not a site specific analysis. The soil engineering consultant firm, Geolabs, has prepared a more specific discussion on the site's soils based on field inspection and a previous soil boring study (1971). Geolabs description of the soils on the site is enclosed for your information. This additional discussion will be included in the Final EIS. Additionally, it should be noted that the Pearl Harbor soil series is located in a small portion (less than two acres) of the project site. Possible remedial measures to stabilize this soil for buildings include the use of crushed rock for filling this area and the use of piles to form a foundation for the proposed buildings. More specific measures will be included after a detailed soil study (with soil borings) is completed and recommendations from the soil engineering firm are provided.

4. The landscape architect indicates that landscaping will not be unusually difficult in that area. His response to your con-concerns is enclosed.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.

Enclosures: Quality of Surface Water Ditch for Golf Course
Geolabs Soil Discussion
Phillips, Brandt, Reddick Response on Landscaping

14-21

UNIVERSITY OF HAWAII

Chancellor for Community Colleges

December 8, 1980

Mr. Tyrone Kusao, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Kusao:

SUBJECT: Waterfront Condominium EIS Comments

We would like to express the following four concerns on the proposed Waterfront Condominium Project and their potential impacts on the Leeward Community College campus. We trust that these problems will be fully addressed in the final EIS.

1. Traffic Congestion

The draft EIS projects 544 vehicular trips by residents of the condominiums during the peak hour. While this traffic may not significantly affect the LCC student traffic immediately, the traffic count can become severe in the event the 44-acre Ewa Drum Storage Area is developed for either a new educational facility or public service facility. We note that the proposed project is not conveniently accessible to any acceptable form of mass transit system so it appears that the automobile will be the common mode of transporation.

Traffic on Waipio Access Road at Waipahu High School can cause serious congestion unless adequate provisions are made to accommodate the increased volume of traffic. The project site map explains that the access road within the site will be constructed to City road standards and indicates a possible linkage to the unimproved Waiawa Road, makai of LCC campus. By making this road a through road, it will be beneficial to LCC students from Waipahu, Ewa and Waianae. However, traffic through the condominiums will be heavy. If the condominium residents use the Waiawa Road to enter Kamehameha Highway, traffic congestion can occur at Ala Ike Road, which serves LCC campus. We suggest a more realistic analysis of the pending traffic in this area be made.

2. Air Quality

If there is any serious traffic congestion on Waipio Access Road and Waipahu High School, there is the possibility that air quality standards can exceed allowable state and federal limits

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during peak traffic hours. The EIS should address alternatives to mitigate this situation.

3. Noise Pollution

Although there appears to be adequate separation between the project site and Waipahu High School, we would like to emphasize that there may be noise problems. The classes and work on the project will be during daylight hours and under certain climatic conditions, the noise from the project can interfere with the classes. We recommend that noise levels be monitored to minimize disturbance to classes. There is also the possibility that residents of the condominiums may be disturbed by noise from school events and should be so informed.

4. Drainage

As the LCC drains are located towards the project site, we suggest that adequate provision be provided so that existing drains will not be adversely affected.

We appreciate the opportunity to comment on the EIS for the project and hope that the concerns will be adequately addressed.

Sincerely,

Dewey H. Kim
Chancellor for Community Colleges

cc: H. Horita Realty, Inc.
Harold Masumoto
Doak Cox
Mae Nishioka/Don Seto
Tamotsu Sahara

14-22

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. Dewey H. Kim
Chancellor for Community Colleges
University of Hawaii
2327 Dole Street
Honolulu, Hawaii 96822

Dear Mr. Kim:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of December 8, 1980, commenting on the abovementioned Draft EIS. In response to your comments, we provide the following information:

1. Traffic Congestion. Henry T. Au, the traffic consultant, provides the following response to your comments on this subject.

First, it should be emphasized that the Ewa Drum Storage Area development is only a proposal and does not conform to the General Plan and Detailed Land Use Map of the City and County of Honolulu. The proposal would require a revision to the General Plan and it would be premature at this time to assess its cumulative impact on the Waterfront Manor Project. The traffic and air quality impact will of necessity have to be assessed by the developers of the Ewa Drum Storage Area and by the various governmental agencies at such time that the Detailed Land Use Map or Zoning Map is changed or revised to accommodate this development.

The project is within the City's "desirable" guideline for accessbility to buses, a five minute walking distance or the equivalent distance of one-fourth of a mile to a bus route. Thus, public mass transportation service is available on Farrington Highway to serve the project. However, even with excellent bus service and so long as gasoline is available, travel mode by mass transportation will not increase beyond 25%. The automobile, therefore, will remain the common and preferred mode of transportation.

Waipio Point Access Road has sufficient capacity to accommodate the existing traffic as well as the traffic generated the Waterfront Manor Project without the necessity to construct or upgrade other roadways to provide additional access

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to the project area. The construction or upgrading of other roadways will worsen the traffic situation by creating additional traffic problems where these roadways intersect Farrington Highway or Kamehameha Highway and traffic will be heavy through the project area. As stated in the comments, the linkage to the Waiawa Road may cause traffic congestion at Ala Ike Road which serves Leeward Community College. Adverse traffic impact, therefore, is minimized by limiting and confining the traffic from the project to Waipio Point Access Road where there is more than sufficient capacity not only on the roadway but also at the intersection with Farrington.

2. Air Quality. As stated on page 21, item (d), "By 1995, implementation of Federally-mandated vehicle emission controls should cause these predicted values to be reduced to levels within the allowable State Standards. All carbon monoxide concentrations computations assumed worst case traffic levels and meteorological dispersion conditions." Based on this conclusion, no mitigation measures were deemed necessary by the air pollution consultant, Barry D. Root.

3. Noise Pollution. The noise levels during construction may disturb classes at Waipahu High School. However, noise from construction is subject to State noise regulations and thus must be mitigated or granted a noise permit. Noise from athletic events cannot be mitigated at the source and thus the developer will forewarn future residents of this situation.

4. Drainage. The drainage plans will provide adequate drainage to the existing areas above the project site. This will be so indicated in the Final EIS.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Environmental Quality Commission
Department of Land Utilization
Herbert K. Horita Realty, Inc.
Henry T. Au, Traffic Consultant
Park Engineering, Inc.

14-23

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

APZV-EHE-E

26 NOV 1980

Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Gentlemen:

The Draft Environmental Impact Statement for the Proposed Waterfront Manor Condominium Project, Waipio, Ewa District, Oahu, has been reviewed and we have no comments to offer. There are no Army installations or activities in the vicinity of the proposed project.

Sincerely,

Original signed by

ADOLPH A. HIGHT
COL, EN
Director of Engineering and Housing

CF:
Herbert K. Horita Realty, Inc.
c/o F. J. Rodriguez
Environmental Communications, Inc.
P.O. Box 536
Honolulu, Hawaii 96809

NOV 28 1980

United States Department of the Interior

FISH AND WILDLIFE SERVICE
300 ALA MOANA BOULEVARD
P O BOX 50167
HONOLULU HAWAII 96850

IN REPLY REFER TO
ES
Room 6307

December 5, 1980

Mr. Tyrone Kusao
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Re: DEIS, Proposed Waterfront
Manor Condominium Project
Waipio, Ewa District
Oahu, Hawaii

Dear Mr. Kusao:

We have reviewed the Draft Environmental Impact Statement (EIS) dated November, 1980 and offer the following comments.

As stated in our EIS Preparation Notice comments to the Environmental Communications, Incorporated (ECI) dated April 15, 1980, the project site is a wetland. We advised ECI of the water dependence requirements of 40 CFR 230.5(b)(11)(a) and (b), and urged that this subject be addressed in the EIS. It has not been so addressed.

Although the use of the area for nesting by endangered waterbirds was discussed by Dr. Berger in his fauna report, he did not discuss its use for feeding and loafing, nor did he address its use by migratory species. Additionally, the Fish and Wildlife Service considers this area good waterbird habitat now and believes that returning it to wetland agriculture could effectively and economically improve its value in that regard.

We appreciate this opportunity to comment.

Sincerely yours,

Nevin D. Holmberg
Deputy Project Leader for
Environmental Services

cc: Environmental Communications, Inc.
Honolulu, Hawaii

14-24

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

DEC 9 1980

J. RODRIGUEZ
PRESIDENT

ENVIRONMENTAL
COMMUNICATIONS
INC.

December 22, 1980

Mr. Nevin Holmberg
Deputy Project Leader for
Environmental Services
U.S. Department of the Interior
Fish and Wildlife Service
300 Ala Moana Boulevard
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Holmberg:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of December 5, 1980, commenting on the abovementioned Draft EIS. In response to your comments, we provide the following information.

Wetland Consideration. We have indeed addressed the wetland concerns. Subsection 4.3, page 18 of the Draft EIS, discusses the wetland designation of the project site. Also, the flora and avifauna studies were prepared to specifically address concerns on the importance of the wetland in these areas. Additionally, drainage information and water quality impact will be included in the Final EIS.

Waterbird Habitat. Dr. Berger has reviewed your response and has indicated that the project site is not now or in the future, has the potential (without extensive improvements) of being a suitable area for native or migratory waterbirds. This includes feeding and loafing activities. Dr. Berger finds the following statement of yours to be incorrect: "Additionally, the Fish and Wildlife Service considers this area good waterbird habitat now and believes that returning it to wetland agriculture could effectively and economically improve its value in that regard." Berger notes that the size and condition of the wetland portions of the site to be insufficient for "good" waterbird habitat.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Environmental Quality Commission
Department of Land Utilization
Herbert K. Horita Realty, Inc.
Dr. Andrew Berger

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United States Department of Agriculture
Soil Conservation Service
P. O. Box 50004
Honolulu, Hawaii
96850

December 5, 1980

Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Sir:

Re: EIS - Proposed Waterfront Manor Condominium Project
Kaipio, Ewa District, Oahu

We have reviewed the above-mentioned document, as requested, and offer the following comments for consideration.

A considerable portion of the area described as sites for the condominium are wetland as defined in the U.S. Fish and Wildlife Service publication, "Classification of Wetlands and Deepwater Habitats of the United States."

There appears to be some inconsistency between the following sections of the document pertaining to the amount of wetland on the site:

1. The summary implies that 2.9 acres of the site are wetlands. This does not agree with the vegetative cover map found on page 123 which indicates a considerably larger acreage is classified as wetlands.

   Page 18, Section 4.3, implies that the wetland acreage is one-half acre.

2. The area of land shown as cultivated on page 123 meets the above-mentioned criteria for wetland.

The Summary of Probable Impacts Section (Flora) does not show the loss of several acres of wetland habitat. This is also true for Section 10, "Irreversible and Irretrievable Commitments of Resources."

Does the mentioned "desirable loss of weed-type plants" include the aquatic plants that comprise the wetland acreage?

Also, the document does not conclusively establish that endemic waterbirds do not inhabit the site or that they will not be affected by the action.

Soils information from the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii" is accurately presented on pages 9 and 10. However, decisions regarding foundations for large buildings should be based on more detailed studies beyond the limitations

L-4-25

of the soil survey and the capabilities of the Soil Conservation Service. Since soil survey information is limited to a depth of five feet, more detailed studies may be needed to determine the suitability of the site for large buildings.

Erosion hazards and possible sediment pollution of Pearl Harbor during grading and prior to landscaping are not included in the Summary of Impacts. Section 5.1.2 states that "exposed soil will be subject to erosion and eventually will be transported into Middle Loch." Because this proposed project is located on the shoreline of Middle Loch, it is highly probable that the majority of soil and associated pollutants will end up in Middle Loch, as is stated in Section 5.1.2.

Section 9(1) lists nine steps to be taken to reduce erosion. Because of the size and configuration of the site, some of them will be ineffective and some will not be feasible to carry out.

This project, as a result, will contribute to a loss of several acres of wetlands. In addition, unless specific measures are taken to control all runoff from the site, a considerable amount of sediment and related pollutants will be deposited in Pearl Harbor.

We do not feel that this document adequately addresses the effects of erosion and resultant sediment pollution of receiving waters, or that it contains specific enough information on how these effects will be minimized.

Sincerely,

JACK P. KANALZ
State Conservationist

cc:
Herbert K. Horita Realty, Inc.
c/o F. J. Rodriguez
Environmental Communications, Inc.
P.O. Box 536
Honolulu, Hawaii 96809

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. Jack P. Kanalz, State Conservationist
Soil Conservation Service
U.S. Department of Agriculture
P.O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Kanalz,

Subject: Draft EIS for the Proposed Waterfront Manor Condominium Project

We have received and reviewed your letter of December 5, 1980, commenting on the above mentioned Draft EIS. In response to your comments, we provide the following information.

1. Your first comment states that there are inconsistencies relating to the area that is defined as a "wetland".

   Response: A "wetland" area is defined differently by several agencies and/or disciplines. For example, a "wetland" can be identified by soil type or vegetation or be a result of man-made drainage features. Subsequently, depending on the agency or discipline, portions of the site are within the "wetland." The portion of the site that is covered by standing or flowing water is the 0.5 acre portion as indicated on page 18, subsection 4.3. This is so stated: "A small portion of the site (0.5 acre) has flowing and standing spring water which drains into Middle Loch." The summary does not specifically state that 2.9 acres of land consists of wetland vegetation. In fact, the 0.5 acre area consists of standing or flowing water, the remainder (about 2.4 acres) consists of soils that are saturated with water primarily from the surface drainage flows from Waipahu School. This information will be included in the Revised EIS. It is the intent of the developer to allow the Corps of Engineers to review this project and determine the boundaries of the "wetland" area.

2. The loss of several acres of "wetland" habitat is not indicated in the Summary or in Section 10, "Irreversible and Irretrievable Commitments of Resources."

   Response: The botanical study states (page 113 of the Draft EIS): "The plant species found within the project site consist mostly of introduced, weedy species and the proposed development will have no impact on the total island population of these species." The importance of a "wetland" is based on its suitability as a habitat for endemic or indigeneous vegetation, avifauna, aquatic plants and animals, and its function as a drainage feature (i.e. sediment basin). We have studied these aspects and have determined that the resources in this specific site are not unique or valuable. These conclusions are so reported in the Draft EIS document.

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3. "Does the mentioned 'desirable loss of weed-type plants' include the aquatic plants that comprise the wetland acreage?"

   Response: Yes. As indicated in the botanical survey, the plants throughout the area are, with few exceptions, exotic, weedy species.

4. "Also, the document does not conclusively establish that endemic waterbirds do not inhabit the site or that they will not be affected by the action."

   Response: Andrew Berger, Ph.D., the avifauna consultant, has indicated that the project site is not now or in the future, has the potential (without extensive improvements) of being a suitable area for native or migratory waterbirds. Berger notes the based on field observation and site inspection the size and condition of the wetland portions of the site are insufficient for "good" waterbird habitat. Further, more "conclusive" results could only be acheived by countless hours of field observation at various times and seasons; this would represent a significant expense item and considering the size and condition of the site, such an effort appears to be impractical.

5. Relating to potential soil problems.

   Response: As indicated in footnote 2, bottom of page 9, the soil description provided in subsection 3.2.2 was general and not a site specific analysis. The soil engineering consultant firm, Geolabs, has prepared a more specific discussion on the site's soils based on field inspection and a previous soil boring study (1971). Geolabs description of the soils on the site is enclosed for your information. This additional discussion will be included in the Final EIS. Additionally, it should be noted that the Pearl Harbor soil series is located in a small portion (less than two acres) of the project site. Possible remedial measures to stabilize this soil for buildings include the use of crushed rock for filling this area and the use of piles to form a foundation for the proposed buildings. More specific measures will be included after a detailed soil study (with soil borings) is completed and recommendations from the soil engineering firm are provided.

6. Comments relatng to the proposed action's impact on water quality (Middle Loch).

Response: A report entitled, "Environmental Aspects of Storm Water Runoff for the Proposed Waterfront Manor, Leeward Oahu, Hawaii," has just been prepared by Gordon L. Dugan, Ph.D., environmental consultant. This report is enclosed for your review and information. Dugan's report will be included in The Final EIS document. Dugan concludes that the proposed project will have a slight impact on the water quality of Middle Loch at various storm intensities.

7. Comments relating to soil erosion.

Response: Little soil erosion is anticipated because:
(a) during construction the constractor must implement temporary measures to prevent severe soil erosion;
(b) the proposed drainage alternatives include measures such as a sediment basin which will allow sediments to be filterered out of the runoff before entering Middle Loch;
(c) the additional hard surfaces on the site and the landscaping will retain (more than its present use or an agricultural use) more of the soil within the site.

The mitigation measures, Section 9(1), will be implemented based on the need, feasibility, and effectiveness.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.
Park Engineering, Inc.
Andrew Berger

Enclosures: Geolabs Soil Discussion
Water Quality Report - Dugan

14-27

(dpl)

Serial 560
11000
24 November 1980

Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Sir:

The Coast Guard has reviewed the Environmental Impact Statement for the proposed waterfront manor condominium project at Waipio and has no objection or constructive comments to offer at the present time.

Sincerely,

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

Copy to:
Herbert K. Horita Realty, Inc.
c/o F. J. Rodriguez
Environmental Communications, Inc.
P. O. Box 536
Honolulu, HI 96809

DEC 1 1980

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

IN REPLY REFER TO:
002:09P2:SH:amn
Ser 2468

28 NOV 1980

Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Gentlemen:

Draft Environmental Impact Statement
for the Proposed Waterfront Manor Condominium Project
Waipio, Ewa District, Oahu

The subject Draft EIS which was received on 12 November 1980 has been reviewed. Because the U.S. Navy is not listed among the agencies involved in the consultation process (Table 2, Page 42), this is the first opportunity to comment in writing and for the public record.

The U.S. Navy urges that every possible precaution be taken during the construction of the Condominium Project and the relocation of fuel lines in this area to prevent erosion and run-off of top soil during periods of heavy rain. Such runoff could cause significant pollution of Middle Loch.

The U.S. Navy has cooperated with the developer by authorizing landscaping and maintenance of the strip of land fronting Middle Loch, Pearl Harbor. This project should enhance the environment, and the vegetation will reduce the prospects of soil erosion along the water's edge.

The U.S. Navy is concerned that the relocation of its 8-inch Aviation Fuel Main be handled expeditiously and be properly inspected against possible future leakage in the resited area. Such leakage could contaminate the environment and pose a safety hazard for future residents in the condominiums.

Regarding resiting the line, there is an allowable maximum time frame of 48 hours on the weekend and 24 hours weekday during which the main line can be shut off and out of service. Three weeks of advance notice is required to Naval Supply Center, Pearl Harbor (NSC PEARL) in order to arrange this. Additionally, the developer is reminded of the importance of final inspection of the relocated line, where all expenses are to be borne by the developer. If the final inspection, prior to turning the new line over to the U.S. Navy is to be accomplished by the Officer in Charge of Construction, Naval Facilities Engineering Command Contracts, Mid Pacific (OICC MIDPAC), as on similar projects, then arrangements must be made in advance for reimbursement.

The paragraph, "Impact on Easements and Utility Lines" (Page 26), may have need of updating and expanding to accommodate current information and plans.

Sincerely,
R. D. EBER
CAPTAIN, CEC, U.S. NAVY
FACILITIES ENGINEER
BY DIRECTION OF THE COMMANDER

Copy to:
Herbert K. Horita Realty, Inc.
c/oEnvironmental Communications, Inc.
CO NSC PEARL (Code 703)
OICC MIDPAC
COMPACNAVFACENGCOM (Codes 24, 04, 09P)

DEC 1 1980

14-28

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Captain R.D. Eber
CEC, U.S. Navy Facilities Engineer
Headquarters
Naval Base Pearl Harbor
Box 110
Pearl Harbor, Hawaii 96860

Dear Captain Eber:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of November 28, 1980, commenting on the abovementioned Draft EIS. Please be informed that the engineering consultant has been assessed of your concerns. The engineering consultant firm, Park Engineering, Inc., will continue to work with your staff to prepare detailed plans on the fuel main. Additionally, the contractor will abide by your regulations relating to the relocation of the Navy's 8-inch Aviation Fuel Main.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Environmental Quality Commission
Department of Land Utilization
Herbert K. Horita Realty, Inc.
Park Engineering, Inc.

1152 BISHOP BUILDING SUITE 508 • P O BOX 538 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8381

DEPARTMENT OF GENERAL PLANNING

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

GEORGE S. MORIGUCHI
CHIEF PLANNING OFFICER

DGP11/80-3242(LP)

December 5, 1980

MEMORANDUM

TO : MR. TYRONE T. KUSAO, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM : NED WIEDERHOLT, ACTING CHIEF PLANNING OFFICER

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, DATED NOVEMBER 1980

We offer the following comments.

Soils

The discussion on soils on the site (pp. 9-10, Section 3.2.2) fails to indicate the engineering properties of the soil. As indicated in the impact statement and the Soil Conservation Survey (1972), the Pearl Harbor soil series profile shows about 31 inches of clay over some 17 inches of buried muck or peat. The Soil Survey interpretation (pp. 164-5; 194-5) is that this is poor for topsoil and road fill; it has a high shrink-swell potential, is very poorly drained, and has a low bearing capacity and thus is bad for highway location or building foundations. The peat and muck could oxidize and present settling problems. Will pile-driving be required? What is the depth to consolidated material or to the caprock below? These matters should be discussed in the impact statement.

Availability of Water

The draft impact statement indicates that 258,900 gallons per day of potable water will be needed for the project (pp. 3 & 15). It is indicated that potable water used for irrigation at the Makalena Golf Course (about 223,000 gpd) can be used by the project in exchange for surface water, so that this will result in no additional potable water being used from the Pearl City Freshwater Basin. Water quality differences are not discussed.

The appendix shows a copy of an October letter from the Board of Water Supply agreeing to provide 156,000 gpd of water for 520 apartment units (pp. 76-77). In a February 1980 letter to the Department of Land and Natural Resources (DLNR), the developer's engineers indicate the ". . . project's water demand of 0.17 mgd . . . ." The DLNR response is that "Since surface water from the drainage canal is proposed to be developed, no ground water use permit is necessary from the Department of Land and Natural Resources" (p. 81).

The inconsistencies in the figures above should be corrected or explained. The difference between the water demand for the project and the potable water used for irrigation at Makalena Golf Course leaves a balance of 35,900 gpd which must be provided from a source or sources not identified in the impact statement.

Traffic and Air Pollution

The discussion in the impact statement (Section 3.7.1, pp. 16-17) does not include traffic at the intersection of Waipio Point Access Road with the roadway leading into the project area.

The discussion on air quality (Section 5.2, p. 21) seems to indicate a traffic problem here, which, in turn, would cause peak hour carbon monoxide concentrations in excess of allowable State standards. One possible mitigative measure suggested by the air quality consultant would be to provide a right turn lane for vehicles entering Waipio Point Access Road from the Waterfront Manor project. This would allow morning rush hour traffic to move along expeditiously as possible and lower vehicular emission rates.

Provision of a left turn lane from Waipio Point Access Road into the project area should also be considered. Signalization here might also be warranted. Expanded discussion of possible problems here should be included in the impact statement.

Consistency with GP-DLUM

The project area was designated for Medium Density Apartment under Ordinance 3842, November 30, 1971.

The basis for the change in land use designation, as indicated in the application dated December 2, 1970 and signed by the present applicant was:

> "There is a basic need for more rental apartment units on Oahu and in the general area of the Applicant's land. The need is tied to market demand

of low to middle income families seeking apartment units at reasonable rentals" (emphasis added).

The applicant proposed to use HUD Section 236 to subsidize rentals.

The same applicant now proposed a condominium apartment project, indicating that

> "The units will be sold in fee at prevailing market prices comparable to similar developments in the area. The developer will provide moderate income housing, the details of which shall be worked out with the Department of Housing and Community Development and the necessary agreements signed prior to issuance of the building permit" (Section 2.3.1, p. 8, emphasis added).

How the proposed project will meet the intent of the GP-DLUM change, i.e., to provide rental units at moderate rentals, should be discussed.

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

Ned Wiederholt
NED WIEDERHOLT
Acting Chief Planning Officer

NW:fmt

cc: DHCD

14-30

ENVIRONMENTAL COMMUNICATIONS INC.

S. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. Ned Wiederholt
Acting Chief Planning Officer
Department of General Planning
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Wiederholt:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of December 5, 1980, commenting on the abovementioned Draft EIS. We provide the following responses to your comments:

Soils

As indicated in footnote 2, bottom of page 9, the soil description provided in subsection 3.2.2 was general and not a site specific analysis. The soil engineering consultant firm, Geolabs, has prepared a more specific discussion on the site's soils based on field inspection and a previous soil boring study (1971). Geolabs description of the soils on the site is enclosed for your information. This additional discussion will be included in the Final EIS. Additionally, it should be noted that the Pearl Harbor soil series is located in a small portion (less than two acres) of the project site. Possible remedial measures to stabilize this soil for buildings include the use of crushed rock for filling this area and the use of piles to form a foundation for the proposed buildings. More specific measures will be included after a detailed soil study (with soil borings) is completed and recommendations from the soil engineering firm are provided.

Availability of Water

The water quality of the drainage (surface) water is slightly more saline (conductance = 700 µmhos) than the potable water now used for irrigating the golf course. This water is adequate for irrigation purposes without adverse impact to plantlife.

The number of condominium units for this project has changed several times. The information provided in the Draft EIS is the correct information on potable water demand.

The need for additional potable water (balance of 35,900 gpd) is discussed on page 73, section 14 of the Draft EIS.

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Traffic and Air Pollution

Discussion on the impact on traffic on Waipio Point Access Road will be included in the Final EIS.

Section 5.2, page 21: On the contrary, the air pollution consultant does not state that there will be an air quality problem. Item (d) specifically states: "By 1995, implementation of Federally-mandated vehicle emission controls should cause these predicted values to be reduced to levels within the allowable State Standards. All carbon monoxide concentrations computations assumed worst case traffic levels and meteorological dispersion conditions."

A left-turn from Waipio Point Access Road into the project's 56-foot access road is not felt to be necessary because at this location, most of the vehicles will be turning to or from the Waterfront Manor project. Very few cars will be going beyond this junction.

Consistency with GP-DLUM

The developer has determined that the condominium project as now proposed would be economically more feasible than the originally planned rental units, since rental units normally take longer to realize a return on investment. The developer still intends to provide moderate cost housing with the participation of the City's Department of Housing and Community Development.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.
Park Engineering, Inc.

Enclosure: Geolabs Discussion on Soils - Waterfront Manor

14-31

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

AKIRA FUJI
DIRECTOR

TE11/80-3175

December 9, 1980

MEMORANDUM

TO : TYRONE T. KUSAO, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM : AKIRA FUJITA, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT IN WAIPIO

We offer the following comments on the Draft EIS:

1. The intersection of the proposed 56-foot roadway and Cane Haul Road should be redesigned to provide a 90-degree angle of intersection. In conjunction with this design, provisions for maintenance easements in favor of the City should be made on the Cane Haul Road legs.

2. The traffic report does not cover the effect of the proposed development on the school pedestrian and vehicular traffic on Waipio Access Road fronting the school.

3. Waipahu High School officials should be given an opportunity to review this EIS.

4. The traffic consultant should discuss the impact of the project on mass transit. If mass transit is severely impacted, it cannot be considered as a mitigating factor for the project's traffic impact.

We thank you for providing us this opportunity to review and comment on the project.

AKIRA FUJITA
Director

cc: Herbert K. Horita Realty, Inc.
Environmental Communications, Inc.

DEC 11 1980

F. J. RODRIGUEZ
PRESIDENT

ENVIRONMENTAL
COMMUNICATIONS
INC.

December 22, 1980

Mr. Akira Fujita, Director
Department of Transportation Services
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Fujita:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of December 9, 1980, commenting on the abovementioned Draft EIS. In response to your comments, we provide the following information:

1. We will continue to work with your staff to work out the details for the cane haul road.

2. The traffic consultant, Henry T. Au, provides the following response to your comment on vehicular traffic fronting Waipahu High School.

   At the time of the survey, conducted on Monday, October 15, 1979 to assess the traffic problem at the intersection of Waipio Point Access Road and Farrington Highway, it was determined that school pedestrian and vehicular traffic as well as parking of vehicles by students attending Waipahu High School on Waipio Point Access Road fronting the school did not create a traffic problem.

   A large traffic island separates Waipio Point Access Road from the school and serves as a refuge for pedestrians to cross the roadway. This section of the roadway accommodates primarily the right turn movement into Farrington Highway. In addition, the pavement width of the roadway fronting the school is 36 feet, with two 12-foot lanes, one in each direction, marked for the movement of traffic. The remaining 12-foot pavement is cross-hatched and set aside for a school bus loading zone. The loading zone is used but a few minutes each day and also serves as a refuge for pedestrians. There is also a wide sidewalk area of varying width fronting the school. These various features of the roadway offer considerable protection for both pedestrians and vehicles and should not create a problem even with the additional traffic generated by Waterfront Manor.

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3. The Department of Education and the Department of Accounting and General Services have received copies of the Draft EIS for review. These departments will review the Draft EIS as it pertains to Waipahu High School and its facilities.

4. Mass transit is discussed on page 110 f the Draft EIS. For your additional information Henry Au prepared the following response to your comments on mass transit.

   Although the project is within the City's "desirable" service guideline for accessibility to buses, a five minute walking distance or the equivalent distance of one-fourth of a mile to a bus stop will not be convenient for the residents of the project. The two bus routes: Route 50, Honolulu-Ewa Beach; and Route 51, Honolulu-Makaha have collective average headways of 12 minutes during the peak traffic hours and 15 minutes during the off-peak hours.

   Surveys conducted in the United States indicate that not more that 20 percent of the public will use mass transportation with that distance from the bus stop, such headways and so long as gasoline in readily available. For the 5 minute headway bus service, patronage may be incresed to 25 percent. Even with excellent bus service, patronage will not increase beyond 25 percent. The project, therefore, will have very little impact on mass transportation.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Environmental Quality Commission
Department of Land Utilization
Herbert K. Horita Realty, Inc.
Henry T. Au, Traffic Consultant

DEPARTMENT OF PARKS AND RECREATION

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

RAMON DURAN
DIRECTOR

November 25, 1980

MEMORANDUM

TO : TYRONE T. KUSAO, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM : RAMON DURAN, DIRECTOR

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT
PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT
TMK: 9-4-08: 23

We have no comments to offer on the Proposed Waterfront Manor Condominium Project Environmental Impact Statement at this time.

Thank you for the opportunity to review the EIS.

Warm regards.

RAMON DURAN, Director

RD:lm

cc: Herbert K. Horita Realty, Inc.

14-33

DEPARTMENT OF PUBLIC WORKS

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

WALLACE MIYAHIRA
DIRECTOR AND CHIEF ENGINEER

ENV 80-342

November 18, 1980

MEMORANDUM

TO : MR. TYRONE T. KUSAO, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM : WALLACE MIYAHIRA, DIRECTOR AND CHIEF ENGINEER

SUBJECT: EIS FOR PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU, HAWAII

We have reviewed the subject EIS and have the following comments.

1. Construction plans shall be submitted to the Divisions of Engineering and Wastewater Management for approval.

2. The 56-foot right-of-way roadway shall conform to City standards with an 8-foot sidewalk area on each side.

3. Easements for storm and sanitary sewers outside the public right-of-way shall be dedicated to the City and County.

WALLACE MIYAHIRA
Director and Chief Engineer

cc: Environmental Communications, Inc.

NOV 20 1980

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. Wallace Miyahira, Director & Chief Engineer
Department of Public Works
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Miyahira:

SUBJECT: EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU, HAWAII

We have received and reviewed your letter of November 18, 1980, commenting on the abovementioned Draft EIS. These comments were also reviewed by the engineering consultant who indicates that the three items addressed in your letter will be complied with. Additionally, we will include these statements in the Final EIS.

We appreciate your comments on this Draft EIS.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Herbert K. Horita Realty, Inc.
Department of Land Utilization
Environmental Quality Commission
Park Engineering, Inc.

14-34

1152 BISHOP BUILDING SUITE 508 • P O BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8361

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

COPY

November 25, 1980

TO : MR. TYRONE T. KUSAO
DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM : KAZU HAYASHIDA
BOARD OF WATER SUPPLY

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO

We have the following comments on the environmental impact statement (EIS):

1. Page 4, Section 2.2 (2): The number of buildings should be corrected from "four (4)" to "five (5)."

2. Page 7, Section 2.2 (7): The surface ditch (new source of irrigation water) drains runoff from water applied to the fields as well as spring discharge.

3. Page 7, Section 2.2 (7): There are three (3) wells on the site which should be sealed.

4. Page 9, Section 3.2.1: The description of the geology of the area should be rewritten to accurately describe the geological sequence of events.

5. Page 11, Section 3.2.5 (a): The phrase "springs have been capped" should be changed to "wells have been capped."

6. Page 38, Item 7: The last sentence should be corrected to indicate that three (3) wells on the property will be sealed.

DEC 3 198

In addition to our comments on the EIS, we offer the following information:

We have conceptually approved the water exchange proposal and should a water exchange agreement be consummated, a water commitment will be made to the project. The availability of water for any additional units needing water above the water exchange amount will be negotiable with the developer.

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

Kazu Hayashida

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Herbert K. Horita Realty, Inc.
c/o F. J. Rodriguez

14-35

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. Kazu Hayashida, Director
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Hayashida:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of November 25, 1980, commenting on the abovementioned Draft EIS. We would like to provide the following responses to your comments.

1. This correction will be made in the Final EIS.

2. This information will be included in the Final EIS. It is our understanding that the "fields" are actually the watercress growing areas.

3. This is correct and will be so noted in the Final EIS.

4. The description has been rewritten to describe the geological events in sequence.

5. This change will be made.

6. This change will be made.

Finally, the information on the availability of potable water will be included in the Final EIS.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

F. J. Rodriguez

FJR/jrh

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.
Park Engineering, Inc.

Merry Xmas Kazu!
Fred

1152 BISHOP BUILDING, SUITE 508 • P O BOX 538 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-0381

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE 523-4181

FRANK F. FASI
MAYOR

EDWARD Y. HIRATA
MANAGING DIRECTOR

BARRY CHUNG
DIRECTOR

MYRA M. YANASAKI
DEPUTY DIRECTOR

RECEIVED
'80 NOV 20 P1 10:17
CITY & COUNTY OF HONOLULU
STATE OF HAWAII

November 19, 1980

Department of Land Utilization
City and County of Honolulu
Honolulu, Hawaii

Gentlemen:

Subject: Proposed Waterfront Manor
Condominium Project
Environmental Impact Statement

We have reviewed the Environmental Impact Statement for the Waterfront Condominium Project.

Ordinance No. 80-92 of the City and County of Honolulu provides that "the details to construct moderate income housing be worked out and documented with the Department of Housing and Community Development and the necessary agreements signed prior to the issuance of a building permit."

Please have the developer contact Mr. John Whalen, Phone 523-4209, to work out the details for the moderate income units.

Very truly yours,

Barry Chung

Barry Chung

cc: Herbert K. Horita Realty, Inc.
c/o Mr. F. J. Rodriguez
Environmental Quality Commission

14-36

DEC 5 1980

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. Barry Chung, Director
Department of Housing and Community Development
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Chung:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter dated November 19, 1980, commenting on the abovementioned Draft EIS. The developer informs us that preliminary contact has been made with your office and that as plans for the project are detailed, further coordination with your office will take place. The developer will adhere to Ordinance No. 80-92 relating to coordination and documentation of any agreements to construct moderate income housing prior to the issuance of a building permit.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.

1152 BISHOP BUILDING, SUITE 508 • P.O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8381

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII [illegible]

80/SMA-23(SM)

December 10, 1980

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

Dear Mr. Rodriguez:

Draft Environmental Impact Statement
Waterfront Manor - Waiawa, Waipio, Ewa, Oahu
Tax Map Key 9-4-08: 23

We have reviewed the above and have the following comments to offer.

1. Reference: Page 1, 9.

   Comment: Because of the difference in elevation, 3 feet to 58 feet, a topographic map of the project site should be included in this document. In the original Director's Report for the zone change from AG-1 Restricted Agricultural District to A-2 Apartment District, the maximum elevation of the site was stated as 55 feet above Mean Sea Level (MSL), while in the draft EIS, the maximum elevation of the site is stated as 58 feet above MSL.

2. Reference: Page 20.

   Comment: Because of varying topography and the site's location adjacent to Middle Loch, there should be a description of the anticipated quantities of cut and fill.

3. Reference: Page 22.

   Comment: Additional information on a drainage plan should be included in this document. This plan should specify quantities of runoff which can be expected for a specific design year storm, and how the runoff will be channelled to Middle Loch.

14-37

DEC 11 1980

4. Reference: Page 23.

   Comment: Elevations from the various locations (three specified on Figure 3), as well as a view along the shoreline should be included, so that the reviewer can get a better understanding of the visual impact of five 10-story buildings in this location.

5. Reference: Page 26.

   Comment: In the rezoning request, the developer agreed to submit to the Department of Housing and Community Development (DHCD) a program for providing affordable housing for Oahu's low- and low-moderate income people.

   "An acceptable program would provide 10% of the units for sale to households below HUD's Section 235 income limits, or 10% of the raw land for the development of lower income housing, or an equivalent contribution in the form of a fee." Has this been pursued by the developer with the DHCD?

6. Reference: Page 100-110.

   Comment: Under existing conditions, it is stated that the turning movements at the Waipio Point Access Road and Farrington Highway intersection are very light (less than 200 per hour in a particular direction). How will this be affected by a projected peak hour from Waterfront Manor of 544 trips? What is the capacity of the intersection at Service Level E?

If there are any questions, please contact Sampson Mar of our staff at 523-4077.

Very truly yours,

TYRONE T. KUSAO
Director of Land Utilization

TTK:sl

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. Tyrone T. Kusao, Director
Department of Land Utilization
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Kusao:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of December 10, 1980, commenting on the abovementioned Draft EIS. Below, responses to your comments are provided.

1. Topographic Map, Site Elevations (page 1, 9). The topographic map we have available is a large (3 feet by 5 feet) map which is not easily reduced or included in the EIS. However, we will provide a generalized topographic map of the project site in the Final EIS.

2. Cut and Fill Quantities (page 20). The engineering consultant indicates that no off-site soil fill is expected. However, granular material (e.g. crushed rock) will likely be used to stabilize the area in which moisture-laden soil is located.

3. Additional Information on Drainage (page 22). The enclosed information on drainage (provided by the engineering consultant) will be included in the Final EIS.

4. Visual Impact, Elevations (page 23). Additional information on the elevation of the view at various location and the shoreline will be provided. It is noted that the view along the shoreline primarily consists of the "floating dry docks" offshore in Middle Loch.

5. Moderate Income Housing (page 26). The developer will be coordinating the moderate income housing with the City's Department of Housing and Community Development. It is the developer's intent to abide by the rules and regulations of the Department of Housing and Community Development.

6. Impact on traffic at Waipio Point Access Road (page 100-110). The traffic consultant, Henry T. Au, provides the following response to your comment on traffic.

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14-38

The highest volume of turning movements occur during the morning peak hour and is due primarily to school traffic whose directional flow is counter to the prevailing peak hour flow. Since the major employment centers are toward the Honolulu direction, the peak hour flow of 544 trips from Waterfront Manor will be predominantly towards the Honolulu direction with right turns from Waipio Point Access Road into Farrinton Highway. The right turn movements (Movement 2) however, will not occur at the intersection but at a considerable distance from the intersection and will present less of a problem at the intersection. With these counterflows from the school traffic, there is no the competition for space on the highway and therefore, less traffic congestion.

The critical capacity of the intersection is on Waipio Point Access Road (which is the extension of Kahualii Street) connecting with Waipio Point Access Road. At Level of Service C, the capacity is approximatly 600 vehicles per hour in one direction and 900 vehicles per hour for both directions or travel. At Level of Service E, the capacity is approximately 900 vehicles per hour in one direction and 1,325 vehicles per hour for both directions of travel. Thus, even at Level of Service C, there is considerable excess capacity at the intersection.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Department of Land Utilization
Environmental Quality Commission
Park Engineering, Inc.
Henry T. Au

MS-ES

December 8, 1980

Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Gentlemen:

Subject: Environmental Impact Statement for the Proposed Waterfront Manor Condominium Project

We have reviewed the draft environmental impact statement for the proposed project and note that our concern has not been addressed regarding the upgrading of other roadways that could provide access to the project area. These are the Cane Haul Road that runs from the vicinity of the center of the proposed development into Waipahu, and Waiawa Road, which runs from the Diamond Head end of the development toward Pearl City. Waipio Access Road remains as the primary access to the development. The A. M. peak hour volume for 1979 indicates a total of 571 turning movements at Waipio Access Road and Farrington Highway, and the projected 1990 peak hour volume estimates an additional 397 vehicles from the Waterfront Manor project, which indicates heavy congestion at this corner.

Also, on page 27, Section 5.6.4(2), "equal to 5.4 police employees" should read "equivalent to more than 4 police employees."

Finally, we believe that a particular effort should be made to design the five buildings and adjacent areas so as to minimize the opportunities for criminal activities. Attention to the principles of environmental security in the design of doors and windows, lanais, walkways and roadways, lighting, and the like can do much to increase the security and satisfaction of all the residents.

We hope that this information will be of assistance to you.

Sincerely,

FRANCIS KEALA
Chief of Police

By
HAROLD FALK
Deputy Chief of Police

cc: Herbert K. Horita Realty, Inc.

DEC 11 1980

14-39

F. J. RODRIGUEZ
PRESIDENT

ENVIRONMENTAL
COMMUNICATIONS
INC.

December 22, 1980

Chief Francis Keala
Fire Department
1455 South Beretania Street
Honolulu, Hawaii 96814

Dear Chief Keala:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of December 8, 1980, commenting on the abovementioned Draft EIS. In response to your comments, we provide the following information.

Traffic congestion at the intersection of Waipio Access Road and Farrington Highway. The traffic consultant, Henry T. Au, has provided the following information in reply to this comment.

Waipio Point Access Road is the primary access to the development and has sufficient capacity to accommodate the existing traffic as well as the traffic generated by the Waterfront Manor Project without the necessity to upgrade other roadways to provide additional access to the project area. The upgrading of other roadways will worsen the traffic situation by creating additional traffic problems where the roadways intersect Farrington Highway or Kamehameha Highway and traffic will be heavy through the project area, to the detriment of the residents of the project area.

As an example, by improving and linking Waiawa Road, traffic congestion will occur at Ala Ike Road which serves Leeward Community College and traffic volumes will be heavy through the project area. Adverse traffic impact, therefore, is minimized by limiting and confining the traffic from the project to Waipio Point Access Road where there is more than sufficient capacity not only on the roadway but also at the intersection with Farrington Highway.

Although the A.M. peak hour volume for 1979 indicates a total of 571 turning movements at Waipio Point Access Road and Farrington Highway, the turning movements in a particular direction are very light, less than 200 vehicles per hour. The directional flow of these turning movements is counter to the prevailing peak hour flow and is due primarily to students going to and from school (Waipahu High School).

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Since the major employment centers are toward the Honolulu direction, the peak hour flow of the additional 397 vehicles from Waterfront Manor will be towards the Honolulu direction, with right turns from Waipio Point Access Road into Farrington Highway. The right turn movements (Movement 2), however, will not occur at the intersection but a considerable distance from the intersection. With these counterflows from the school traffic, there is not the competition for space on the highway and therefore, less traffic congestion.

The critical capacity of the intersection is on Waipio Point Access Road which is the extension of Kahuaili Street connecting with Waipio Point Access Road. At Level of Service C, the capacity is approximately 600 vehicles per hour in one direction and 900 vehicles per hour for both directions of travel. Thus, even at Level of Service C, there is considerable excess capacity at the intersection.

Page 27, Section 5.6.4(2) relating to police employees. This statement will be corrected to read: "(2) the Police Department, by their letter of December 8, 1980, indicated that the workload increase due to this project will be equivalent to more than four (4) police employees."

Security in the design of the proposed buildings. The architect has indicated that the buildings will have security entrance phones and that security at the recreational center will be provided. Lighting along the main walkways between buildings will also be provided. Other security measures will likely be incorporated by the future condominium association.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Environmental Quality Commission
Department of Land Utilization
Herbert K. Horita Realty, Inc.
Anbe, Aruga & Ishizu, Architects, Inc.

14-40

AMERICAN LUNG ASSOCIATION of Hawaii

December 8, 1980

Department of Land Utilization
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Gentlemen:

Subject: Proposed Waterfront Manor Condominium

We have reviewed the Environmental Impact Statement for the subject project with particular attention to those sections pertaining to air quality impact. Overall, the analyses contained therein were good, but perhaps not far-reaching enough. Our detailed comments follow.

1. The impact analysis stopped at the intersection of Waipio Access Road and did not include other possibly critical locations farther down Farrington Highway toward Honolulu, nor did it include the H-1 Freeway. A number of very large residential developments are planned in the next 10 years in the Ewa District and the cumulative impact of all of them should be assessed.

2. The proposed project will require electrical power generation which in turn will necessitate the burning of air polluting fossil fuels. This indirect impact should be discussed in the EIS.

3. Similarly, this project will generate solid waste which in all likelihood will be burned in a municipal incinerator in the future. This indirect impact should also be discussed.

4. The project's proximity to sugar cane fields should also be discussed in terms of the effect of agricultural activities (cane fires, fugitive dust, and pesticide drift) on the project site.

5. Figure 2 in the EIS does not depict the locations of the air quality modeling receptor Sites 2 and 3 as stated in the text (p. 95).

Sincerely yours,

James W. Morrow

James W. Morrow, Director
Environmental Health

JWM:jm

DEC 9 1980

Christmas Seals Fight TB, Asthma, Emphysema, Air Pollution

ENVIRONMENTAL
COMMUNICATIONS
INC.

December 22, 1980

Mr. James W. Morrow, Director
Environmental Health
American Lung Association of Hawaii
245 North Kukui Street
Honolulu, Hawaii 96817

Dear Mr. Morrow:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of December 8, 1980, commenting on the abovementioned Draft EIS. Below, we have provided the following responses to your comments.

1. Comprehensive assessment of the cumulative environmental effects of this project with other developments that are proposed or under construction. We recognize the importance of viewing impacts on a regional basis. However, there are several very practical reasons why this type of information is almost never included in an EIS. First, the individual developer of a single project cannot be given the sole responsibility to come up with this type of massive data and evaluation. The money and time required to do this would be sizeable and would unfairly burden one project. Second, the developer is not always aware of the plans of other developers and other projects (including governmental actions). Finally, we feel that all projects must be viewed individually on their own merits. Overall review of land uses are provided at the State and County levels and the developer implements these land use designations. Specific concerns on how land uses are implemented are addressed in the EIS. Additionally, since we have an established system of future planning, perhaps this concern should be expressed to the appropriate planning agencies which can adequately address cumulative impacts.

2. In the first place, it is not a foregone conclusion that increased electrical demand will 'necessitate' the burning of air polluting fossil fuels. There are a number of promising alternatives available to the Hawaiian Electric Company regarding future electric power generation—wind, OTEC, and HPOWER are all possible alternatives to increased use of fuel oil.

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14-41

None the less, as a worst case, the following estimate is made. The proposed project will have about 594,00 square feet of living space. If units are 'all-electric,' they can be expected to require about 7 KWH of electric energy per square foot, which will require about 7.17×10^4 BTU of energy per square foot at the power plant. Assuming a low sulfur fuel oil is used (with an energy content of 150,00 BTU per gallon) this will require about 2.84×10^5 gallons or 6,750 barrels of oil per year. This will produce air pollutant emissions as shown in the Table below (in Tons/year).

	Tons/Year	
	Waterfront Manor	Current (1978) Emissions from Electric Generation on Oahu
Particulates	1.1	2109
Sulfur dioxide	11.0	37976
Carbon monoxide	.5	59
Hydrocarbons	.5	272
Nitrogen dioxide	14.9	19523

This represents an increase in air pollutant emissions from electric power generation on Oahu of about 0.70 percent. This is a small increase and should have little effect on the overall air quality of the island. If the extra demand is met by increased output from the Kahe generating plants, however, the increased emissions will be going into an area where there are already problems meeting State of Hawaii and perhaps Federal ambient air quality standards for sulfur dioxide.

3. Again it is not a foregone conclusion that solid waste generated by the project will be burned in a municipal incinerator. It could be hauled to a sanitary land fill or it could be used in the future to help generate electricity. But if the solid waste is burned in an incinerator projected air pollutant emissions are likely to be as shown below (assuming an average of 2.5 people per unit generating 2.6 pounds at burnable waste per day).

	Tons/Year	
	Waterfront Manor	Current (1978) Incineration on Oahu
Particulates	0.78*	43
Sulfur dioxide	1.3	76
Carbon monoxide	17.81	900
Hydrocarbons	7.8	554
Nitrogen dioxide	1.56	62

* assuming the incinerator has a particulate emission control system that is 90 percent effective.

This represents about a 1.8 percent increase in air pollutants from incinerator burning. This percentage figure is somewhat misleading, however, in that many future inhabitants of the project will be coming from elsewhere on Oahu where their trash was previously collected and incinerated, in which case their annual trash emissions would be included in existing figures as well as forecasts for Waterfront Manor. This percentage increase could thus be much too high.

4. In the first place the purpose of the air quality study was to evaluate the potential impact of the proposed project on the surrounding environment, not vice-versa. In the second place, the project is bounded to the northeast by Naval Reserve, to the northwest by Waipahu High School, and to the south by Pearl Harbor. There are no sugarcane cultivation in close enough proximity to be of any concern.

5. This will be corrected in the Final EIS.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/jrh

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.

14-42

Department of Land Utilization
650 South King St.
Honolulu, HI 96813

LIFE OF THE LAND
A GROUP FOR ENVIRONMENTAL RESEARCH AND ACTION

December 8, 1980

Dear Tyrone Kusao,

RE: Proposed Waterfront Manor Condominium Project- Waipio, Ewa

We have reviewed the Draft EIS and have the following comments:

1. We would like to see a comprehensive assessment of the cumulative environmental effects of this project with other developments or projects which have been proposed or are under construction in this area.

2. The Waipahu Community Association voiced a concern that vehicle parking spaces will be inadequate and that the additional parking required will tend to obstruct traffic as vehicles line the street. We would like to see this concern addressed in the EIS.

3. We would like a more specific definition of low to moderate income housing. What is the estimated price range of the units?

4. Kionana Char suggested that as the Leucaena scrub on the steeper areas of the project site is removed, immediate grassing of the area is advised to lessen soil runoff during construction. We would like to see this practiced.

Thank you for this opportunity to comment.

Sincerely,

Sandy Scafe
Sandy Scafe
LOL Staff

cc: LOC
Waipahu Community Assoc.

DEC 9 1980

404 PIIKOI STREET HONOLULU HAWAII 96814 TELEPHONE 521 1300

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Ms. Sandy Scafe
Life of the Land
404 Pilkoi Street
Honolulu, Hawaii 96814

Dear Ms. Scafe:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT, WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter of December 8, 1980, commenting on the abovementioned Draft EIS. Below, we have provided the following responses to your comments.

1. Comprehensive assessment of the cumulative environmental effects of this project with other developments that are proposed or under construction. We recognize the importance of viewing impacts on a regional basis. However, there are several very practical reasons why this type of information is almost never included in an EIS. First, the individual developer of a single project cannot be given the sole responsibility to come up with this type of massive data and evaluation. The money and time required to do this would be sizeable and would unfairly burden one project. Second, the developer is not always aware of the plans of other developers and other projects (including governmental actions). Finally, we feel that all projects must be viewed individually on their own merits. Overall review of land uses are provided at the State and County levels and the developer implements these land use designations. Specific concerns on how land uses are implemented are addressed in the EIS. Additionally, since we have an established system of future planning, perhaps this concern should be expressed to the appropriate planning agencies which can adequately address cumulative impacts.

2. Parking adequacy. Parking is addressed on page 110, Draft EIS. Parking is expected to be sufficient especially in light of the high cost of purchasing an automobile, the limit on parking space at one's residence, and the cost of fuel and vehicle maintanance.

3. Price of moderate income housing. The definition of moderate income varies depending on the agency and inflation level. In other words the income level which defines moderate income families various from year to year. The developer does not

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know the price range for moderate income housing. The guidelines established by the City's Department of Housing and Community Development will be used to determine the final sales price for this type of housing.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.

14-43

REPRESENTING ALL THE PEOPLE OF WAIPAHU

Waipahu Community Association

HONOLULU SAVINGS AND LOAN BUILDING
94-229 WAIPAHU DEPOT STREET
WAIPAHU, HAWAII 96797

TELEPHONE 677-4950

November 14, 1980

Department of Land Utilization
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Addendum to Waipahu Community Association letter of April 14, 1980 -
Horita's Waterfront Manor.

I have just completed review of the draft environmental impact statement (EIS), for the proposed Horita Waterfront Manor condominium project, dated November 1980.

The proposed increase of 343+ units, to be accommodated by the addition of one building, plus increased height to ten stories, is no doubt in the best interest of the developer, however, the Waipahu Community Association does not see any benefit to the community.

The board of directors of this organization considered the proposed changes stated in this new document, along with the absence of proposed solutions to our earlier reservations, regarding traffic problems, height of buildings, vehicle parking shortage for residents, and the overall impact on that particular, and special area of Waipahu adjoining the high school.

We are of one mind in believing the original concept was acceptable. The changes proposed in the new document are not in step with today's reality, i.e., with all family members working or seeking employment all units will have one automobile for each adult, so parking spaces for residents alone, before visitor consideration, 389 short of the actual spaces needed to prevent heavy on-street and open-space parking. This ratio applied to the original plan also.

The Waipahu community maintains it's earlier position of supporting the Horita proposal, as originally presented, and with the same reservations.

14-44

NOV 18 1980

COMPRISING OF
Crestview/Seaview Association, D. O. E. - Leeward District, Friends of Waipahu Cultural Garden Park, Harbor View Neighborhood Association, Leeward Community College, Oahu Sugar Company, Robinson Heights Association, Waiani Neighborhood Association, Waiani Rise Association, Waipahu Advocates for the Elderly, Waipahu Businessmen's Association, Waipahu Highlands Association, Waipahu Jackrabbits, Waipahu Recreation Advisory Council, Waipahu Recreation Center

It is noted here that traffic counting devices are no substitute for on-the-spot observations of traffic congestion, and other matters of community concern. Long range impact must be considered if orderly growth is our end product.

Sincerely,

C. O. "Andy" Anderson
President

COA:ls

cc: Senators Kuroda, Young, Miziguchi, and Cayetano
Representatives Shito and Kihano
Councilmen Akahane and Matsumoto
Herbert K. Horita Realty, Inc.
c/o F. J. Rodriguez
Environmental Communications, Inc.

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

December 22, 1980

Mr. C. O. "Andy" Anderson, President
Waipahu Community Association
Honolulu Savings and Loan Building
94-229 Waipahu Depot Street
Waipahu, Hawaii 96797

Dear Mr. Anderson:

SUBJECT: DRAFT EIS FOR THE PROPOSED WATERFRONT MANOR CONDOMINIUM PROJECT WAIPIO, EWA DISTRICT, OAHU

We have received and reviewed your letter dated November 14, 1980, commenting on the proposed project. Your comments indicate that the new plan for 863 condominium units is unacceptable to the Waipahu Community Association in comparison to the original 520-unit plan. This change was made because the unit increase would make the project more viable and allow for a lower cost per unit based on the amenities (e.g. health/recreational center) and moderate income units being provided. A review of the additional height (two additional stories) indicates that the impact on the view plane would be similar to the original eight-story plan. The original 8-story buildings would have been 80 feet high; the proposed 10-story buildings will be 85 feet high. Finally, the A-2 zoning allows (under the Comprehensive Zoning Code) 1.5 million square feet of buildable area. The 863 units represents 760,874 square feet of developed floor space area or 51 percent of the maximum allowable density. (This information is included on page 14, subsection 3.4.3 of the Draft EIS.)

14-45

You also noted that a parking space shortage would occur. This is not anticipated by the developer or the traffic consultant. Parking is discussed on page 110 of the Draft EIS. In this section, the traffic consultant notes that considering the limitation of parking spaces for each dwelling, the high cost of vehicles and fuel, the trend towards fewer and smaller cars, and the availability of public transportation, the amount of residential parking should be sufficient.

Finally, in response to your comment on "traffic counting devices are no substitute for on-the-spot observations of traffic congestion," the traffic consultant provided the following information: "Besides using traffic counting devices to assess traffic congestion problems, the consultant also made on-the-spot observations of the traffic problems at the intersection of Waipio Point and Farrington Highway. The observations are described in the "Traffic Impact Statement" on page 106 of the Draft EIS.

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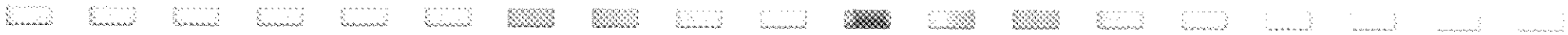
We appreciate your comments and hope that the information provided above provides clarification on your concerns.

Very truly yours,

F. J. Rodriguez

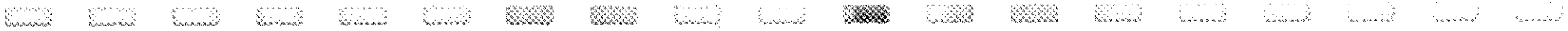
FJR/lka

cc: Department of Land Utilization
Environmental Quality Commission
Herbert K. Horita Realty, Inc.
Henry Au, Traffic Consultant



15. LIST OF UNRESOLVED ISSUES

At this time there is one unresolved issue relating to the availability of potable water for 863 units. Potable water, as discussed in the various sections, must be available for 863 units. The issue to be resolved is whether the Board of Water Supply will approve potable water for the all 863 units. Resolution of the issue will occur when the developer submits the Water Master Plan to the Board of Water Supply for review and approval.



16. LIST OF NECESSARY APPROVALS

The proposed project must receive the following approvals and permits prior to its implementations:

(1) Revised Environmental Impact Statement - Acceptance of the Revised EIS must be obtained from the Department of Land Utilization.

(2) Shoreline Management Permit - Approval of the permit must be provided by the City Council.

(3) Department of the Army Permit for modification or a designated wetland area - U.S. Army Corps of Engineers.

(4) Water Master Plan - Board of Water Supply.

(5) Grading Permit - Department of Public Works.

(6) Building Permit - Building Department.

(7) Construction plans will be submitted to the Divisions of Engineering and Wastewater Management, Department of Public Works, City & County of Honolulu for approval.

17. REFERENCES

1. Soil Conservation Service, U.S. Department of Agriculture in cooperation with the University of Hawaii Agricultural Experiment Station, "Soil Survey of (the) Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii," issued August, 1972.

2. M. E. Elliot and E. M. Hall, Wetlands and Wetland Vegetation of Hawaii, prepared for the U.S. Army Corps of Engineers, POD, 1977.

3. R. J. Shallenberger, An Ornithological Survey of Hawaiian Wetlands, prepared for the U.S. Army Corps of Engineers, POD, 1977.

4. City and County of Honolulu, Comprehensive Zoning Code, 1969 and Cumulative Supplements (1976 and 1978).

5. Department of Geography, University of Hawaii, Atlas of Hawaii, 1973.

6. City and County of Honolulu, "Flood Insurance Rate Map (preliminary) Island of Oahu," 1979.

7. Land Study Bureau, State of Hawaii, Detailed Land Classification - Island of Oahu, L. S. B. Bulletin No. 11, 1972.

8. J. A. Apostolos, W. R. Shoemaker, E. C. Shirley, Office of Transportation Laboratory, Division of Construction, California Department of Transportation, Energy and Transportation Systems, Final Report, December, 1978.

9. City and County of Honolulu, General Plan, Objectives and Policies, January 18, 1977.

10. Environmental Communications, Inc., "Revised Environmental Impact Statement for the proposed Waikane Residential Subdivision, Waikane, Koolaupoko District, Oahu," March, 1978.

11. Personal communications with Hawaiian Electric Company, July 1, 1980.

12. State of Hawaii, Department of Planning and Economic Development, The State of Hawaii Data Book 1979, A Statistical Abstract, November, 1979.

13. State of Hawaii, Department of Planning and Economic Development, State Energy Plan, A State Functional Plan Prepared in Accordance with Chapter 226, Hawaii Revised Statutes, February, 1980.

14. Park Engineering, letter dated February 6, 1980 to Robert Chuck, Manager-Chief Engineer, Division of Water and Land Development, Department of Land and Natural Resources.

15. Department of Land and Natural Resources, letter dated February 13, 1980 to Tyrone Kusao, Director, Department of Land Utilization, City and County of Honolulu.

APPENDICES

LIST OF APPENDICES

AIR QUALITY IMPACT STUDY
FOR THE PROPOSED
WATERFRONT MANOR PROJECT
Waiawa-Waipio, Ewa District, Oahu

Prepared by
Barry D. Root
Air Pollution Consultant
Kaneohe, Hawaii

REVISED
OCTOBER, 1980

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

I. PROJECT DESCRIPTION

The proposed Waterfront Manor project involves construction of 863 condominium units in five, high rise buildings on an 18.94-acre parcel of land located off Middle Loch, Pearl Harbor, as shown on Figure 1. The detailed preliminary site plan is shown on Figure 2.

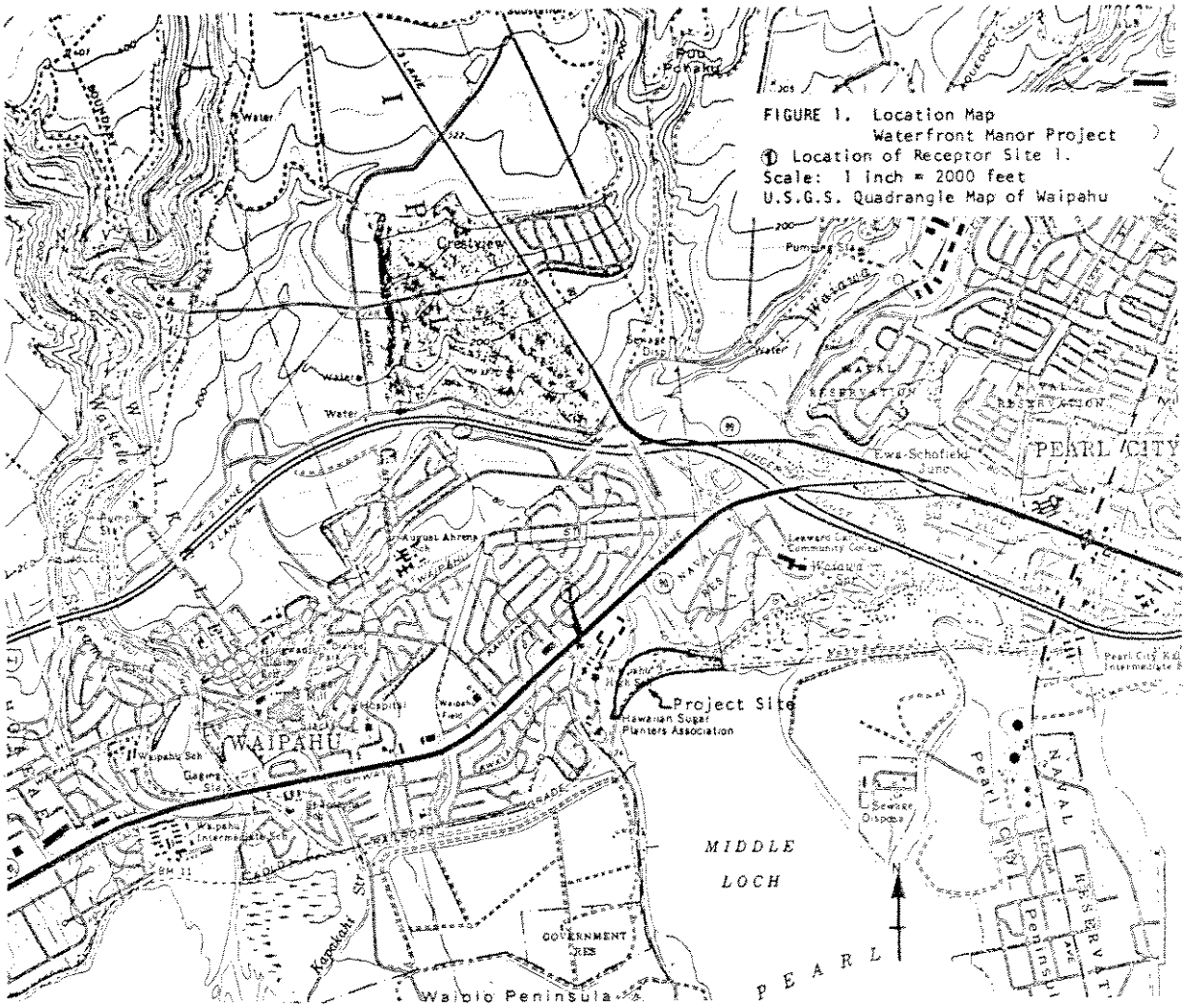
Development plans also call for construction of a 1,250-foot long, 40-foot access road connecting the project to the existing Waipio Access Road.

II. AMBIENT AIR QUALITY STANDARDS

State and/or Federal Ambient Air Quality Standards (AQS) have been set for seven classes of air pollutants as shown in Table 1. An AQS is a pollutant concentration not to be exceeded over a specified sampling period which varies from pollutant to pollutant. Each of the pollutants listed has the potential to cause some form of adverse health effect or to produce environmental degradation when present in sufficiently high concentrations. The Federal Air Quality Standards have been set at levels below which known adverse effects are expected to occur, but State of Hawaii Standards include an extra margin of safety designed to protect especially sensitive individuals or environments from possible adverse effects resulting from long-term exposure to low levels of these pollutants.

For suspended particulate matter, the Secondary Federal Standards refer to levels deemed necessary to preclude welfare impacts such as reduced visibility or property damage, while Primary Standards refer exclusively to adverse health impacts. For all the other pollutants, only Primary Standards apply.

In most cases, the State Standards are substantially more stringent than Federal limits (four times more stringent in the case of the one-hour Standard for carbon monoxide). Furthermore, the State Standards are even more stringent regarding the number of allowable annual violations. The Federal Standards are levels not to be exceeded more than once per year, while the State Standards apply to any exceedance of specified limits.



(Note to Reviewers: Figure 2 of this report is Figure 2, Site Plan, page 6 in the EIS document; Figure 3 in the Final EIS text shows the location of the carbon monoxide receptor sites.

TABLE 1

SUMMARY OF
STATE OF HAWAII AND FEDERAL AMBIENT AIR QUALITY STANDARDS

POLLUTANT	SAMPLING PERIOD	FEDERAL STANDARDS PRIMARY	FEDERAL STANDARDS SECONDARY	STATE STANDARDS
1. Suspended particulate matter	Annual Geometric Mean	75	60	-
(micrograms per cubic meter)	Annual Arithmetic Mean	-	-	55
	Maximum Average in any 24 hours	260	150	100
2. Sulfur Dioxide	Annual Arithmetic Mean	80	-	20
(micrograms per cubic meter)	Maximum Average in any 24 hours	365	-	80
	Maximum Average in any 3 hours		1300	400
3. Carbon Monoxide	Maximum Average in any 8 hours		10	5
(milligrams per cubic meter)	Maximum Average in any 1 hour		40	10
4. Hydrocarbons Non-methane	Maximum Average in any 3 hours		160	100
(micrograms per cubic meter)				
5. Ozone	Maximum Average in any 1 hour		240	100
(micrograms per cubic meter)				
6. Nitrogen Dioxide	Annual Arithmetic Mean		100	70
(micrograms per cubic meter)	Maximum Average in any 24 hours		-	150
7. Airborne Lead	Average Over 3 Months		1.5	1.5
(micrograms per cubic meter)				

Source: 40 Code of Federal Regulations, Part 50 and State of Hawaii Public Health Rule and Regulations, Chapter 42.

The AQS for airborne lead has just recently been adopted by the Federal government. Under the provisions of this Standard, the State of Hawaii is required to develop, adopt and implement a control plan to insure that the Standard will be met by 1982 and maintained thereafter.

III. EXISTING AMBIENT AIR QUALITY

At present the project site is vacant.

In terms of regulated air pollutants there are no clearly evident air quality problems at the project site. The State of Hawaii Department of Health has maintained an air quality monitoring station at the Pearl City Sewage treatment plant (about one mile east of the project site) since 1976. A summary of measurements is presented in Table 2. The 24-hour State of Hawaii AQS has been exceeded at the monitoring site only once (pollutant: particulate matter) in the last four years. This single violation was most probably associated with a sugar cane burning or harvesting operation. The monitoring site is close enough to the proposed project to be representative of the ambient air quality. It is thus possible that a similar violation of the particulate AQS may have occurred at the project site within the past four years. Sugar cane fields are burned just prior to harvest and the trucking of harvested cane over unpaved roadways can generate fugitive dust. These activities have the potential to produce ambient 24-hour concentrations of suspended particulates in excess of the allowable State of Hawaii AQS. Any given sugar cane field is burned only about once every two years and resulting ground-level smoke concentrations are greatly dependent upon prevailing meteorological conditions at the time of burning. From the available particulate sampling data it appears that the meteorological conditions necessary to allow cane burning emissions to create a problem in this area must be very rare.

The only significant sulfur dioxide generating source in the area is the Hawaiian Electric Company steam-electric generating plant in

TABLE 2

SUMMARY OF AIR QUALITY MEASUREMENTS
AT PEARL CITY MONITORING SITE

POLLUTANT	YEAR 1976	1977	1978	1979
Particulate Matter				
No. of Samples	71	54	60	58
Range of Values	16-83	22-111	20-81	20-48
Average Value	41	40	37	34
No. of times AQS exceeded	0	1	0	0
Sulfur Oxides				
No. of Samples	72	52	58	56
Range of Values	5-50	5-38	5-74	5-63
Average Value	5	5	15	9
No. of times AQS exceeded	0	0	0	0
Nitrogen Dioxide				
No. of Samples	22			
Range of Values	11-44			
Average Value	27			
No. of times AQS exceeded	0			

NOTES: Monitoring site located at Pearl City Sewage Treatment Plant about one mile east of proposed project site. All values in micrograms per cubic meter. Nitrogen dioxide sampling discontinued in April, 1976. All values are for 24-hour periods.

SOURCE: State of Hawaii Department of Health Records.

Waiau. The Pearl City monitoring site is closer to this source than the project site and sulfur dioxide levels at the monitoring site are well within allowable AQS. Sulfur dioxide should thus be of little concern at the project site.

Nitrogen dioxide measurements were discontinued at the monitoring site in April, 1976, but for the short period during which samples were collected ambient levels of this pollutant were also well within allowable limits.

Unfortunately, hydrocarbon concentrations are not routinely measured anywhere in the State of Hawaii and little is known about long-term levels of this pollutant in the vicinity of the project site.

The nearest carbon monoxide and ozone readings are collected at the Department of Health building in urban Honolulu. These values cannot be considered to be very representative of the levels likely to exist in this suburban project location. The values are included in this report as Table 3 mainly to point out that carbon monoxide readings in excess of the one-hour State of Hawaii AQS have been occurring on the order of 20 times per year during recent years in urban Honolulu, but that maximum readings are still only about one-half of the comparable Federal limit. The State of Hawaii AQS for ozone has been exceeded only once at this monitoring site during the past four years and not at all during the last three years.

Because carbon monoxide is mainly associated with vehicular emissions, its local concentrations depend upon nearby traffic volumes and operating characteristics and the diffusing effects of prevailing wind patterns. For this reason, existing carbon monoxide concentrations in the immediate area of the proposed project are best estimated through the use of a detailed atmospheric diffusion model. This analysis has been carried out and the results are presented in a later section of this report.

IV. AIR QUALITY IMPACT OF PROJECT CONSTRUCTION

During the construction phase of this project it is inevitable that a certain amount of fugitive dust will be generated by site clearing,

TABLE 3

SUMMARY OF AIR QUALITY MEASUREMENTS AT
DEPARTMENT OF HEALTH BUILDING - PUNCHBOWL AND BERETANIA STREETS, HONOLULU

	YEAR			
POLLUTANT	1976	1977	1978	1979
Carbon Monoxide				
No. of Samples	355	359	365	207
Range of Values	.5-24.2	0-19.6	0-20.7	0-17.3
Average Value	5.4	3.5	3.1	2.9
No. of times AQS exceeded	41	22	19	10
Oxidant (Ozone)				
No. of Samples	322	300	284	338
Range of Values	2-127	4-61	10-84	10-80
Average Value	40	25	33	39
No. of times AQS exceeded	1	0	0	0

NOTES: One-hour measurements. Carbon monoxide in milligrams per cubic meter, ozone in micrograms per cubic meter. Carbon monoxide sampling discontinued 9/79.

SOURCE: State of Hawaii Department of Health Records.

A-6

road construction, and building erection activities. Based on field measurements of such emissions from apartment and shopping center construction projects, an emission rate of 1.2 tons of dust per acre of construction per month of activity has been estimated. This assumes: (1) medium-level activity; (2) moderate soil silt content (about 30%); and (3) a semi-arid climate. In fact, it is nearly impossible to predict what fugitive dust emissions from any particular project are likely to be. Mitigative measures that can be employed to reduce fugitive dust emissions are discussed later in this report.

There are also likely to be some exhaust emissions from heavy construction equipment being used at the project site. These emissions should be minor compared to pollutant levels produced by normal traffic on Farrington Highway nearby.

Emissions from construction activities should be relatively short-lived. After construction, the dwelling units will require an input of electrical energy. This will cause some small increases in sulfur dioxide emissions at the supplying power plant, but such increases would be too small to detect.

The primary air quality impact of this project is likely to be as an indirect source, i.e., a site which causes increased vehicular traffic by creating a new point of origin and destination.

V. AIR QUALITY IMPACT OF INCREASED TRAFFIC

A. Mesoscale Emissions Analysis

Motor vehicles, especially those with gasoline-powered internal combustion engines, are prodigious emitters of carbon monoxide. They also emit significant quantities of hydrocarbons and nitrogen dioxide. Vehicles using fuel which contains lead as an additive can also create measurable concentrations of airborne lead.

Federal law now requires the use of unleaded gasoline in most new automobiles. Emissions of airborne lead should, therefore, be steadily decreasing as older, lead-producing vehicles are removed from the roadways. Federal control regulations also call for increased efficiency in removing carbon monoxide from vehicle exhausts. By 1995, carbon monoxide emission rates for the vehicles then operating should be less than half of present values. Substantial decreases in hydrocarbon and nitrogen dioxide emission rates have been mandated as well.

To gain an overview of the impact of the increased traffic likely to be generated by the Waterfront Manor project on total emission levels along Waipio Point Access Road, a mesoscale emissions analysis has been carried out. At present, about 571 vehicles travel in both directions along the one-quarter mile segment of Waipio Point Access Road adjoining the Waipahu High School grounds during the morning peak hours. The traffic impact study for the proposed project estimates an additional 544 vehicle trips will be generated during peak hour by the residents of Waterfront Manor. Since Waterfront Manor is not likely to be completed and fully inhabited until 1982 at the earliest, the comparative analysis starts at that date. By then, existing traffic volumes on Waipio Point Access Road are not expected to change from present levels. In fact, if Waterfront Manor is not constructed, Waipio Point Access Road traffic volumes are not expected to change appreciably by 1995. Once Waterfront Manor is fully occupied, peak hour traffic volumes generated by residents of the project would not be expected to change from the 544 trips predicted for 1982.

For comparison purposes, a standard set of vehicular emission factors (from Table F-18 of EPA's Mobile Source Emission Factors) is used. Assumptions are: (1) a vehicle mix containing 88.2 percent automobiles with 11.8 percent light duty trucks and vans; (2) average vehicle speed of 19.6 miles per hour; (3) all vehicles operating under 'cold start' conditions with ambient air temperatures of 75°F.

Results of the comparison are summarized in Table 4. There will clearly be an increase in vehicular emissions of carbon monoxide, hydrocarbons, and nitrogen dioxide along Waipio Point Access Road if Waterfront Manor is constructed as planned, but by 1995 the differences in hydrocarbons and nitrogen dioxide emissions with or without the project

TABLE 4

VEHICULAR EMISSIONS ANALYSIS
WAIPIO POINT ACCESS ROAD
MORNING PEAK HOUR TRAFFIC

YEAR		PEAK HOUR TRAFFIC VOLUME	CARBON MONOXIDE (Kilograms)	HYDROCARBONS (Kilograms)	NITROGEN DIOXIDE (Kilograms)
1982	With Waterfront Manor	1115	21.0	1.8	0.8
	No Contruction Alternative	571	10.5	0.9	0.4
1995	With Waterfront Manor	1115	10.8	1.0	0.6
	No Construction Alternative	571	5.4	0.5	0.3

will be quite small. The greatest impact of increased traffic from the project will obviously be in the form of increased carbon monoxide emissions.

Although Table 4 shows that some decrease in carbon monoxide emissions is expected by 1995 whether the project is constructed or not, it is not possible to compare these emissions directly to State and Federal AQS without carrying out a detailed microscale analysis of expected concentrations of this pollutant at selected critical receptor sites in the vicinity of the project site.

B. Microscale Carbon Monoxide Analysis

To evaluate expected concentrations of carbon monoxide resulting from increased traffic generated by the proposed project, a detailed diffusion modeling analysis was carried out.

Three critical receptor sites were selected for comparative purposes. Site 1 is along Waipio Point Access Road in front of Waipahu High School (Figure 1). When the wind blows from a northwesterly direction, emissions from the complex intersection with Farrington Highway will drift in this direction. Site 2 (Figure 2) was selected to assess the impact of the proposed new intersection of the road from Waterfront Manor and Waipio Point Access Road. Site 3 (Figure 2) is located to give an indication of the worst case impact of vehicles traveling along Waipio Point Access Road with and without the increased traffic from the proposed project.

Existing traffic volumes on the roadways was determined from the traffic impact study for this project. It was assumed that volumes on Waipio Point Access Road will not change significantly by 1982. In fact, since further development in the area (other than Waterfront Manor) does not seem likely, it was assured that without the proposed project, Waipio Point Access Road traffic volumes would not change significantly by 1995. On Farrington Highway traffic decreased substantially after the opening of the nearby Interstate Highway in the early 1970's, but since 1974 volumes have been increasing again. Extrapolation of the 1974 through 1977 growth rate yields an expected daily volume of 36,500 by 1982 and 40,500 by 1995. Using present peak

hour ratios (.06 for morning peak and .08 for evening peak) and existing directional splits forecast traffic volumes were assigned to each lane of Farrington Highway for both morning and evening rush hours in 1982 and 1995. From the traffic consultant's report, peak hour volumes associated with the proposed Waterfront Manor will be 544 vehicle trips of which 398 will be in the peak direction and 146 in the off-peak direction. These values were assumed for both 1982 and 1995.

Vehicular carbon monoxide emission rates for 1982 and 1995 were determined using a Federal Highway Administration tabulated version of the Environmental Protection Agency's Computerized Mobile Source Emissions Model (MOBILE 1). The vehicle mix on Farrington Highway is 89% automobiles, 7% light-duty trucks less than 6,000 pounds gross vehicle weight (GVW), 2% light-duty trucks between 6,000 and 8,000 GVW, 1% heavy duty gasoline trucks and 1% heavy duty diesel trucks and buses. On Waipio Point Access Road the percentage of autombiles is assumed to be a bit higher (91%) and the percentage of light-duty trucks is decreased to 5. Traffic from the Waterfront Manor complex after 1982 will consist mostly of resident vehicles and the mix is expected to be 93% automobiles with the rest light-duty trucks. No change in these vehicle mix ratios are assumed between 1982 and 1995.

On Farrington Highway morning and evening rush hour vehicle speeds were assumed to be 35 mph when vehicle flow was not impeded by a traffic signal. Vehicle speed upstream from red lights was assumed to be 5 mph. A speed of 15 mph was used for downstream traffic. Left turn lanes were assumed to restrict traffic speeds to 5 mph throughout the signal cycle. The green to cycle ratio at the light on Farrington Highway near receptor Site 1 is 0.8 for the Farrington Highway traffic. On Waipio Point Access Road vehicle speeds were assumed to be 15 mph near the Farrington Highway intersection and 25 mph near Sites 2 and 3 without traffic from the proposed Waterfront Manor. With the increased traffic from Waterfront Manor peak hour vehicle speeds on Waipio Point Access Road are reduced to 15 mph. The proposed new road from Waterfront Manor is assumed to have only a stop sign at its intersection with Waipio Point Access Road, and traffic upstream from the stop sign is assumed to move at 5 mph during peak hour while traffic in the downstream direction should move at 15 mph.

Vehicles leaving Waterfront Manor are assumed to be operating under 100% cold start conditions during both morning and evening rush hour. Arriving vehicles are assumed to have only a 10% cold start component. On Waipio Point Access Road 50% of the vehicles are likely to be operating under cold start conditions in the morning, while only 20% would be doing so in the evening. For Farrington Highway cold start percentages were assumed to be 20 in the morning and 10 in the evening. Morning rush hour temperature is 60°F, while the evening rush hour temperature is 80°F.

For the most part, this combination of vehicle mix and operating characteristics was selected to be as conservative as possible. It is likely, for example, that vehicle speeds could be higher than those assumed. It is also assumed that none of the automobiles are diesel-powered, while some estimates indicate that as much as 20 percent of the vehicle mix could be diesels by 1995. Diesel vehicles emit substantially less carbon monoxide than gasoline-powered vehicles.

The EPA computer model HIWAY of the UNAMAP series was used to compute resulting carbon monoxide concentrations at each of the receptor sites. Stability Category E was used for morning rush hour conditions, while Category D was assumed for the evening.

For 1982, a background carbon monoxide concentration of 1.0 mg/m^3 was added to computed values to account for emissions from sources more distant than those directly considered. For 1995, this background value was decreased to 0.5 mg/m^3. Eight-hour values were estimated by computing the average of the morning and evening peak hour concentrations and applying an EPA suggested meterological persistence factor of 0.6 to the result.

Results of the calculations are presented in Table 5. At Site 1 a persistent northwesterly wind could cause State of Hawaii AQS to be exceeded during morning rush hour and for an eight-hour average time period if the project is constructed as planned. As shown in Figure 3, however, northwest winds are not very common at this location.

At Site 2 there is a small chance that light northerly winds could cause morning peak hour concentrations in excess of the State of Hawaii one-hour AQS under very stable conditions in 1982 with the project. Northerly winds are not very prevalent in this area, however,

TABLE 5

RESULTS OF MICROSCALE CARBON MONOXIDE ANALYSIS
(milligrams per cubic meter)

SITE	CONFIGURATION	1982 A.M. PEAK	1982 P.M. PEAK	1982 8-HR	1995 A.M. PEAK	1995 P.M. PEAK	1995 8-HR
1	Without Project	6.9	6.3	4.0	2.9	2.6	1.7
	With Project	10.4	9.3	5.9	4.2	4.1	2.5
2	Without Project	5.2	2.4	2.3	2.3	1.0	1.0
	With Project	15.9	9.3	7.6	7.2	3.1	3.1
3	Without Project	4.9	2.9	2.3	1.9	1.2	.9
	With Project	24.0	10.5	10.4	10.4	3.9	4.3

	1 HR	8 HR
State of Hawaii AQS	10	5
Federal AQS	40	10

NOTE: See Figures 1 and 2 for location of receptor sites.

(See Figure 3) and this site is located in an unpopulated area. The site was selected to evaluate maximum impact of the proposed new intersection. It is equidistant from the intersecting roadways, but over 200 meters from the nearest dwellings. At that distance concentrations would be only 20 percent of values computed for Site 2.

Site 3 is located immediately adjacent to Waipio Point Access Road and a light northeasterly wind blowing at an angle of just 10 degrees to the roadway (i.e. nearly parallel) could create morning peak hour concentrations in excess of allowable State of Hawaii AQS in 1982 when the increased traffic from Waterfront Manor is added to existing traffic under least favorable stability conditions. Even by 1995 computed morning peak hour carbon monoxide levels at this site are above the State of Hawaii peak hour standard. This location is also uninhabited, however, and predicted pollutant concentrations decrease exponentially as the receptor site is moved further from the roadway. At a distance of 20 meters from the edge of the road, these predicted values decrease to 65 percent of the level shown in Table 5.

It is also important to note that even under the worst case traffic and meterological conditions assumed for the analysis, computed, carbon monoxide levels at all sites are within the limits set as Federal AQS whether the project is constructed as planned or not.

VI. MITIGATIVE MEASURES

As stated earlier, the only direct emission of air pollutants that this project is likely to create is fugitive dust associated with construction activities. State of Hawaii Department of Health Rules and Regulations (Chapter 43, Section 10) stipulate control measures that are to be employed to reduce this type of emission. Primary control consists of frequent wetting down of loose soil areas with water, oil or suitable chemicals. An effective watering program can reduce particulate emissions from construction sites by as much as 50 percent. Other control measures include good housekeeping on the job site and possibly, erection of dust catching barriers if nearby local residents are being subjected to suspended particulate levels more than 150 micrograms per cubic meter above existing background levels (as measured on a 12-hour basis).

LEGEND

1. HONOLULU INT'L AIRPORT (NWS)
2. BARBERS POINT (NAVY)
3. MAKAKILO (UNIV. OF HAWAII)
4. MAUNA KAPU (UNIV. OF HAWAII)
5. KAHE PLANT (HECO)

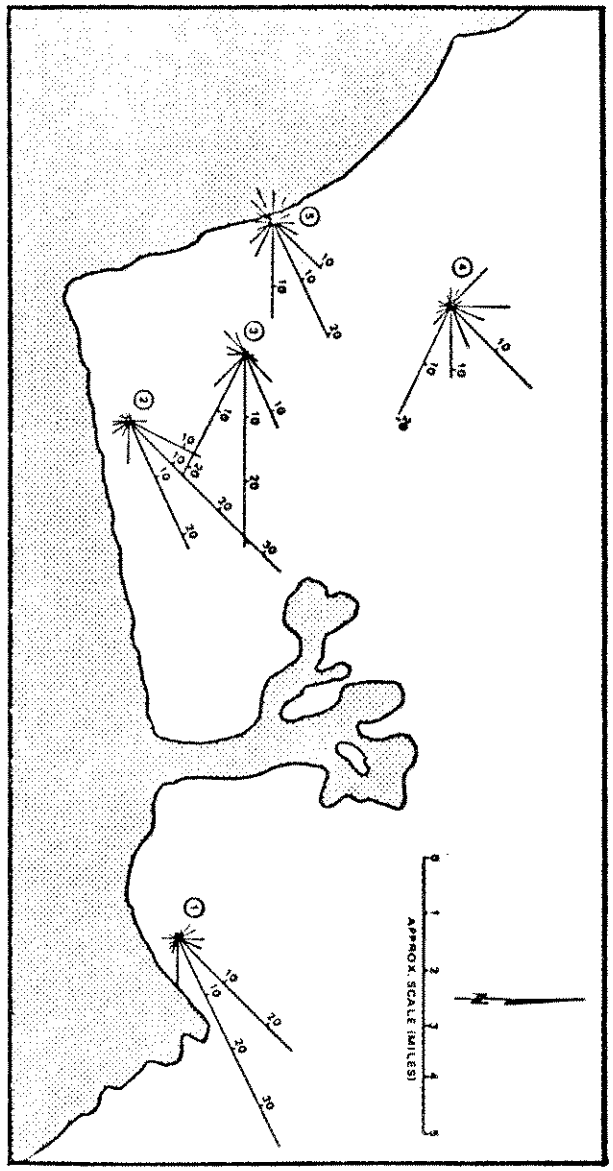


FIGURE 3
MEAN WIND DIRECTION
FREQUENCIES OF OCCURRENCE (%)
OAHU, HAWAII

Emissions from vehicles traveling on roadways in the project vicinity can be decreased if (1) the emission rate for each vehicle is decreased, (2) the total number of vehicles operating is decreased, or (3) the roadway configuration is altered to permit vehicle movement at more rapid rates of speed with as little time as possible spent in queues with engines idling.

At present, an individual developer can do little to decrease emission rates from individual vehicles. Federally-mandated controls on emissions from new vehicles produced during the next few years will become more and more effective as older vehicles are removed from the vehicle fleet, but the impact of these controls will not be fully achieved until 1995.

It is always possible to build fewer units in order to reduce the amount of the traffic going to and from the project, but the microscale carbon monoxide analysis carried out in this study indicates that most State and Federal AQS can be met by 1995 with no change in present construction plans. Any delay in project completion date would serve to further decrease the expected air pollutant emissions associated with project traffic. A State program of mandatory vehicle emissions inspections could also serve to encourage vehicle owners to maintain vehicles in such a way that lowered emission rates could be sustained over the years, but at present no such program exists.

The only potential mitigative alteration to the proposed roadway configuration would be at the intersection of the new road from Waterfront Manor and Waipio Point Access Road. If a right turn lane with a yield sign is constructed instead of a right lane intersection with a stop sign, then morning traffic leaving Waterfront Manor will be able to proceed as expeditiously as possible with a minimum of queuing. A change in vehicle speeds from 5 mph to 15 mph under morning cold start conditions can reduce individual vehicle emissions from 275 grams of carbon monoxide per mile traveled to 42 grams per mile using 1982 emission rates.

By including tall and dense vegetation as a part of project plans (Figure 2), the developer is helping to mitigate the impact of air pollutants upon future residents of Waterfront Manor, since trees and shrubs do have a certain capacity to remove some carbon monoxide and particulate matter from the air.

Finally, vehicular emission estimates contained in this study do not take into consideration the distinct possibility that future gasoline shortages may encourage reduced vehicle use and stimulate auto manufacturers to proceed in new directions to create smaller, more fuel-efficient, cleaner vehicles. Increased research could also result in the production of propulsion systems which create few or none of the air pollutants that are presently of concern.

VII. SUMMARY

The major points of this study are summarized as follows:

1. With the possible exception of carbon monoxide, existing ambient air quality in the proposed project area is well within allowable limits set as Federal and State of Hawaii Air Quality Standards.

2. The only direct emission of air pollutants from the proposed project will be in the form of fugitive dust from construction operations. These emissions are likely to be both short-lived and easy to control.

3. Indirectly, traffic from the project will increase emissions of carbon monoxide, hydrocarbons, nitrogen oxides, and airborne lead in the project area. Of these, carbon monoxide, will be the primary concern.

4. Detailed microscale carbon monoxide modeling analysis for three selected critical receptor sites along Waipio Point Access Road indicates that in 1982 the increased morning rush hour traffic generated by Waterfront Manor could cause peak hour carbon monoxide concentrations in excess of allowable State of Hawaii Standards at two of the three sites. By 1995, implementation of Federally-mandated vehicle emission controls should cause these predicted values to be reduced to levels below or near the allowable State Standards. All carbon monoxide concentration computations assumed worst case traffic levels and meteorological dispersion conditions.

5. Emissions from vehicles traveling in the vicinity of the project can be reduced by decreasing individual vehicle emission rates, decreasing the total number of vehicles, or altering roadway configurations to speed vehicle flow. One possible mitigative measure regarding this project would be to provide a right turn lane for vehicles entering Waipio Point Access Road from the Waterfront Manor. This would allow morning rush hour traffic to move along as expeditiously as possible and lower vehicular emission rates.

6. Vehicular emission estimates contained in this study do not consider the impact of future gasoline shortages. Reduced vehicle use and the introduction of less-polluting vehicles into the vehicle fleet could greatly mitigate the potential air pollution impact of the proposed project.

REFERENCES

1. Environmental Communications, Inc., Environmental Assessment for the Proposed Waterfront Manor Project, August, 1979.

2. Au, Henry T., Traffic Impact Statement for Waterfront Manor , May, 1980.

3. U.S. Environmental Projection Agency, Office of Air Planning and Standards, Compilation of Air Pollutant Emission Factors, August, 1977.

4. U.S. Environmental Projection Agency, Office of Air and Waste Management, Mobile Source Emission Factors, March, 1978.

5. U.S. Environmental Protection Agency, Office of Air, Noise and Radiation, User's Guide to MOBILE 1: Mobile Source Emissions Model, August, 1978.

6. Federal Highway Administration, Office of Environmental Quality Control, Noise and Air Quality Branch, Tabulation of Selected Low Altitude Emission Factors Based on EPA's Mobile Source Emission Factors dated March, 1978, September, 1978.

7. U.S. Environmental Protection Agency, National Environmental Research Center, Office of Research and Development, User's Guide for HIWAY, a Highway Air Pollution Model (by John R. Zimmerman and Roger S. Thompson), February, 1975.

8. U.S. Environmental Protection Agency, Office of Air and Waste Management, Office of Air Quality Planning and Standards, Guidelines for Air Quality Maintenance Planning and Analysis Volume 9: Evaluating Indirect Sources, January, 1975.

TRAFFIC IMPACT STATEMENT

FOR

WATERFRONT MANOR
WAIPAHU, WAIPIO PENINSULA

TAX MAP KEY 9-4-08-23

Prepared By

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33 S. King Street
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October 1980

A-13

TABLE OF CONTENTS

ILLUSTRATIONS

TABLES

SUMMARY

1. The proposed Waterfront Manor project is located within the Waiawa-Waipio area of the Ewa District of Oahu. The 18.942 acre property, identified by Tax Map Key 9-4-08-23 is in the rear of Waipahu High School and within one-fourth mile from Leeward Community College.

2. The proposal is to develop a condominium complex consisting of five (5) 10-story buildings for a total of 863 dwelling units, to include a recreational center, private internal roadways, open spaces, ponds, pedestrian walkways, landscaping, a 56 foot access road and 1,337 parking spaces for the residents and guests.

3. The energy crisis and with it the rising cost of transportation will restrict the size and use of the automobile and curtail the mobility of the general public. Changes in the mode of travel have already taken place. There is now throughout the United States and Hawaii increasing dependence on the use of public transportation.

4. The major highway system serving the project consists of Farrington Highway, Interstate Route H-1 and Interstate Route H-2. Waipio Access Road serves as the primary access to the development. Within the development, a 56 foot access road will be constructed to connect with the existing Waipio Access Road.

5. In 1965, the traffic volume on Farrington Highway at the Oahu Sugar Co. Road Overcrossing (Station C-8-G) in the vicinity of Waipio Point Access Road was only 25,224 cars. The highest traffic volume occurred in 1971, with a volume of 37,764 cars. Beginning in 1972 and even until the latest traffic count taken in 1977, traffic volumes consistently showed a decrease from its high volume of 37,764 in 1971, stabilizing at approximately 35,011 cars.

6. Interstate Highway Route H-1 has diverted a significant volume of through traffic not only from the local streets, but also from such major highways as Farrington Highway through the Waipahu District and from Kamehameha Highway through Pearl City, Waiau, Waimalu and beyond. With this diversion of through traffic, there will be excess capacity on both Farrington Highway and Kamehameha Highway.

7. The 863 dwelling units of the project will generate a 24 hour volume of 4,531 trips and a peak hour volume of 544 trips.

8. Using a 73 per cent/27 per cent directional distribution of the 544 peak hour volume of the project, approximately 397 vehicles will be added to the peak hour volumes in the heavy direction on Farrington Highway. The peak hour flow of an additional 397 vehicles in the heavy direction is considerably less than the capacity of a local street. As a comparison, the capacity of a local street with a 44 foot right of way, with no parking and at grade intersection is approximately 600 vehicles per hour in one direction and 900 for both directions of travel.

9. The projected 1990 peak hour volume in the heavy direction on Farrington Highway, including the 397 vehicles from the Waterfront Manor project, will total 2,240 vehicles per hour, whereas the capacity of Farrington Highway is 2,550 vehicles per hour. The 1990 peak hour volume of 2,240 vehicles, therefore, is less than the capacity of Farrington Highway. With such excess capacity, Farrington Highway will be more than adequate to accommodate future traffic demands beyond 1990 and in all probability to the year 2000 but at Level of Service E, at a lane capacity of between 1,500 to 1,600 vehicles per hour.

10. Public mass transportation service is available on Farrington Highway to serve the project. However, mass transportation was considered only as a possible mitigating factor which may mitigate in the future the adverse consequences of traffic and improve the traffic flow on the highway and street systems.

11. In accordance with the Comprehensive Zoning Code, 1,337 parking spaces will be provided for the condominium complex with its 863 dwelling units.

12. Analyzing the various factors, it may be concluded that the proposed development will not add substantially to the traffic problems to create an adverse impact. The project will make possible the achievement of desirable social and economic improvements for the area.

DESCRIPTION OF PROJECT

The proposed Waterfront Manor project is located within the Waiawa-Waipio area of the Ewa District of Oahu. The site is crescent-shaped measuring approximately 2,000 feet long and 375 feet at its widest point, and although the property fronts the shoreline of the Middle Loch of Pearl Harbor, it actually is separated from the shoreline by a 40 foot wide lot owned by Hawaiian Electric Company as shown in the site location map, Plate 1. The 18.942 acre property, identified by Tax Map Key 9-4-08-23 is in the rear of Waipahu High School and within one-fourth mile from Leeward Community College. The project location map, Plate 2, outlines its relation to the highway system and the neighborhood.

The proposal is to develop a condominium complex consisting of five (5) 10-story buildings for a total of 863 dwelling units. Of the 863 dwelling units, 682 will be 1-bedroom units, 181 of 2-bedroom units. The complex will also include the following:

1) A recreational center in the approximate center of the site, with tennis courts, a swimming pool, gym, basketball courts and pavilions, for private use of the residents and their guests.

2) Private internal roadways for circulation and access to the five buildings and recreational areas.

3) Open spaces, ponds and pedestrian walkways for passive recreational activities.

4) Landscaping along the roadways and parking areas.

5) A 56 foot access road that will be connected to the existing Waipio Access Road. This 56 foot roadway will be constructed according to City and County standards for dedication to the City and County of Honolulu.

6) A total of 1,337 parking spaces.

The property is designated "Urban" under the State Land Use District and "Medium Density Apartment" under the General Plan of the City and County of Honolulu. The existing zoning of the property, however, is AG-1 Restricted Agricultural District, except for a small portion of the property lying between Waipio Point Access Road and Cane Haul Road consisting of approximately one acre which is zoned R-6 Residential District. A change in zoning to A-2 Apartment District will be requested for the development of the proposed condominium complex.

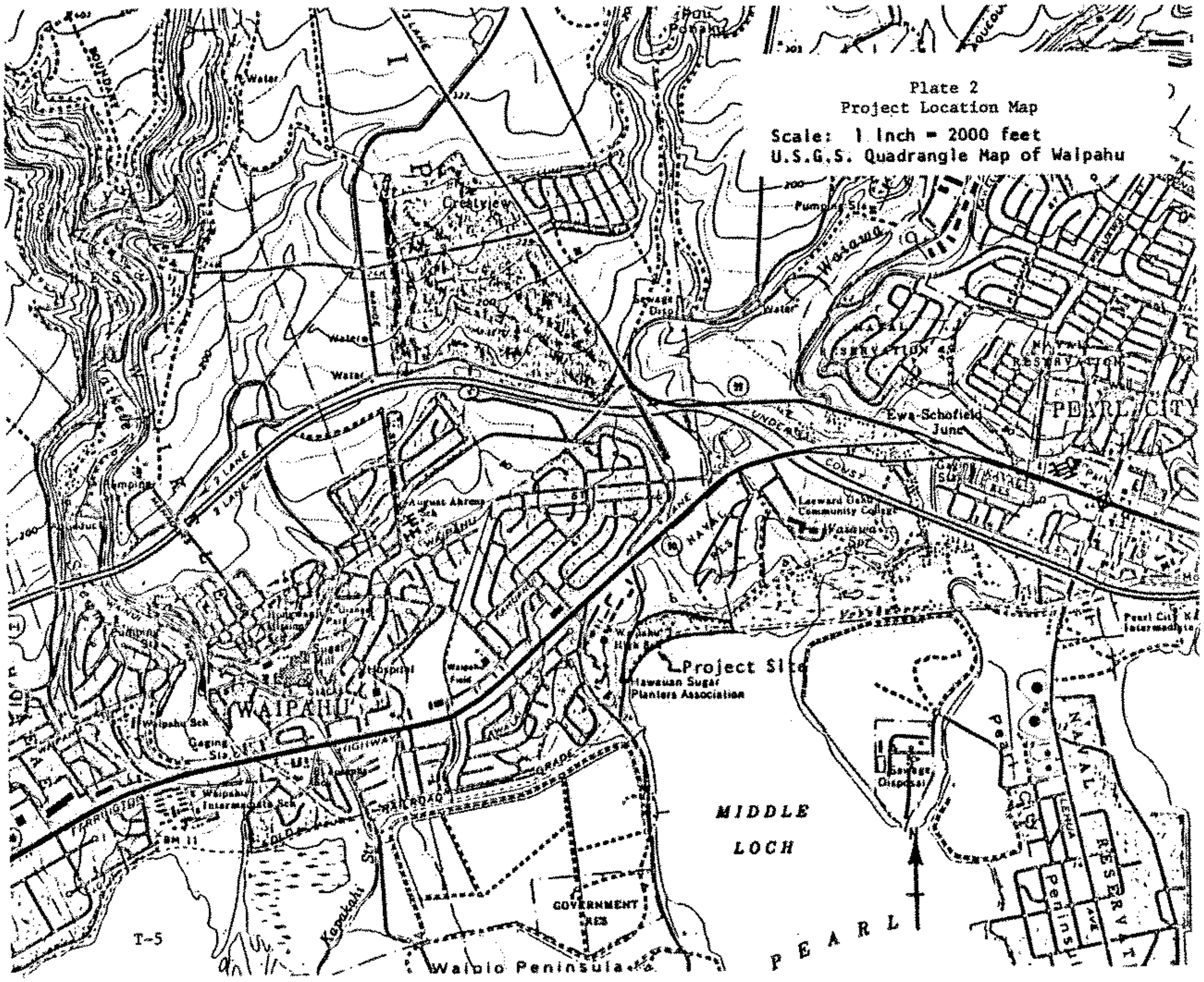


Plate 2
Project Location Map
Scale: 1 Inch = 2000 feet
U.S.G.S. Quadrangle Map of Waipahu

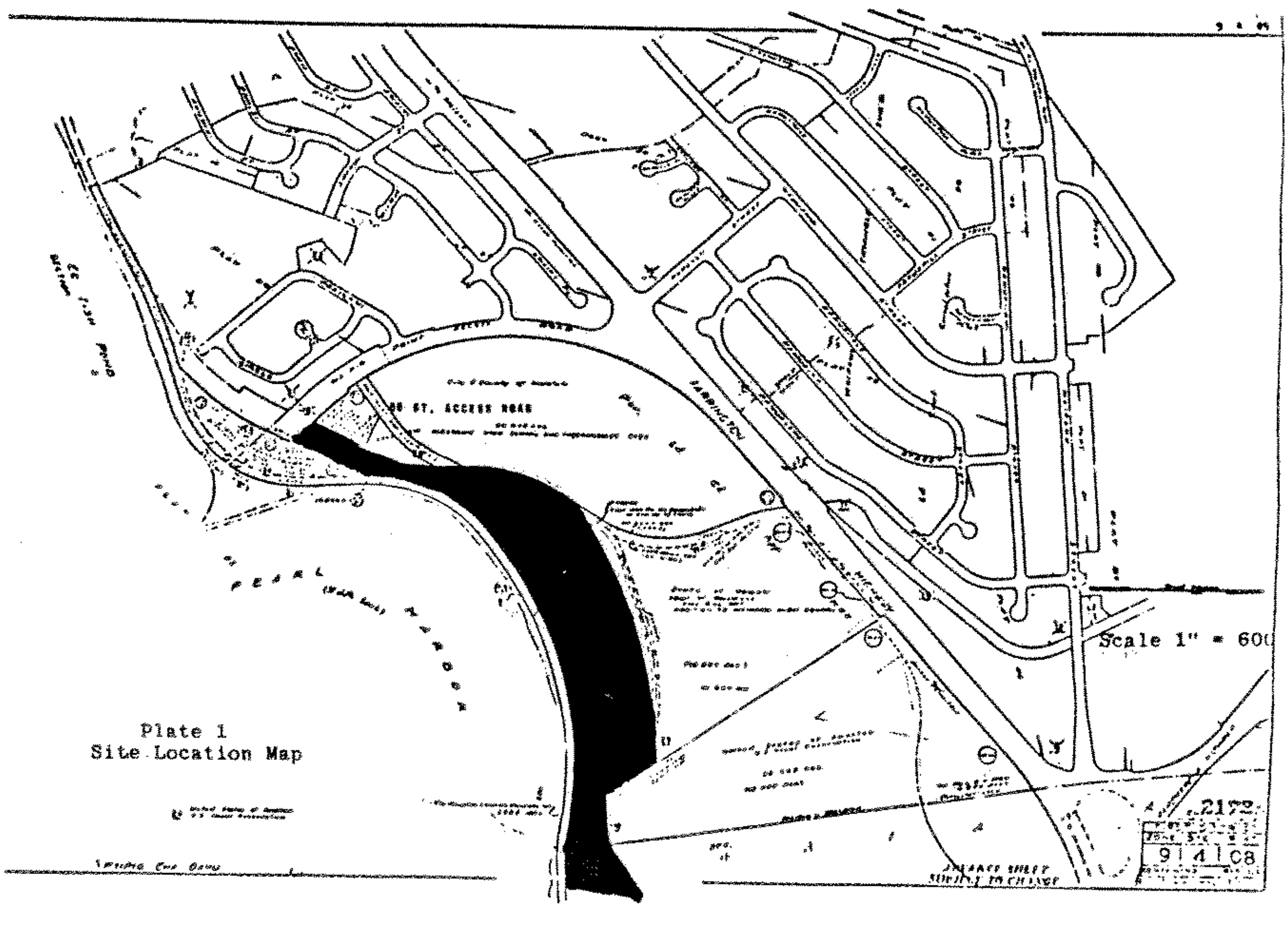


Plate 1
Site Location Map

INTRODUCTION

Any plan for community development must have sound social and economic objectives. Social, aesthetics and other values play a role in the pattern of development and the physical growth of a community must include improvements to the aesthetics, the general environment and to the social and economic welfare of the area affected by the project.

In the presence of an unusally high demand for housing, residential development opportunities will be created and attempts must be made to balance the need for an economically feasible supply of housing. Thus, planning for people and their basic necessity for housing is just as important as planning to improve the quality of human environment.

The impact of traffic on the environment can be severe and is one of the most controversial issues. However, with the aid of well conceived plans, based on sound economic principles and with a high social purpose, a residential development can be made to enhance the aesthetics, environment and economic aspects of the neighborhood and provide a service to the community with a minimum disruption of environmental activities.

This report is made to analyze and evaluate the traffic impact of the proposed development on the highway system, the neighborhood and the community.

ENERGY CRISIS AND CHANGES IN THE MODE OF TRAVEL

Prior to the expanded use of the automobile as a means of personal transportation, work trips and school trips were made on foot, bicycle or public transportation. The energy crisis and with it the rising cost of transportation will restrict the size and use of the automobile and curtail the mobility of the general public. Changes in the mode of travel have already taken place. There is now throughout the United States and Hawaii increasing dependence on the use of public transportation due to traffic congestion and the high cost of energy.

City and traffic planners must become aware of the changes in the mode of travel. Social and recreational trips will gain in importance and the significance of work and school travel in the future traffic pattern requires that the planner be able to evaluate the effects of such changes. The energy crisis, the planning of cities for higher densities and more open spaces and changes in urban design for less dependence of the automobile should bring about considerable relief to our present traffic problems.

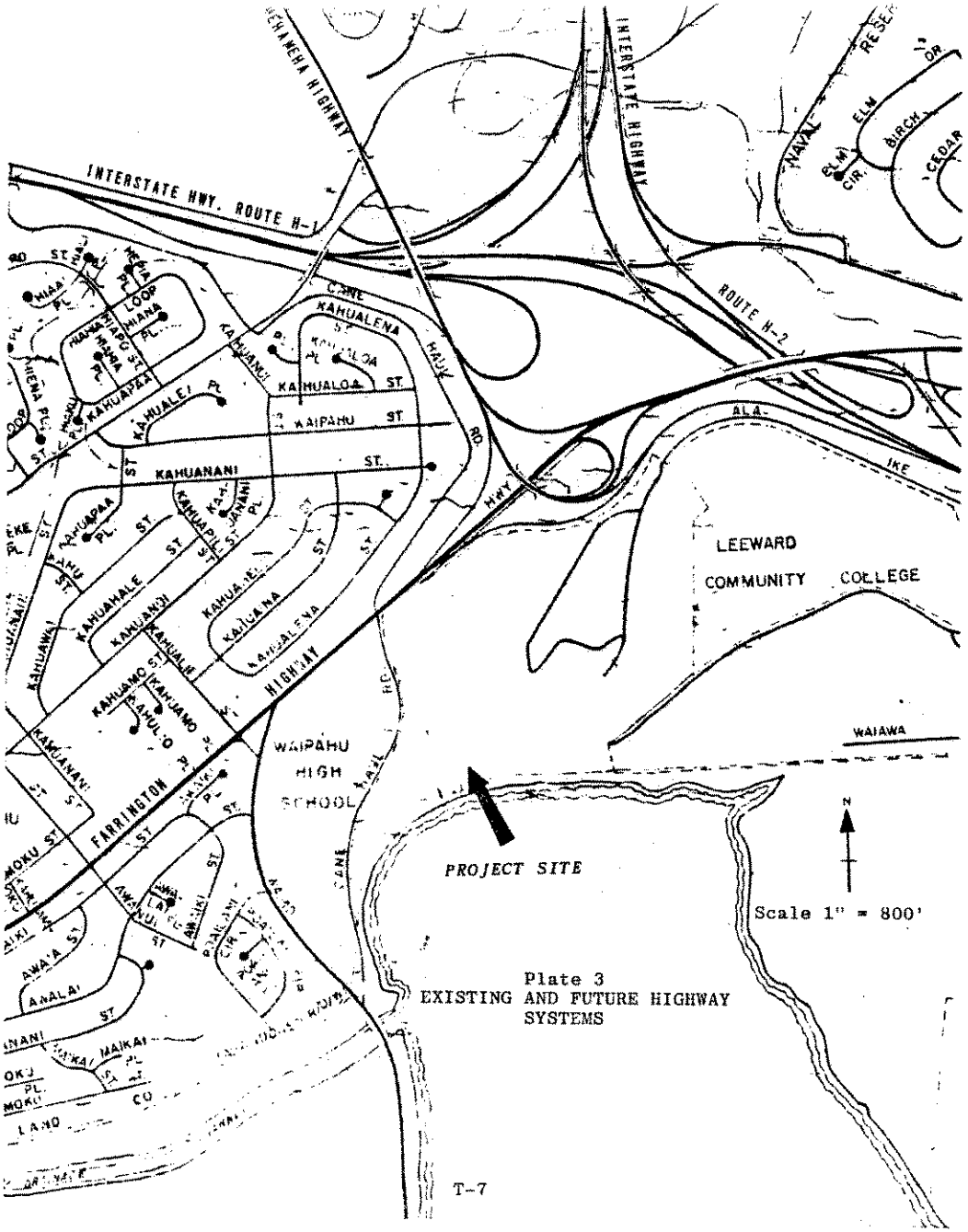


Plate 3
EXISTING AND FUTURE HIGHWAY SYSTEMS

The impact of change due to the energy situation is mentioned to stress and to call attention to the beneficial effects relative to transportation that may be derived from the energy crisis. To assure that a sufficient margin of safety is built into the analysis, the traffic volumes were projected as if no energy crisis existed. Motor vehicle registration and traffic volumes were assumed to continue to increase.

EXISTING AND FUTURE HIGHWAY SYSTEMS

The existing highway system serving the project is shown in Plate 3. The Interstate highways are the more important highways and are high capacity divided highways with limited access, designed to move large volumes of traffic. These expressways have an important role in diverting through traffic not only from the major thoroughfares and local streets, but also from major arterials, such as Farrington Highway.

As shown on the plan, the major highway system serving the project consists of Farrington Highway, Interstate Route H-1 and Interstate Route H-2. Waipio Access Road serves as the primary access to the development. Within the development, a 56 foot access road will be constructed to connect with the existing Waipio Access Road. This roadway will be constructed in accordance with City and County standards for dedication to the City and County of Honolulu.

The future highway system is the same as the existing highway system, since projected future traffic volumes do not indicate serious traffic service deficiencies. The proposed site for the condominium development, therefore, is well located with respect to access routes from several directions.

TRAFFIC VOLUMES

Traffic volume information and data were obtained from the report "Traffic Summary, Island of Oahu 1973" of the State Department of Transportation and from the latest traffic volume counts collected by the Department. The "Traffic Summary" is a digest of current and historical data relative to vehicular traffic and travel and includes a tabulation of the average daily traffic counts at selected stations. Traffic volumes are collected annually, making it possible to compare and analyze the growth trends of traffic on the various sections of the highway system.

Table 1
Average Daily Traffic
Farrington Highway At Oahu Sugar Co. Road Overcrossing
Station C-8-G

Year	Station C-8-G Farrington Highway At Oahu Sugar Co. Road Overcrossing Average Daily Traffic
1990	
-	
1979	
1978	
1977	35,011
1976	35,079
1975	34,402
1974	34,146
1973	34,315
1972	36,240
1971	37,764
1970	-
1969	-
1968	36,123
1967	30,893
1966	26,795
1965	25,224
-	-
1960	14,811

PEAK HOUR VOLUMES

	A. M. PEAK			P. M. PEAK		
Year	Honolulu Direction	Ewa Direction	Total	Honolulu Direction	Ewa Direction	Total
1977	1,025	966	1,991	1,153	1,719	2,872
1976	1,303	657	1,960	1,093	1,676	2,769
1975	1,654	460	2,114	-	-	-
1974	1,051	1,107	2,158	1,061	1,713	2,774

Table 1 shows the past and present traffic volumes for the years 1965 to 1977 on Farrington Highway at the Oahu Sugar Co., Road overcrossing (Station C-8-G) in the vicinity of Waipio Point Access Road. Waipio Point Access Road serves as the primary access to the proposed development. In 1965, the traffic volume on Farrington Highway at Station C-8-G was only 25,224 cars. The highest traffic volume at Station C-8-G occurred in 1971, with a volume of 37,764 cars. Beginning in 1972 and even until the latest traffic count taken in 1977, traffic volumes consistently showed a decrease from its high volume of 37,764 in 1971, stabilizing at approximately 35,000 cars. In 1977, the average daily traffic was 35,011 cars.

Analysis of the traffic volume changes draws attention to the fact that whenever street improvements are constructed, redistribution of traffic movements occurs, especially upon the completion of major arterials. Thus, the Interstate Highway Route H-1 has diverted a significant volume of through traffic not only from the local streets, but also from such major highways as Farrington Highway through the Waipahu District and from Kamehameha Highway through Pearl City, Waiau, Waimalu and beyond. With this diversion of through traffic, there will be excess capacity on both Farrington Highway and Kamehameha Highway.

For the purpose of assessing the traffic problem at the intersection of Waipio Point Access Road and Farrington Highway, turning movement counts were conducted at the intersection on Monday, October 15, 1979. Other information relative to Waipio Point Access Road, such as width of pavement and parking on the roadway by students of Waipahu High School were also obtained at the time of the survey.

Turning Movements

The turning movements from and into Waipio Point Access Road are shown in Table 2. As indicated in Table 2, the turning movements are very light (less than 200 per hour in a particular direction) and are due primarily to students going to and from school. Surprisingly, quite a few parents drive their children to school and then return home. This accounts for much of the left turns (Movement 1) from Waipio Point Access Road to Farrington Highway. In fact, Movement 1 is a combination of Movement 4 and Movement 1. Coming from Waipahu, these parents make a right turn (Movement 4) to Waipio Point Access Road and at Waipio Point Access Road they make a U turn for Movement 1.

The intersection, which is actually the extension of Kahualii Street to connect with Waipio Point Access Road, is controlled by a traffic signal. In fact, there is a separate signal phase for the left turns (Movement 3) from Farrington Highway into Waipio Point Access Road. With traffic signal controls, the left turns can be made with relative ease and safety and therefore, do not create a traffic problem. The right turns, Movements 2 and 4 present even less of a problem.

Pavement Width

For the section of the roadway from Farrington Highway to the entrance of Waipahu High School located at the intersection of Awalai Street, the pavement width of Waipio Point Access Road is 36 feet, with two 12 foot lanes, one in each direction, marked for the movement of traffic. The remaining 12 foot pavement is cross-hatched and set aside for a school bus loading zone. The traffic sign erected to indicate the bus loading zone imposes the following restrictions: Bus Loading Zone; 7:00 - 8:00 A.M.; 2:00 - 3:00 P.M.; School Days Only. The pavement width for the remainder of Waipio Point Access Road is 20 feet. There are no paved sidewalks on this roadway.

Parking On Roadway

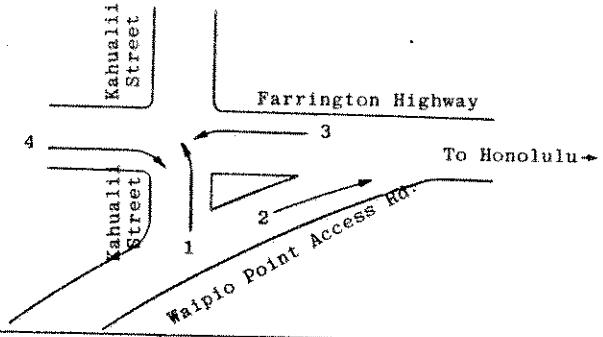
The majority of the students who park on the roadway park on the pavement set aside for the bus loading zone. Since parking is restricted during the time school buses are loading and unloading, the students do not park during these hours. During the morning, school buses complete their loading by approximately 7:35 A.M. Shortly thereafter, the students begin to use the space for parking. During the afternoon when school buses must again use the space, the parking is completely removed. The parking on the roadway is orderly, does not interfere with the movement of traffic and there is no scrambling for a parking space. Therefore, the parking of vehicles on Waipio Point Access Road by students of Waipahu High School does not create a traffic problem.

TRAFFIC SIGNALS

The developers have agreed with Oahu Sugar Company to install traffic lights on the 56 foot access road and to install an inductance loop so that whenever a vehicle on the Cane Haul Road approaches the intersection, traffic on the 56 foot access road will be required to stop.

The installation of traffic signals at the intersection may be considered a safety measure to prevent accidents by cane haul trucks with other vehicles and pedestrians. However, since the safety aspect alone may not warrant the installation of a traffic signal, an alternative remedy would be the installation of a flashing yellow beacon to indicate the approach of cane haul trucks. The flashing beacon will operate only during such times that cane haul trucks are using the Cane Haul Road, thus, providing protection for the cane haul trucks as well as for other vehicles and pedestrians. The type of signal to be used will be as approved or recommended by the Department of Transportation Services.

Table 2
Turning Movement Counts - 1979
Waipio Point Access Road At Farrington Highway



Time	NUMBER OF VEHICLES			
	Movement 1	Movement 2	Movement 3	Movement 4
7:00 - 7:15 A.M.	5	24	17	12
7:15 - 7:30 A.M.	13	15	36	21
7:30 - 7:45 A.M.	11	38	66	51
7:45 - 8:00 A.M.	13	47	62	91
8:00 - 8:15 A.M.	15	30	25	37
8:15 - 8:30 A.M.	9	26	22	16
8:30 - 8:45 A.M.	4	17	17	6
8:45 - 9:00 A.M.	5	15	20	13
3:00 - 3:15 P.M.	13	43	18	16
3:15 - 3:30 P.M.	11	30	21	7
3:30 - 3:45 P.M.	8	37	14	12
3:45 - 4:00 P.M.	7	25	40	12
4:00 - 4:15 P.M.	3	24	19	14
4:15 - 4:30 P.M.	6	23	32	13
4:30 - 4:45 P.M.	9	28	15	8
4:45 - 5:00 P.M.	7	12	25	13
5:00 - 5:15 P.M.	7	10	17	8
5:15 - 5:30 P.M.	5	11	17	9
A.M. Peak Hour Volume	52	130	189	200
P.M. Peak Hour Volume	39	135	106	47

TRAFFIC GENERATION

Trip generation data or the number of trips generated by the project will make it possible to determine whether significant adverse effects will be produced on the highway system, the neighborhood and the community. This data may also be considered in relation to air quality and traffic noise.

It is a known fact that the dwelling unit is the primary origin of all traffic movements and that approximately 80 per cent of all urban area trips are made either from or to the home. The traffic generated by the proposed residential development, therefore is directly related to the number of dwelling units in the project and can be estimated with reasonable accuracy from data relating to traffic generating characteristics appropriate for the area or district. For residential land uses, the trip and household characteristics must be analyzed since these are the primary factors affecting traffic flow and volume.

To assure that a sufficient margin of safety is built into the analysis, higher than normal traffic generation figures for number of trips per person, persons per household and other household characteristics will be used so that the traffic projections will still be valid for the future. Inasmuch as traffic generation for the same types of land uses is surprisingly similar, it would be proper and reasonably accurate to assume that the trip and household characteristics of the Kaneohe-Kailua District of Windward Oahu would be applicable to this area. These are the latest data available and were collected in 1971 for the purpose of evaluating the effect on traffic of proposed and planned streets and highway improvements in the District.

Except for Table 3, Tables 4 and 5 show the trip and household characteristics that are assumed to be typical of the area. Each household may be expected to own 1.3 automobiles and generate 5.25 trips per day. The number of trips made for the purpose of work is fairly constant throughout the week, and can be estimated with reasonable accuracy from employment. Using these various factors, it is possible to analyze traffic conditions that may be expected to occur on the highway system and thus measure the present and future demand for service.

Table 3
DWELLING UNITS BY TYPE OR SIZE

1 Bedroom	2 Bedroom	Total Units
682	181	863

Table 4
HOUSEHOLD CHARACTERISTICS

Auto Per Dwelling Unit	Persons Per Dwelling Unit	Employed Persons Per Dwelling Unit
1.3	2.5	1.5

Table 5
TRIP CHARACTERISTICS

Trips Per Person	Trips To Work Per Employed Person	Trips Per Dwelling Unit
2.1	0.7	5.25

On the basis of these factors, the 24 hour and peak hour volumes were developed as shown in Table 6. The 863 dwelling units will generate a 24 hour volume of 4,531 trips and a peak hour volume of 544 trips.

Table 6
TRIP GENERATION

No. of Units	No. of Auto	No. of Employed Persons	Work Trips	24 Hour Volume	Peak Hour Volume
863	1122	1295	907	4531	544

The trip volumes, including the 24 hour volumes and peak hour volumes, were based on the factor of 2.5 persons per dwelling unit, and will be higher than the actual volumes to be generated by the 863 dwelling units. Due to the smaller size of the dwelling units, the development will average approximately 2.10 persons per dwelling unit (as compared to 2.5 persons) for a total population of 1,812 persons. Smaller units also generate fewer trips per dwelling unit. The average value of 5.25 trips per dwelling unit is also higher since it actually refers to all trips by all modes of travel from all origins to all destinations, including auto passenger trips. Considering the mode of travel and car occupancy factors, a maximum of 84 per cent of the peak hour volume would actually constitute auto driver trips.

Peak Hour Volumes

Peak hour traffic volumes are an important consideration in the design and capacity of highways. In this connection, work trips are important not only in their volume but also in the fact that the majority of them are made during the morning and afternoon peak hours. For peak hour volumes generated by residential land uses, the work trips give a very good indication of the peak hour traffic flow.

Analysis of the peak hour volumes on Farrington Highway indicates that the afternoon peak hour volumes are higher than the morning peak hour volumes. The afternoon peak traffic demand, therefore, will govern the design or capacity of the streets.

The peak hour volume generated by the proposed development is assumed to be approximately 60 per cent of the total peak volume occurring within the 2 hour period between 3:00 P.M. and 5:00 P.M. with the remaining 40 per cent occurring at the second hour. The actual peak volume percentage is slightly over 52 per cent. However, the higher value of 60 per cent was used to determine if the roadway can accommodate the higher peak hour volume without exceeding the traffic capacity. As an explanation, the capacity of a highway is a measure of its ability to accommodate traffic and is represented by the maximum number of vehicles that can be carried under prevailing roadway and traffic conditions. It should be emphasized that the capacity of a highway is not directly comparable to the capacity of a container or enclosed space. The capacity is a rate instead of a quantity.

The peak hour volume so estimated for the project, 544 trips, is shown in Table 6. Using a 73 per cent/27 per cent directional distribution of the peak hour volume of the project, approximately 397 vehicles will be added to the peak hour volumes in the heavy direction on Farrington Highway. The peak hour flow of an additional 397 vehicles in the heavy direction is considerably less than the capacity of a local street. As a comparison, the capacity of a local street with a 44 foot right of way, with no parking and at grade intersection is approximately 600 vehicles per hour in one direction and 900 for both directions of travel.

Since there is the question of whether or not the additional traffic generated by the project will have adverse effects on Farrington Highway, it would be appropriate to investigate and determine how many additional cars can be accommodated by Farrington Highway. Farrington Highway is a principal arterial with 4 traffic lanes and has controlled access. Using average values, the capacity of a multi-lane highway is approximately 1,275 vehicles per lane per hour in one direction at Level of Service C. For a multi-lane highway of this type, the largest

number of vehicles that can pass a point one behind the other in a single lane, under ideal conditions, averages between 1,900 and 2,200 vehicles per hour. The lower capacity figure, however, will be used for design purposes.

With the Interstate Highway Route H-1 diverting a significant volume of through traffic from Farrington Highway, traffic volumes on Farrington Highway should continue to show a decrease from its high volume of 37,764 cars that occurred in 1971. In fact, it would be reasonable to assume that it would require 20 or more years before Farrington Highway will again reach its previous maximum volume of 37,764 vehicles. However, a more conservative estimate is to project the 1990 traffic volume to be equivalent to its 1972 volume of 36,240 vehicles, a volume higher than the 1977 volume of 35,011 vehicles. If consideration is given to the beneficial effects of the energy crisis, the present and future traffic volumes on the highways should be further reduced.

Excluding the traffic generated by the Waterfront Manor Project, the projected 1990 peak hour volume in the heavy direction on Farrington Highway will be 1,843 vehicles per hour based on the following factors:

1.	Average Daily Traffic, 1990	36,240 vehicles
2.	Peak Hour Percentages	
	A. M. Peak	6.4%
	P. M. Peak	8.2%
3.	Peak Hour Directional Distribution	
	A. M. Peak	79%/21%
	P. M. Peak	38%/62%
4.	Peak Hour Volumes	
	a) A. M. Peak	
	1) Heavy Direction	1,833 VPH
	2) Both Directions	2,320 VPH
	b) P. M. Peak	
	1) Heavy Direction	1,843 VPH
	2) Both Directions	2,972 VPH
5.	Vehicle Type Percentages	
	a) Passenger	88.9%
	b) Buses	0.3%
	c) Panel And Pickup	6.7%
	d) Other Single Unit Trucks	3.5%
	e) Truck Combinations	0.6%

The peak hour volume in the heavy direction on Farrington Highway, including the 397 vehicles from the Waterfront Manor project, will total 2,240 vehicles per hour. At 1,275 vehicles per lane per hour in one direction at Level of Service C, the capacity of Farrington Highway in the heavy direction (2 lanes) will total 2,550 vehicles per hour. The 1990 peak hour volume of 2,240 vehicles, therefore, is less than the capacity of Farrington Highway. With such excess capacity, Farrington Highway will be more than adequate to accommodate future traffic demands beyond 1990 and in all probability to the year 2000 but at Level of Service E, at a lane capacity of between 1,500 to 1,600 vehicles per hour.

MASS TRANSPORTATION

The City's "desirable" service guideline for accessibility to buses is five minute walking distance or the equivalent distance of one-fourth of a mile. Thus, public mass transportation service is available on Farrington Highway to serve the project. There are two bus routes on Farrington Highway: Route 50, Honolulu-Ewa Beach; and Route 51, Honolulu-Makaha. Their collective average headway is 12 minutes during the peak traffic hours and 15 minutes during the off-peak hours.

Although improved public mass transportation service, with frequent and convenient service to attract riders to the use of public transportation will reduce the peak hour flow on the highway by a minimum of 41 automobiles for each bus added to the route, no reliance was made on public mass transportation to reduce the traffic impact of the project. The traffic analysis was based entirely on the use of the automobile for maximum impact, and the 24 hour volume and the peak hour volume reflect this assumption.

As previously stated, there is now increasing dependence on the use of public transportation. Mass transportation, therefore, was considered only as a possible mitigating factor which may mitigate in the future the adverse consequences of traffic and improve the traffic flow on the highway and street systems. The energy crisis and the consequent enforced use of public transportation and other modes of travel should bring about considerable relief to the present and future traffic problems.

PARKING

Parking is a major problem in vehicular transportation and in accordance with the Comprehensive Zoning Code, 1,037 parking spaces will be provided for the condominium complex with its 863 dwelling units. Thus, the zoning regulations compel each land-owner to provide parking spaces sufficient for anticipated parking loads directly caused by his own development.

The number of parking spaces provided also should be valid for the future, taking into consideration the energy crisis, the trend towards fewer and smaller cars, and the increased availability, improvement and use of public transportation.

CONCLUSION

Analyzing the various factors, it may be concluded that the proposed development will not add substantially to the traffic problems to create an adverse impact. Traffic volumes on the highway network will be tolerable even with the additional traffic generated by the project. The project will make possible the achievement of desirable social and economic improvements for the area.

WATERFRONT MANOR PROJECT

BOTANICAL SURVEY

prepared by Winona Char

September, 1980

TABLE OF CONTENTS

I. INTRODUCTION

Herbert K. Horita Realty, Inc. proposes to develop and construct a number of condominium units within the 18.942-acre project site. The proposed development is to be known as Waterfront Manor. A botanical survey was conducted on September 5, 1980 to inventory the flora, prepare a vegetation map, and prepare a brief description of the vegetation types within the project site.

Transects were run through the project site and a list of species and their abundance was made. Notes on vegetation composition, structure, etc., were also made in the field. Plants which could not be positively identified in the field were collected for later determination in the laboratory.

The project site is a crescent-shaped parcel, approximately 2,000 feet long and 375 feet at its widest point. The highest point (along the Waipahu High School boundary) is 58 feet above mean sea level, while the lowest point is 3 feet above mean sea level.

The site was used for sugarcane cultivation, cattle grazing, and more recently, pig farming, watercress and ung-choi cultivation. Sites where several wooden single family residences existed is also evident. Concrete structures such as pig pens and garage floors can also be found nearby.

In their study of wetlands in the Hawaiian Islands, Elliott and Hall (1977) designated the low-lying area of the project site as wetland. A number of fresh water springs feed this wetland.

At one time a large fish pond, Loko 'Eo, was located to the west of the project site. It has since been filled in. A smaller fish pond, Loko Mo'o, located east of the project site formerly covered 13 acres but was partially filled in. It also was used for taro, watercress, and lotus cultivation (Sterling and Summers 1978).

II. VEGETATION TYPES

The vegetation within the project site can be classified into three major types which are easily distinguished in the field. In the low-lying areas a number of fresh water springs provide water for the formation of a wetland. Just behind the wetland are a number of old house and farm sites now covered by weedy plant species and scattered, low-stature (Leucaena leucocephala (koa-haole). The steeper areas behind the old house and farm sites are covered by taller Leucaena scrub.

1. Wetland Vegetation

Wetlands have been defined as lands where the water table is at, near or above the land surface long enough each year to promote the formation of hydric soils and to support the growth of hydrophytes (water loving plants) as long as other environmental factors are favorable (Cowardin et al 1976, Cowardin 1977). Water then is the main factor controlling the development of soils and the development of vegetative

cover (Elliott and Hall 1977). Three types of wetland vegetation can be distinguished within the project site. The first two types are marshes. Marshes are dominated by herbaceous or non-woody plants frequently grasses, sedges, and rushes and few if any trees or woody shrubs (Fosberg 1960). This wetland area was formerly used for cultivation of taro (Colocasia esculenta) and more recently watercress (Nasturtium microphyllum) and ung-choi (Ipomoea aquatica). The network of dikes and paddies is still very much evident.

a. Brachiaria marsh - Designated as "BrM" on the vegetation map, Brachiaria mutica (Californiagrass) forms a monodominant cover over an extensive portion of the uncultivated parts of the wetland. A few patches of Typha latifolia (cattail) can be found scattered throughout the Brachiaria marsh. Along the southern perimeter of the marsh, next to the dirt road, the Brachiaria has occasionally been cut back and a few weedy species can be found here. One plant of Heliotropium curassavicum (hinahina, kipukai) was seen here. This species has been listed as depleted (much less common over all or most of its range than formerly), local (restricted in distribution), and very rare (total population low) by Fosberg and Herbst (1975). Several plants of Jacquemontia sandwicensis (Pa'u-o-hi'i-'aka) were also found on the margin of the Brachiaria marsh.

b. Cyperus marsh - Designated as "CyM" on the vegetation map, Cyperus alternifolius (umbrella plant) covers a rather large area. It is surrounded by the Brachiaria marsh on all sides. The only other plant species recorded within the Cyperus marsh were Typha and Brachiaria.

c. Cultivated (ung-choi and watercress) area - Designated as "CULTIVATED" on the vegetation map and as "Cult." on the species check list, this area has been under cultivation for a long time and was only recently abandoned. The dikes are still in good condition. Patches of watercress can still be found along the ditches with water flowing in them and ung-choi is quite abundant in the paddy areas. While conducting the fieldwork for this survey we noted a number of people stopping to pick a few handfuls of ung-choi. One of the paddies appears to have been recently planted with ung-choi cuttings.

Most of the paddies have begun to dry out since the springs have been capped and Cynodon dactylon (Bermuda grass) now grows over much of the area. The paddies closest to the ocean and along the irrigation ditches are still wet and support a number of hydrophytes such as Typha, Myriophyllum, taro, etc.

2. Leucaena Vegetation Types

Leucaena leucocephala (koa-haole) covers extensive areas within the project site. Three variants of this vegetation type can be distinguished based on stature and composition.

a. Leucaena scrub - Designated as "LS" on the vegetation map. Leucaena forms low stature (1 to 1½ m) scrub in areas adjacent to the abandoned house sites while on the hillside behind the house sites it forms tall stature (3 to 4 m) scrub. In some areas there are few understory

plants. Ground cover in these areas may be 40 to 50% and consists mostly of Setaria verticillata (bristly foxtail) and Malvastrum coromandelianum (false mallow). A few scattered trees of Prosopis pallida f. armata (kiawe) and Acacia farnesiana (klu) shrubs can also be found. Along the roadsides where it has been occasionally cleared and there is more light, a number of weedy species abound.

b. Leucaena - Panicum scrub - Designated as "LS-Pmax" on the vegetation map, this vegetation type occurs in low-lying areas where it is fairly moist. The Leucaena here is very tall, 10 m, and the canopy is closed. Understory consists almost entirely of the grass Panicum maximum (Guinea grass) which forms almost 100% cover. A number of Samanea saman (monkeypod) trees of about the same height as the Leucaena or taller can be found scattered throughout this vegetation type.

c. Eugenia - Leucaena thicket - Designated as "E-LS" on the vegetation map, this vegetation type occupies only a small area. It lies adjacent to the westernmost house site. It consists of a stand of Eugenia cuminii (Java plum), 10 to 12 m tall, with a sub-canopy layer of Leucaena. Beneath this is a shrub layer consisting of Pluchea indica (Indian pluchea) and Schinus terebinthifolius (Christmas berry). Panicum forms the ground cover.

3. Abandoned Farm and House Sites

Designated as "W" on the vegetation map, it consists of open, weedy vegetation with scattered, low-stature (1 to 1½ m tall) Leucaena. A number of cultivated plant species, such as coconut (Cocos nucifera), papaya (Caria papaya), Heliconia sp., etc., are occasionally encountered. A large specimen of Chinese banyan (Ficus microcarpa) can be found near the pig pens.

III. DISCUSSION

The plant species found within the project site consist mostly of introduced, weedy species and the proposed development will have no impact on the total island population of these species. Plant species listed in the Federal Register of proposed endangered and threatened species (1976) were not found.

Removal of the Leucaena scrub on the steeper areas of the project site may lead to soil runoff problems during construction. Immediate grassing of the area after removal of the Leucaena cover is advised.

The survey was undertaken at the end of the summer months and annual species which come up during the rainy season would not have been inventoried. A similar survey undertaken at a different time of the year will no doubt yield a slightly different species checklist.

IV. WATERFRONT MANOR PROJECT - VASCULAR PLANT SPECIES CHECKLIST

Families are listed alphabetically within each of three groups: Pteridophyta, Monocotyledonae, and Dicotyledonae. Genera and species are arranged alphabetically. Taxonomy and nomenclature of pteridophytes

follow Wagner's unpublished Checklist of Hawaiian Pteridophytes. Taxonomy and nomenclature of flowering plants follow St. John (1973) except where more commonly accepted names are listed. Hawaiian names used in the checklist are in accordance with Porter (1972) or St. John (1973).

For each species the following information is provided:

1. Scientific name.

2. Common name or Hawaiian name, when known.

3. Status of the species. The following symbols are employed:

   E = endemic to the Hawaiian Islands, i.e. occurring naturally nowhere else in the world.

   I = indigenous, i.e., native to the Hawaiian Islands but also occurring naturally (without the aid of man) elsewhere.

   X = exotic, i.e., plants of accidental or deliberate introduction after the Western discovery of the islands.

   P = Polynesian introduction; it includes those plants brought by the Polynesian immigrants previous to Captain Cook's discovery of the island.

4. Relative abundance of the species within a project site. The rank is based entirely upon a comparison of the frequency with which a species occurs as compared to all other species, within the study site. It does not denote, necessarily, the abundance of that particular species in the Hawaiian Islands.

   The following symbols and explanations are employed:

   A = ABUNDANT, generally the major or dominant species in a given area.

   C = COMMON, generally distributed throughout a given area in large numbers.

   O = OCCASIONAL, generally distributed throughout a major portion of a given area, but in small numbers.

   U = UNCOMMON, observed uncommonly but more than 5 times in a given area.

   R = RARE, observed 1 to 5 times in a given area.

5. Vegetation types. Descriptions of each vegetation type and an accompanying map can be found in the text. The following symbols are used for each vegetation type:

WATERFRONT MANOR PROJECT - PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
PTERIDOPHYTA									
Salviniaceae									
Azolla filiculoides Lamk.	Azolla	X	R	-	O	-	-	-	-
MONOCOTYLEDONAE									
Araceae									
Colocasia esculenta (L.) Schott.	Taro, kalo	P	-	-	R	-	-	-	-
Cannaceae									
Canna indica L.	Ornamental canna, poloke	X	-	-	-	-	-	-	R
Commelinaceae									
Commelina diffusa Burm. f.	Honohono	X	-	-	A	-	-	-	-
Cyperaceae									
Cyperus alternifolius L.	Umbrella plant, ahu'awa haole	X	-	A	-	-	-	-	-
Cyperus polystachyus Rottb.		I	-	-	R	-	-	-	-

BrM = Brachiaria marsh
CyM = Cyperus marsh
Cult. = Cultivated area
LS = Leucaena scrub
LS-Pmax = Leucaena - Panicum scrub
E-LS = Eugenia - Leucaena thicket
W = abandoned farm and house sites

WATERFRONT MANOR PROJECT – PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Gramineae (continued)									
Panicum maximum Jacq.	Guinea grass	X	–	–	–	U	A	C	O
Pennisetum purpureum Schumach	Elephantgrass, napiergrass	X	R	–	–	–	–	–	–
Pennisetum setosum (Sw.) L. C. Rich.	Feathery pennistum	X	–	–	–	O	–	–	C
Setaria verticillata (L.) Beauv.	Bristly foxtail	X	–	–	–	O	–	–	O
Tricachne insularis (L.) Nees	Sourgrass	X	–	–	O	U	–	–	R
Heliconiaceae									
Heliconia sp.		X	–	–	–	–	–	–	R
Lemnaceae									
Lemna minor L.	Duckweed	X	–	–	O	–	–	–	–

8

WATERFRONT MANOR PROJECT – PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Cyperaceae (continued)									
Eleocharis geniculata (L.) R. & S.		X	–	–	U	–	–	–	–
Gramineae (Poaceae)									
Brachiaria mutica (Forsk.) Stapf	Californiagrass, paragrass	X	A	C	–	U	O	–	–
Cenchrus echinatus L.	Common sandbur	X	–	–	–	U	–	–	–
Chloris inflata Link	Swollen fingergrass, mau'ulei	X	R	–	–	O	–	–	C
Cynodon dactylon (L.) Pers.	Bermuda grass, manienie	X	R	–	A	O	–	–	O
Echinochloa colona (L.) Link	Jungle rice	X	–	–	R	–	–	–	–
Echinochloa crusgalli (L.) Beauv.	Barnyard grass	X	–	–	O	–	–	–	–
Eleusine indica (L.) Gaertn.	Wire grass, manienie – ali'i	X	R	–	O	U	–	–	–

7

WATERFRONT MANOR PROJECT - PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Amaranthaceae									
Achyranthes indica (L.) Mill.		X	-	-	-	U	-	-	O
Amaranthus spinosus L.	Spiny amaranth, pakai-kuku	X	R	-	-	O	-	-	O
Amaranthus viridis L.	Slender amaranth, pakai	X	-	-	O	U	-	-	-
Anacardiaceae									
Mangifera indica L.	Mango, manako	X	-	-	-	-	-	-	R
Schinus terebinthifolius Raddi	Christmas berry, Wilelaiki	X	-	-	-	-	-	O	R
Araliaceae									
Brassaia actinophylla Endl.	Octopus tree, umbrella tree	X	-	-	-	-	-	R	-
Boraginaceae									
Heliotropium curassavicum L.	Hinahina, kipukai, nena	I	R	-	-	-	-	-	-

10

WATERFRONT MANOR PROJECT - PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Liliaceae									
Aloe vera L.	Aloe, panini 'awa'awa	X	-	-	-	R	-	-	-
Sansevieria fasciata Cornu	Sansevieria, bowstring hemp	X	-	-	-	R	-	-	-
Musaceae									
Musa x paradisiaca L.	Banana, mai'a	P	R	-	R	-	-	U	-
Palmae (Arecaceae)									
Cocos nucifera L.	Coconut, niu	P	-	-	-	-	-	R	R
Typhaceae									
Typha latifolia L.	Common cattail	X	O	C	C	-	-	-	-
DICOTYLEDONAE									
Acanthaceae									
Asystasia gangetica (L.) T. Anders.	Asystasia	X	-	-	-	-	-	-	U

9

WATERFRONT MANOR PROJECT - PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Compositae (continued)									
Erigeron canadensis L.	Canada fleabane, ilioha	X	-	-	U	-	-	-	-
Pluchea x fosbergii Cooperrider & Galang	Pluchea hybrid	X	R	-	-	-	-	-	-
Pluchea indica (L.) Less.	Indian pluchea	X	-	-	O	U	-	O	-
Pluchea odorata (L.) Cass.	Pluchea	X	R	-	O	U	-	-	-
Sonchus oleraceus L.	Sow thistle, pua lele	X	R	-	O	-	U	-	-
Synedrella nodiflora (L.) Gaertn.	Synedrella	X	-	-	-	-	U	-	-
Tridax procumbens L.	Coat buttons	X	-	-	-	R	-	-	-
Verbesina encelioides (Cav.) Gray	Golden crown-beard	X	-	-	-	U	-	-	-
Convolvulaceae									
Ipomoea alba L.	Moon flower, koali-pehu	X	-	-	-	-	-	-	R

12

WATERFRONT MANOR PROJECT - PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Caricaceae									
Carica papaya L.	Papaya, mikana	X	-	-	-	-	-	-	U
Chenopodiaceae									
Atriplex muelleri Benth.		X	-	-	R	-	-	-	-
Atriplex semibaccata R. Br.	Australian salt bush	X	R	-	-	U	-	-	-
Combretaceae									
Terminalia catappa L.	False kamani, tropical almond	X	-	-	-	-	-	R	-
Compositae (Asteraceae)									
Bidens pilosa L.	Spanish needle, beggar's tick, ko'oko'olau	X	-	-	-	O	-	-	O
Eclipta alba (L.) Hassk.	False daisy	X	R	-	O	-	-	-	-
Emilia sonchifolia (L.) D.C.	Lilac pualele	X	-	-	R	-	-	-	-

11

WATERFRONT MANOR PROJECT – PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Euphorbiaceae									
Euphorbia geniculata Ortega	Wild spurge, kaliko	X	–	–	–	U	U	–	U
Euphorbia glomerifera (Millsp.) L. C. Wheeler		X	–	–	–	O	–	–	–
Euphorbia hirta L.	Hairy spurge, koko-kahiki	X	–	–	–	U	–	–	–
Ricinus communis L.	Castor bean, koli	X	–	–	–	O	O	–	U
Haloragaceae									
Myriophyllum brasiliense Cambess.	Parrots feather, Chilian water-milfoil	X	–	–	C	–	–	–	–
Labiatae (Lamiaceae)									
Leonotis nepetaefolia (L.) Ait. f.	Lion's ear	X	–	–	–	U	–	–	O

14

WATERFRONT MANOR PROJECT – PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Convolvulaceae (continued)									
Ipomoea aquatica Forsk.	Swamp cabbage, ung-choi	X	–	–	A	–	–	–	–
Ipomoea obscura (L.) Ker-Gawl		X	–	–	–	U	–	–	U
Ipomoea triloba L.	Little bell	X	–	–	–	U	–	–	–
Jacquemontia sandwicensis Gray	Pa'u-o-hi'i-'aka	E	R	–	–	–	–	–	–
Merremia aegyptia (L.) Urban	Hairy merremia, Koali-kua-hulu	I	–	–	–	U	–	–	–
Cruciferae (Brassicaceae)									
Nasturtium microphyllum Boenn.	Watercress, leko	X	–	–	C	–	–	–	–
Cucurbitaceae									
Momordica charantia var. Pavel Crantz	Balsam apple, ku kua	X	–	–	–	–	O	–	U

13

WATERFRONT MANOR PROJECT – PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Leguminosae (continued)									
Samanea saman (Jacq.) Merr.	Monkeypod	X	–	–	–	R	O	–	–
Malvaceae									
Abutilon grandifolium (Willd.) Sweet	Hairy abutilon, ma'o	X	–	–	–	R	–	–	–
Gossypium barbadense L.	Cotton plant, pulupulu-haole	X	–	–	–	R	–	–	R
Hibicus rosa-sinensis L.	Hibicus, aloalo	X	–	–	–	–	–	–	R
Hibicus tiliaceus L.	Hau	I	–	–	–	R	–	–	–
Malvastrum coromandelianum (L.) Garcke	False mallow	X	–	–	–	O	–	–	O
Sida fallax Walp.	'Ilima	I	–	–	–	U	–	–	U
Sida rhombifolia L.	Cuba jute	X	–	–	–	U	–	–	–

16

WATERFRONT MANOR PROJECT – PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Leguminosae (Fabaceae)									
Acacia farnesiana (L.) Willd.	Klu	X	–	–	–	O	–	–	–
Canavalia sp.		X	–	–	–	–	R	–	–
Cassia leschenaultiana D.C.	Partridge pea, lauki	X	–	–	–	R	–	–	–
Crotalaria incana L.	Fuzzy rattle-pod, kukae-hoki	X	–	–	–	R	–	–	–
Desmanthus virgatus (L.) Willd.	Virgate mimosa	X	R	–	O	O	–	–	O
Leucaena leucocephala (Lam.) de Wit	Koa-haole	X	R	–	U	A	A	C	C
Phaseolus lathyroides L.	Cow pea, papapa	X	–	–	–	R	–	–	–
Pithecellobium dulce (Roxb.) Benth.	'Opiuma, Madras thorn	X	–	–	–	R	–	–	–
Prosopis pallida f. armata Fosb.	Kiawe, algaroba	X	–	–	–	O	–	–	–

15

WATERFRONT MANOR PROJECT - PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Oxalidaceae									
Oxalis corniculata L.	Yellow wood sorrel, 'ihi, 'ihi-'ai	I	-	-	-	R	U	-	-
Oxalis martiana Zucc.	Pink wood sorrel, 'ihi pehu	X	-	-	-	-	R	-	-
Passifloraceae									
Passiflora foetida L.	Pohapoha	X	-	-	-	U	R	-	R
Plantaginaceae									
Plantago major L.	Common plantain, lau-kahi	X	-	-	U	-	-	-	-
Polygonaceae									
Antigonon leptopus H. & A.	Mexican creeper	X	-	-	-	R	-	-	-
Coccoloba uvifera (L.) L.	Sea grape, waina kahakai	X	-	-	-	R	-	-	-

18

WATERFRONT MANOR PROJECT - PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Malvaceae (continued)									
Sida spinosa L.	Prickly sida	X	-	-	-	R	-	-	-
Thespesia populnea (L.) Soland.	Milo, portia tree	P	R	-	-	-	-	-	-
Moraceae									
Ficus microcarpa L. f.	Chinese banyan	X	-	-	-	-	-	-	R
Moringaceae									
Moringa oleifera Lam.	Horseradish tree, Kalamungay	X	-	-	-	R	-	-	-
Myrtaceae									
Eugenia cuminii (L.) Druce	Java plum, palama	X	R	-	-	U	-	C	-
Nyctaginaceae									
Boerhavia coccinea Mill.		X	-	-	-	R	-	-	-

17

WATERFRONT MANOR PROJECT - PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Solanaceae									
Solanum nigrum L.	Popolo	I?	-	-	-	R	U	-	-
Sterculiaceae									
Waltheria americana L.	Hi'a-loa, 'uha-loa	I	R	-	-	U	-	-	-

20

WATERFRONT MANOR PROJECT - PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	STATUS	BrM	CyM	Cult.	LS	LS_{Pmax}	E-LS	W
Portulacaceae									
Portulaca oleracea L.	Common purslane, 'akulikuli kula	X	-	-	U	-	-	-	O
Proteaceae									
Macadamia ternifolia var. integrifolia (Maiden & Betche) Maiden & Betche	Macadamia nut	X	-	-	-	R	-	-	-
Rhizophoraceae									
Rhizophora mangle L.	American mangrove	X	R	-	-	-	-	-	-
Rutaceae									
Murraya paniculata (L.) Jack	Mock orange	X	-	-	-	-	-	R	-
Sapindaceae									
Cardiospermum halicacabum L.	Balloon vine	X	-	-	-	R	-	-	-

19

Literature Cited

Cowardin, L., V. Carter, F. Golet, and E. LaRoe. 1976. Interim classification of wetlands and aquatic habitats of the United States. Addendum to J. Sather, editor, Proceedings of the National Wetland Classification and Inventory Workshop. U.S. Fish and Wildlife Service, OBS-76/09.

_____. 1977. Classification of wetlands and aquatic habitats of the United States. U.S. Fish ad Wildlife Service. 73 pp.

Elliott, M.E. and E.M. Hall. 1977. Wetlands and wetland vegetation of Hawaii. Prepared for the U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Honolulu. 344 pp.

Fosberg, F.R. 1960. The vegetation of Micronesia, I. General descriptions, the vegetation of the Marianas Islands, and a detailed consideration of the vegetation of Guam. Bulletin of the American Museum of Natural History, 119:1-75.

_____ and D. Herbst. 1975. Rare and endangered species of Hawaiian vascular plants. Allertonia 1(1): 1-72.

Neal, M.C. 1965. In gardens of Hawaii. Special Publication 50. Bernice Pauahi Bishop Museum Press, Honolulu. 924 pp.

Porter, J.R. 1972. Hawaiian names for vascular plants. College of Tropical Agriculture, Hawaii Agricultural Experiment Station, University of Hawaii, Departmental Paper No. 1. 64 pp.

St. John, H. 1973. List and summary of the flowering plants in the Hawaiian Islands. Pacific Tropical Botanical Garden, Mem. 1. Lawai, Kauai, Hawaiian Islands. 519 pp.

Sterling, E.P. and C.C. Summers. 1978. Sites of Oahu. Bernice Pauahi Bishop Museum Press, Honolulu. 352 pp.

U.S. Department of Interior, Fish and Wildlife Service. 1976. Endangered and threatened species, plants. Federal Register 41(117): 24524-24572.

Wagner, W.[illegible] Checklist of Hawaiian pteridophytes. MS.

VEGETATION MAP LOCATED ON NEXT PAGE

● ABANDONED HOUSE SITE

◘ ABANDONED PIG PENS

BrM = Brachiaria marsh

CyM = Cyperus marsh

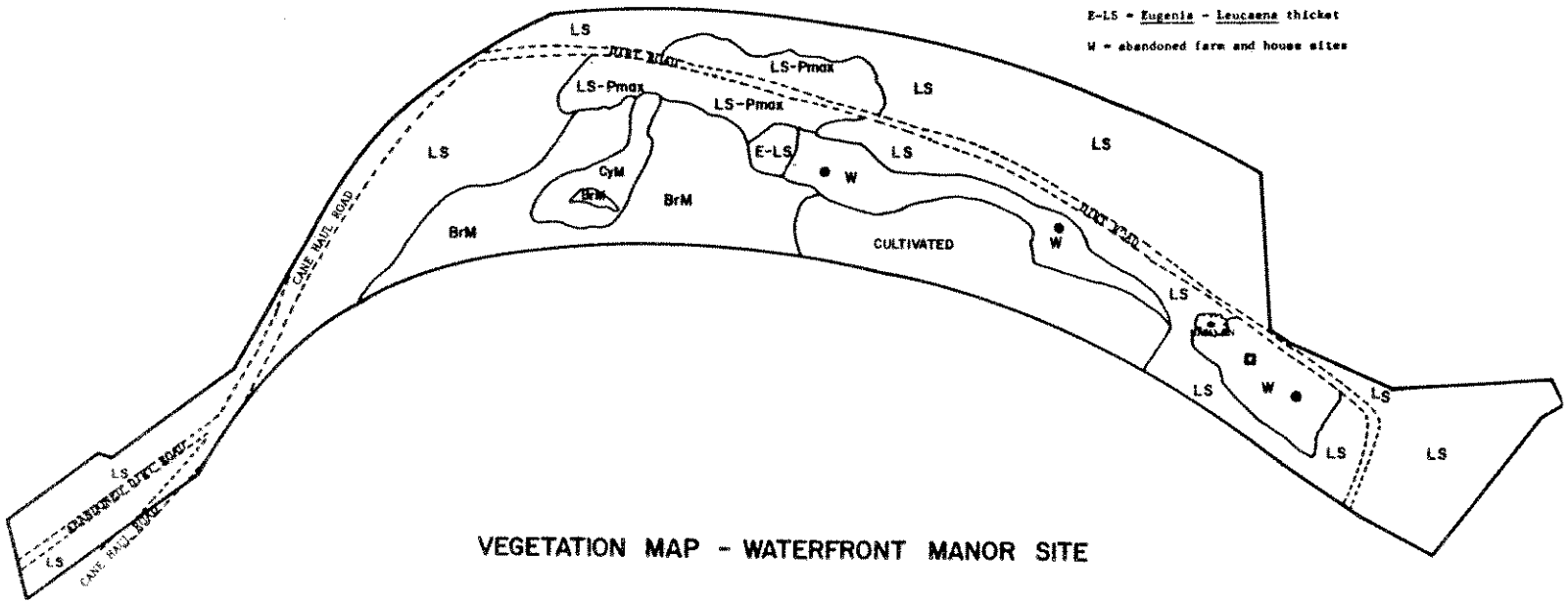
Cult. = Cultivated area

LS = Leucaena scrub

LS-Pmax = Leucaena - Panicum scrub

E-LS = Eugenia - Leucaena thicket

W = abandoned farm and house sites



VEGETATION MAP - WATERFRONT MANOR SITE

9/80

FAUNA REPORT

WATERFRONT MANOR SITE

Waiawa-Waipio area of Ewa District

prepared by Andrew Berger, Ph.D.

September, 1980

Fauna Report, Waterfront Manor Site,
Waiawa-Waipio area of Ewa District,

By Andrew J. Berger

This report on the fauna (with special reference to endangered Hawaiian waterbirds) at the proposed Waterfront Manor construction site near the Waipahu High School was prepared for Environmental Communications, Inc., in accordance with instructions provided by Ms. Caroleen Toyama on August 26 and 27, 1980. I met Ms. Toyama in the offices of Environmental Communications, Inc., at 8:45 a.m. on August 27. After discussing the project and examining maps of the area, Ms. Toyama and I drove to the site, where Ms. Toyama discussed the past history of the proposed construction site and showed me the precise boundaries to it. I remained there to observe the plants and birds.

Topography and General Vegetation

A detailed list of the vegetation will be prepared by Ms. Winona Char. Certain general statements about the vegetation are necessary, however, for understanding the following comments on the birds found in the area.

The subject area has undergone extensive disturbance during the past 200 years and there is no semblance of any endemic ecosystem. In the past, the area has been used for cattle grazing and more recently for pig farming and for cultivation of watercress and ung-choi. The lowland areas presently have remnants of these cultivated crops as well as California grass, bulrush, and cattail. On both the first and second ridge mauka of the lowland the predominant vegetation is the introduced haole koa; a few other introduced trees are widely scattered on the higher ground (e.g., banyan, mango, plumeria, and palm trees). An old road on the top of the first ridge is littered with all kinds of trash that has been dumped there over the years.

The Birds

The sea level location and the presence of only introduced or exotic vegetation in the subject site makes it totally unsuitable for any endemic Hawaiian forest bird. All of the land bird species that I have seen at the site (as well as in many surrounding areas) have been those that have been introduced to the Hawaiian islands: for example, Lace-necked Dove, Barred Dove, Red-vented Bulbul, Japanese White-eye, Common Indian Mynah, House Sparrow, Red-crested Cardinal, and House Finch. Other species of introduced birds are found outside of the small project area. None of these species is protected by the Rare and Endangered Species Act of 1973, and a number of them are pest species in Hawaii (Berger 1972).

The only concern for birds in the Pearl Harbor area deals with the endangered waterbirds: Hawaiian Gallinule (Gallinula chloropus sandivicensis), Hawaiian Coot (Fulica americana alai), Hawaiian Stilt (Himantopus mexicanus knudseni), and the Koloa or Hawaiian Duck (Anas wyvilliana).

It is my considered opinion (based on more than 15 years of study in Hawaii) that the proposed Waterfront Manor construction site could not be developed as first-rate waterbird habitat no matter how much money was expended to improve the site. The sea level portion of the site is far too small and is too isolated from good or potentially good waterbird habitat to ever be of significance for the Hawaiian waterbirds. Under the most favorable conditions that could be developed, the pond area would be large enough to support a population of only one or two pairs of coots or stilts, and there is no assurance that the birds would occupy this site even if it were developed. As an example, the number of Hawaiian Stilts using Paiko Lagoon has decreased drastically since the State dredged the lagoon in 1973; nor

have the stilts ever used the nesting islands constructed in the lagoon some seven years ago. William P. Mull, vice president of the Hawaii Audubon Society in 1971, testified before the Senate Committee on Ecology, Environment, and Recreation on February 9, 1971; his testimony later was published in the Elepaio, the monthly journal of the Hawaii Audubon Society (volume 31, March 1971:85-86). He said: "An overall consideration in all legislative action associated with the Paiko Lagoon project is that Paiko Lagoon, no matter how successful it is as a wildlife sanctuary, will not in itself ensure preservation of the Hawaiian Stilt. Its success as a secondary sanctuary will depend on preservation of the primary Stilt breeding habitats elsewhere on Oahu, such as Kahuku Ponds, Kawainui Swamp, Kaneohe Marine Corps Air Station Ponds, and Pearl Harbor areas, such as upper West Loch."

Mr. Mull was correct that the limiting factor for the stilt (as well as for the other Hawaiian waterbirds) is the shortage of safe breeding sites and, therefore, an inadequate production of young each year. Data obtained by personnel of the State Division of Fish and Game suggest that the shortage of safe breeding sites is still the limiting factor. For example, the estimated summer population of stilts on all of the islands was 1,477 birds in 1976; however, only 523 birds were counted during the State-wide census in January of 1979.

In addition to this apparent drastic decline in total numbers of stilts in the Hawaiian Islands between 1976 and 1979, the Pearl Harbor area has not been, at least in recent years, a major nesting site for the Hawaiian Stilt, although it is a favorite feeding area for the birds. What is needed is improvement of the nesting islands already constructed in the Pearl Harbor National Wildlife Refuge (i.e., Honouliuli sites and Waiawa or Pearl City site at West Loch).

According to Shallenberger (1977:298), "Coots find far less suitable habitat in ne Pearl Harbor wetlands than do stilt. No more than 3 coots have been reported on individual counts at Honouliuli refuge unit. . . . . Greatest numbers in the Pearl Harbor area have generally been found in small fish ponds in the Waikele area, although HDF&G/USF&WS counts for this area average less than 15 birds." One can conclude that the Pearl Harbor area does not provide optimal habitat for the feeding and nesting of the Hawaiian coot.

The Pearl Harbor area does not provide good habitat for the Hawaiian Gallinule, and Shallenberger (1977) wrote that: "Hawaiian Gallinule are even less common in Pearl Harbor areas than are coots. No more than two birds have been reported in the Honouliuli refuge unit in recent years." Shallenberger did find the gallinule nesting at the prawn farm at Honouliuli. However, the gallinule prefers fresh or brackish, water to salt water so that it is doubtful that the Pearl Harbor habitat can ever be changed to provide habitat for any large numbers of gallinule.

It seems certain that the Pearl Harbor area can never be a good habitat for the Hawaiian Duck. To the best of our knowledge, this duck became extinct on Oahu during the 1950s. A Koloa restoration project was initiated by the State Division of Fish and Game in 1972. As of April 1979, 347 Hawaiian Ducks had been released on Oahu in an attempt to reestablish the species on this island: 199 birds were released in Kawainui Swamp; 103 at Waimea Falls Park; and 45 at Nuupia Pond on the Kaneohe Marine Corps Air Station. "Although release of cage-reared Koloa began on the windward side on Oahu in 1969, we can find no reports of the species in the Pearl Harbor area until 7/18/76, when two birds were counted on the ponds on Waipio Peninsula. Since that time, they have also been observed at the Honouliuli

refuge unit. Because of the distance involved, it is questionable whether or not birds from the windward side will successfully disperse in greater numbers to this area" (Shallenberger, 1977:299). However, much more is involved than a "greater dispersement." It seems doubtful that the Pearl Harbor region offers the necessary food and safe nesting sites required by the Hawaiian Duck, even though Munro (1944) wrote that, more than 40 years ago, this duck was "a common bird in coastal lagoons, marshes and mountain streams on all islands except Lanai and Kahoolawe." I know of no documented records of this duck nesting in the vicinity of salt water, however.

Mammals

The Hawaiian Islands have only one endemic land mammal, the Hoary bat (Lasiurus cinereus), and this bat is rarely reported on Oahu. All other mammals found in the area are introduced species and all are serious pests, causing great damage to man's products and to wildlife.

Summary Statement

The subject area has been greatly disturbed during the past two centuries. Both the dominant and subdominant vegetation consists of introduced plants. There are no endemic amphibians or land reptiles in Hawaii; therefore, all of those present on Oahu are introduced species. All of the birds and mammals that I saw in the subject area also are introduced species.

It is my considered opinion that the small acreage of presumed wetland habitat in the Waterfront Manor property is of insignificance as potential waterbird habitat, even if large sums of money were spent to provide open water and suitable aquatic vegetation. There appear to be no historical data that suggest that any of the endangered Hawaiian waterbirds have ever used this small area, nor is this area close enough to existing

Wildlife Refuges to make it likely that birds would occupy it even if optimal conditions could be provided. Moreover, the potential habitat would be so small as to provide habitat for no more than one or two pairs of stilts and/or coots. In addition, maintenance of suitable habitat (adequate water level, safe nesting places, control of predators) would be so expensive as to make it unfeasible for such a small population of birds.

Therefore, based upon a consideration of the endangered Hawaiian waterbirds, I can see no justification for asserting that this small, presently unsuitable habitat is of any importance to those waterbirds. There is no biological justification for asserting that this small habitat is now, or will be in the future, of any importance to the four species of endemic waterbirds on Oahu. There is, therefore, no biological justification for not permitting the proposed residential construction on this small area of land.

Literature Cited

Berger, A.J. 1972. Hawaiian Birdlife. University Press of Hawaii, Honolulu, 270 pages.

Munro, G.C. 1944. Birds of Hawaii. Bridgeway Press, Rutland, Vermont, 189 pages.

Shallenberger, R.J. 1977. An Ornithological Survey of Hawaii Wetlands. prepared for the U.S. Army, Engineer District, Honolulu.

October 17, 1980
W.O. 966-00

APPENDIX V

WATERFRONT MANOR GEOLOGIC & SOIL CONDITIONS
PREPARED BY GEOLABS-HAWAII

The portion of the site which appears to have wet grounds is mainly confined to the lower level area below elevation 4 feet. This area was at one time used for watercress, taro and ung-choi farming. These farms were fed by pipe artesian wells and drained by concrete pipes emptying into Pearl Harbor. It appears that storm water from the Waipahu High School ground as well as run-off from the upper portion of the development site drains onto the lowlying level area.

During a reconnaissance of the site in July, 1980, it was noted that the farms have all been abandoned and the watercress, taro and ung-choi patches were being dried out. However, some shallow surface water ponding and small seepage could still be noted in the existing ditch within the former watercress farm.

Based on our previous local experience working with wet land topography, some of the primary characteristics of a natural swamp or marsh are 1) soft, thick organic soil deposits, 2) high in-situ water contents (weight of water to weight of solids) of the organic soils, 3) naturally occurring continuous source of water, 4) low-lying relief resulting in poor drainage, and a relatively long existing condition.

These natural swamp or marsh characteristics are not so prominent in this lower portion of the site. It is our opinion that because of its low-lying relief with respect to the surrounding higher ground and its past agricultural use, the lower surface area appears to be wet.

In reviewing information obtained from previous borings done in January, 1971 (by Walter Lum Associates, Inc.), the lower level area below elevation 4 feet consisted of soft, organic clays with sand seams to only about 2 to 8-foot depths. Underlying this soft upper surface crust were generally much stiffer clays with sand seams and traces of decomposed rock to depth of 50 feet, the maximum depth drilled. In our opinion, a thickness of 8 feet of soft material is relatively thin for a naturally occurring swamp deposit. Usually this type of deposit could range from 40 feet to 100 feet and more depending upon the location and age of the deposit. An 8-foot thick deposit suggests a recent occurrence and not a long existing condition. The close proximity of the underlying stiff decomposed rock layer seems to indicate that the area was a dry land terrain once, probably when the ocean level was much lower than its present sea level.

Previously tested water contents of the upper surface soft deposits ranged from a low of about 36 percent to a high of 60 percent. Water contents that we have encountered in natural swamps generally run much higher than the above values and it is not uncommon to find water contents of 100 percent or greater in a natural swamp - especially when peaty deposits are encountered.

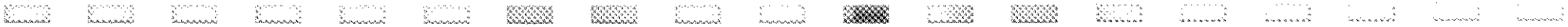
A small localized quantity of water flowing seaward was noticed during our reconnaissance in the ditch along the perimeter dirt road bordering the edge of Pearl Harbor. The water eventually emptied into Pearl Harbor through a pipe under the dirt road. At the present time, the source of this water cannot be specifically determined without a more thorough investigation. It does seem, however, that the water could be coming from subsurface seepage from the leakage of the adjacent artesian wells(s) which may not have been properly sealed. If this is the case, then a more secure seal on the well(s) would result in the elimination of the water source, thus eliminating one of the causes for the sites' swampy or "wet land" appearance. In general, no other constant, naturally occurring, visible source of water was noticed feeding the lower site during our recent reconnaissance. Another cause of the lower sites' "wet land" appearance is its closeness to sea level of Pearl Harbor. Because of this, some depressions within the lower area extending below sea level exposed the water table as a pool of water. For ground elevations above high tide level the surface was noted to be dry.

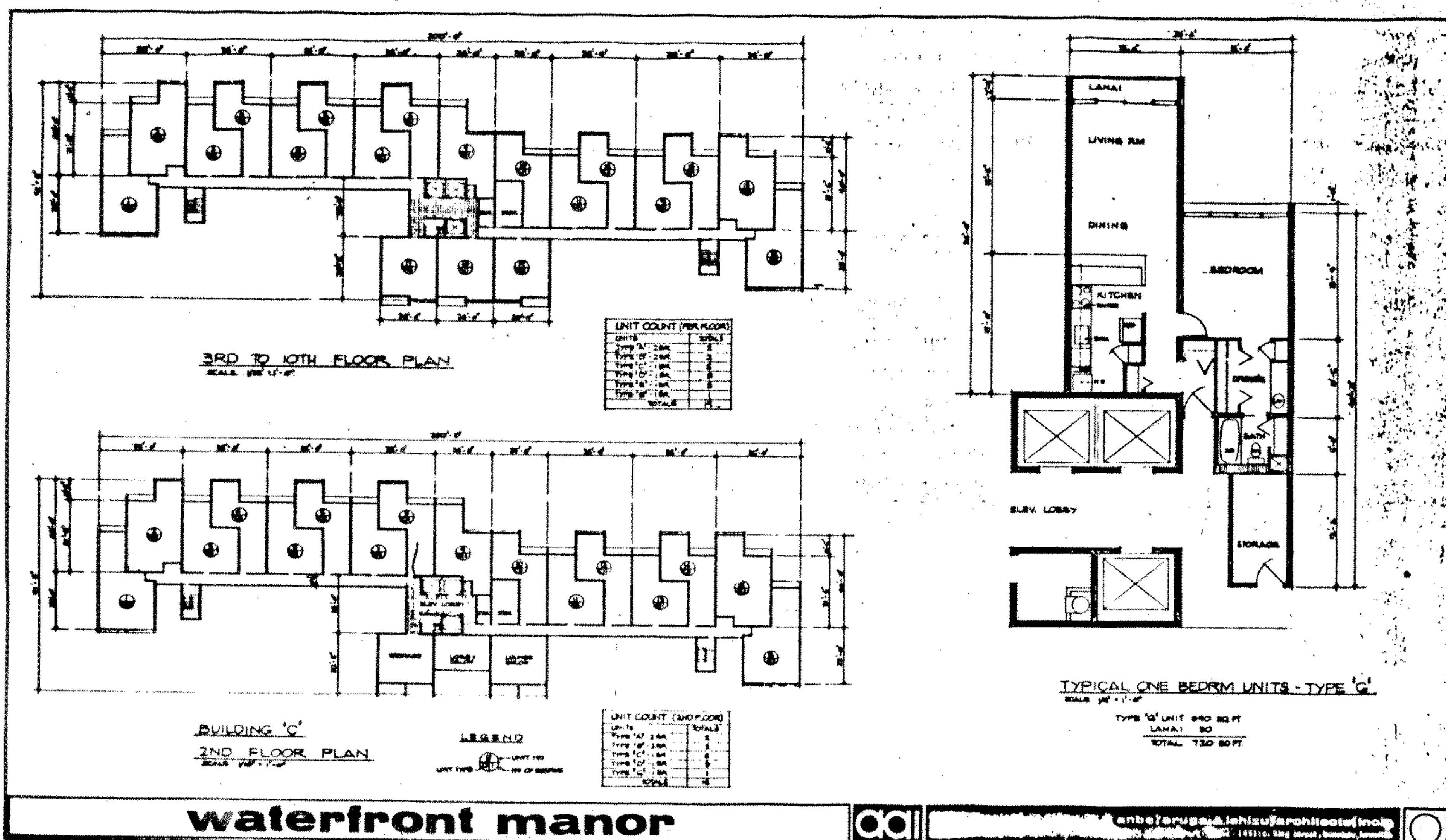
The overall poor drainage of the lower site, in our opinion, is due to its level relief resulting in a very low seaward gradient for any ponded water in the area. More importantly the perimeter dirt road, mentioned above, is acting like a berm preventing free flowing drainage out of this area. In its present condition, any run-off water collected in the lower site area would tend to pond there until the water could eventually find its way through the pipe(s) under the dirt road and drain into Pearl Harbor. With additional surface drains and subdrainage improvements, allowing more water to pass under the dirt road, it appears that the lower site could be stabilized to become a dry ground again.

APPENDIX VI

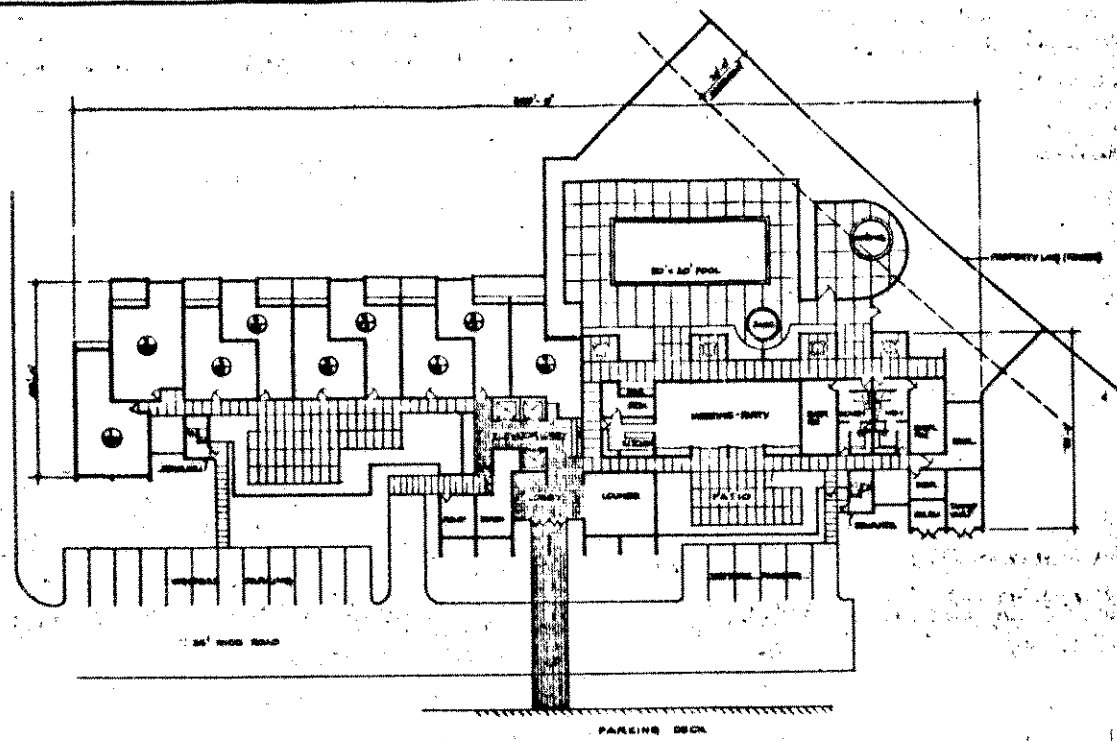
PRELIMINARY PLANS FOR THE WATERFRONT CONDOMINIUM UNITS

During the Draft EIS review, the State Department of Social Services and Housing requested further information on the unit size and plans. Although these plans are available they are preliminary and are very likely to be modified. Additionally, their original size makes it difficult to incorporate into this document. To provide some indication as to the unit layout and other plans, reduced copies of these plans are provided. The more interested reviewers are asked to request review of the originals from Environmental Communications, Inc.





PRELIMINARY - SUBJECT TO CHANGE



BUILDING 'C'

FIRST FLOOR PLAN

LEGEND

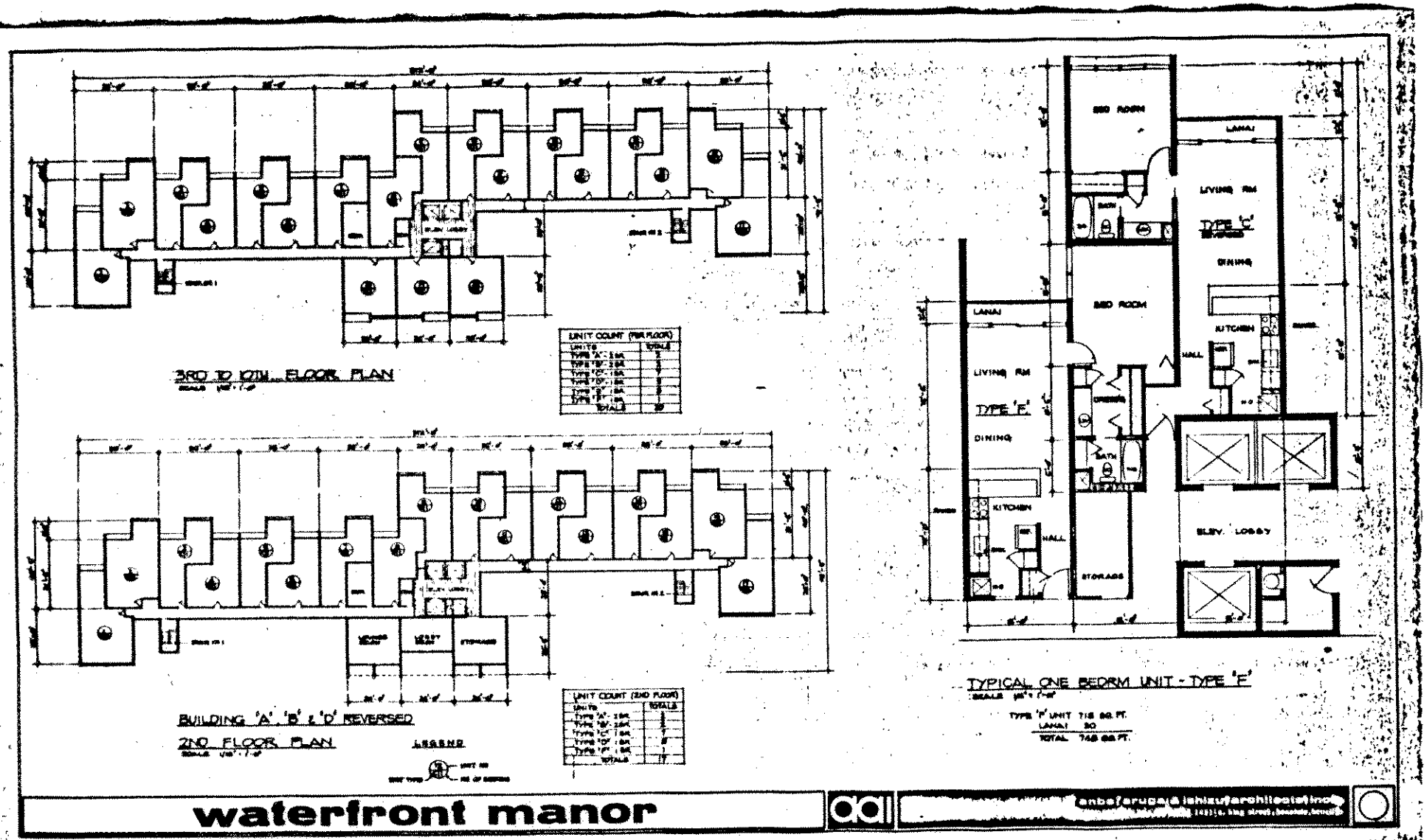
1ST FLR UNIT COUNT	
UNITS	TOTALS
TYPE 'A' - 2 BR.	1
TYPE 'B' - 2 BR.	1
TYPE 'C' - 1 BR.	6
TYPE 'D' - 1 BR.	6
TYPE 'E' - 1 BR.	1
TOTALS	15

BLDG UNIT COUNT	
UNITS	TOTALS
TYPE 'A' - 2 BR.	19
TYPE 'B' - 2 BR.	19
TYPE 'C' - 1 BR.	87
TYPE 'D' - 1 BR.	49
TYPE 'E' - 1 BR.	34
TYPE 'G' - 1 BR.	10
TOTALS	177

waterfront manor

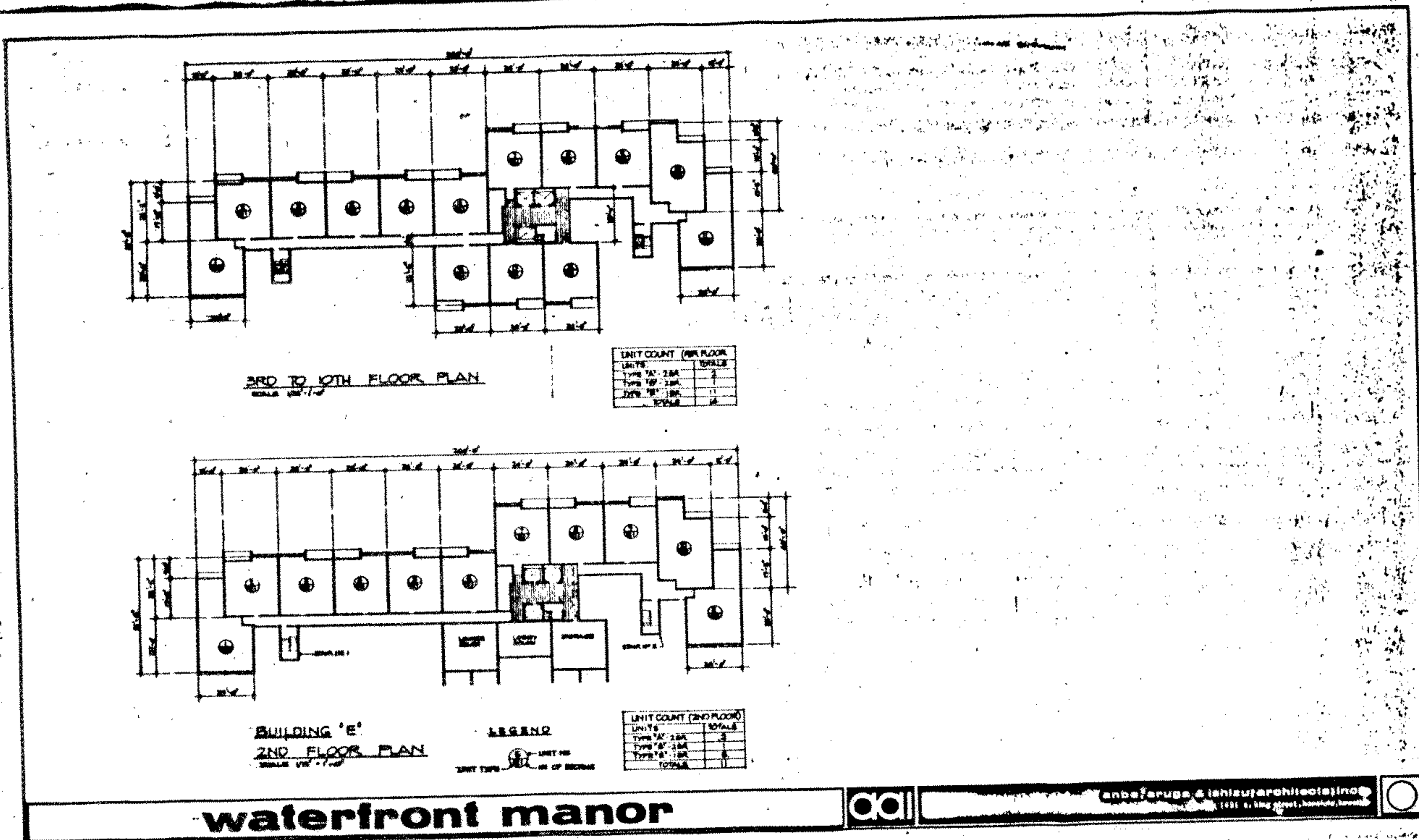
A-45

PRELIMINARY - SUBJECT TO CHANGE

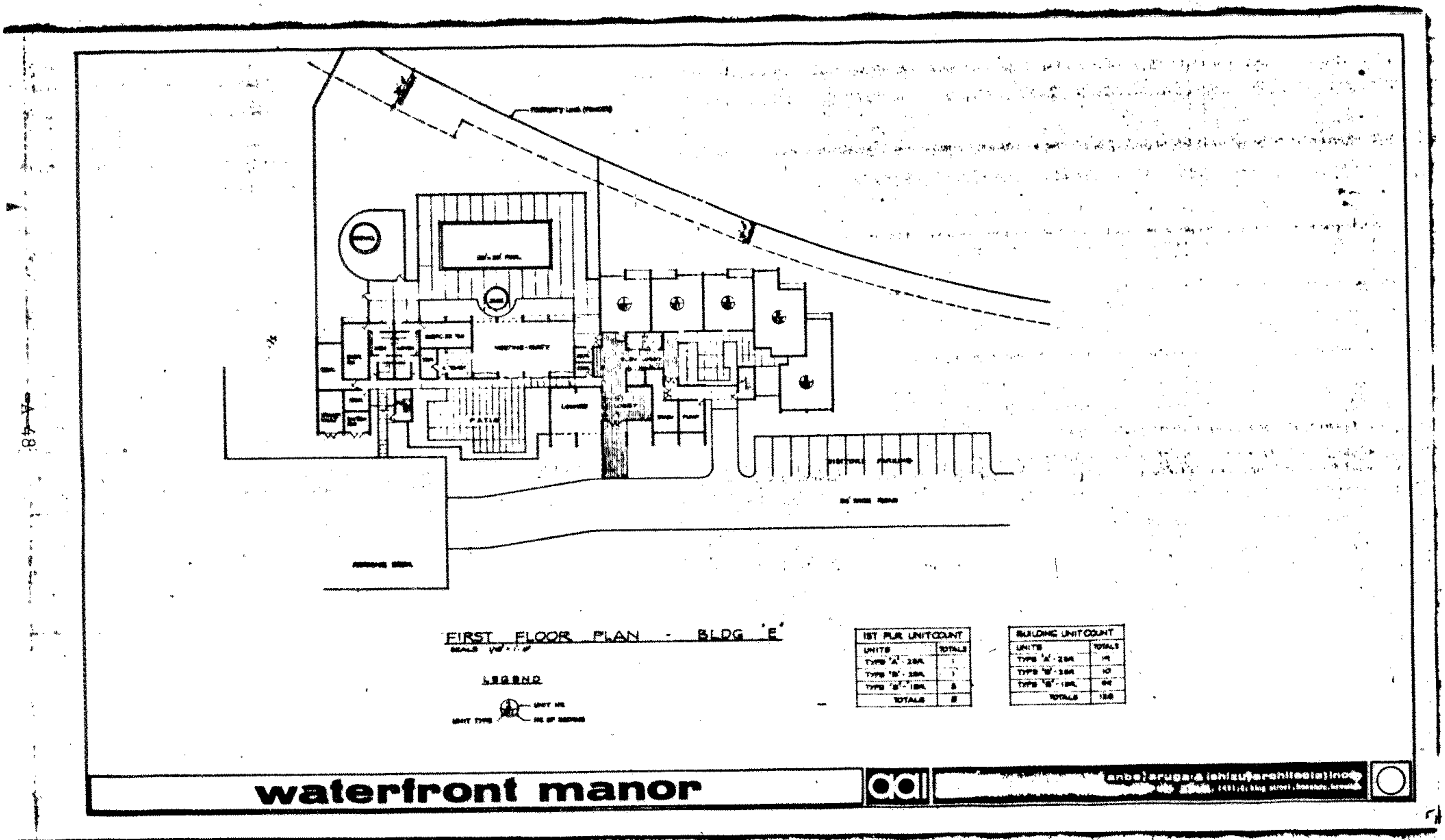


A-46

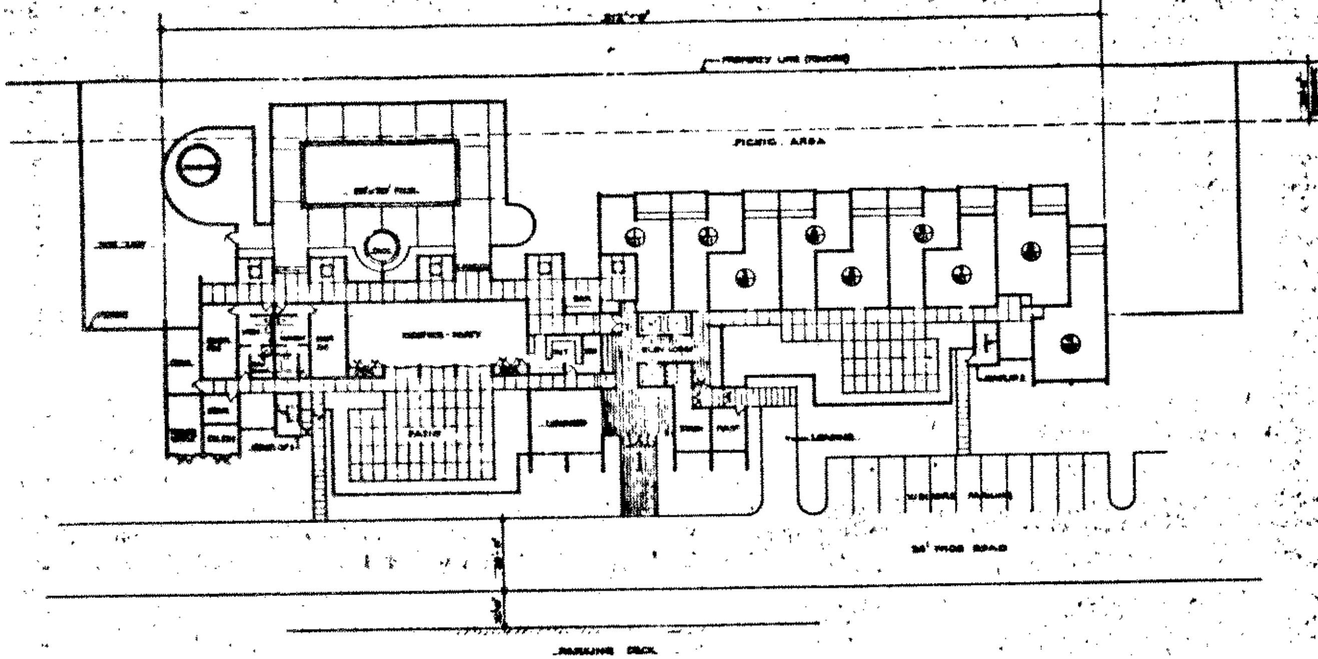
PRELIMINARY - SUBJECT TO CHANGE



PRELIMINARY – SUBJECT TO CHANGE



PRELIMINARY – SUBJECT TO CHANGE



BUILDING 'A', 'B' & 'D' REVERSED

FIRST FLOOR PLAN

LEGEND

1ST FLR UNIT COUNT	
UNITS	TOTALS
TYPE 'A' - 2BR	1
TYPE 'B' - 2BR	1
TYPE 'C' - 1BR	4
TYPE 'D' - 1BR	3
TOTALS	9

BLDG UNIT COUNT	
UNITS	TOTALS
TYPE 'A' - 2BR	19
TYPE 'B' - 2BR	19
TYPE 'C' - 1BR	47
TYPE 'D' - 1BR	49
TYPE 'E' - 1BR	34
TYPE 'F' - 1BR	4
TOTALS	[illegible]

waterfront manor

anbe, aruga & ishizu / architects, inc.

PRELIMINARY — SUBJECT TO CHANGE

APPENDIX VII

ENVIRONMENTAL ASPECTS OF STORM WATER RUNOFF

PROPOSED WATERFRONT MANOR PROJECT

Leeward Oahu, Hawaii

Prepared by

Gordon L. Dugan, Ph.D.
Environmental Consultant

December 1980

The proposed Waterfront Manor residential development is located on the northern edge of Middle Loch, Pearl Harbor, on the leeward side of Oahu, Hawaii, as shown in Figure 1. The 18-acre project site, outlined in Figure 2, is separated from Middle Loch by the Hawaiian Electric Company's 40-foot wide property, which follows along the shoreline of Middle Loch, and forms the southern boundary of the project. Presently the project site could be classified as semi-rural to undeveloped with dense grass and brush vegetation.

The site area which receives an annual rainfall of approximately 30 inches is underlain by approximately seven (7) acres of Class "C" soil, and eleven (11) acres of Class "D" Soil (U.S. Soil Conservation Service Soil Classification System). Soils are classified from "A" to "D", with Class "A" having the highest water intake rates and Class "D" soils the lowest. In addition, the groundwater is brackish below the project site, with caprock fronting the southern border of the project site, as shown in Figure 1.

Presently, the project site area is the general receptacle for storm drainage from approximately 59 acres of land mauka of the site. This area is primarily bounded by the Waipio Point Access Road and Farrington Highway. The principal mauka storm water runoff is from Waipahu High School and its athletic field, a portion of the Waiawa Interchange, and part of the U.S. Naval reservation. There are presently three (3) storm drain outlets into Middle Loch from the project site area, in addition to an adjacent drainage ditch which receives storm water runoff from 16 acres of the U.S. Naval reservation.

In order to meet the drainage requirements for the 18-acre project site and the mauka storm water contributing area three (3) new storm drainage outlets are being proposed. The three (3) new storm drainage outlets designed by Park Engineering, Inc., Honolulu, according to the City and County of Honolulu "Storm Drainage Standards" (1969) are planned to receive storm water flow from a total of 74 acres. As such, the total volume of storm water actually entering Middle Loch would not be expected to change appreciably, inasmuch as percolated water would eventually flow subsurfacely into Middle Loch, except for the portion being lost to evapotranspiration by the present vegetation on the project site. The site being underlain by Class "C" and "D" soil tends to inhibit rapid percolation. However, the biological filtering action of the present site would be decreased, although a grassed silting basin an a pond are being incorporated into the project's storm water outlet drains.

According to the new (1979) State of Hawaii Public Health Regulations, Chapter 37-A (PHR, 1979), Water Quality Standards, the Pearl Harbor estuaries are designated as "Class 2". A recent report entitled "Pearl Harbor Middle Loch Water Quality Survey" (Department of Health, 1979), which covered a sampling period from February to July 1979 involved the collection and analysis of water samples, and the collection and analysis of sediment and biota samples for heavy metals and pesticides. The six (6) month sampling period included wet and dry weather periods. The water sampling sites, located along the shoreline of Middle Loch and in the Waipahu Canal were south of

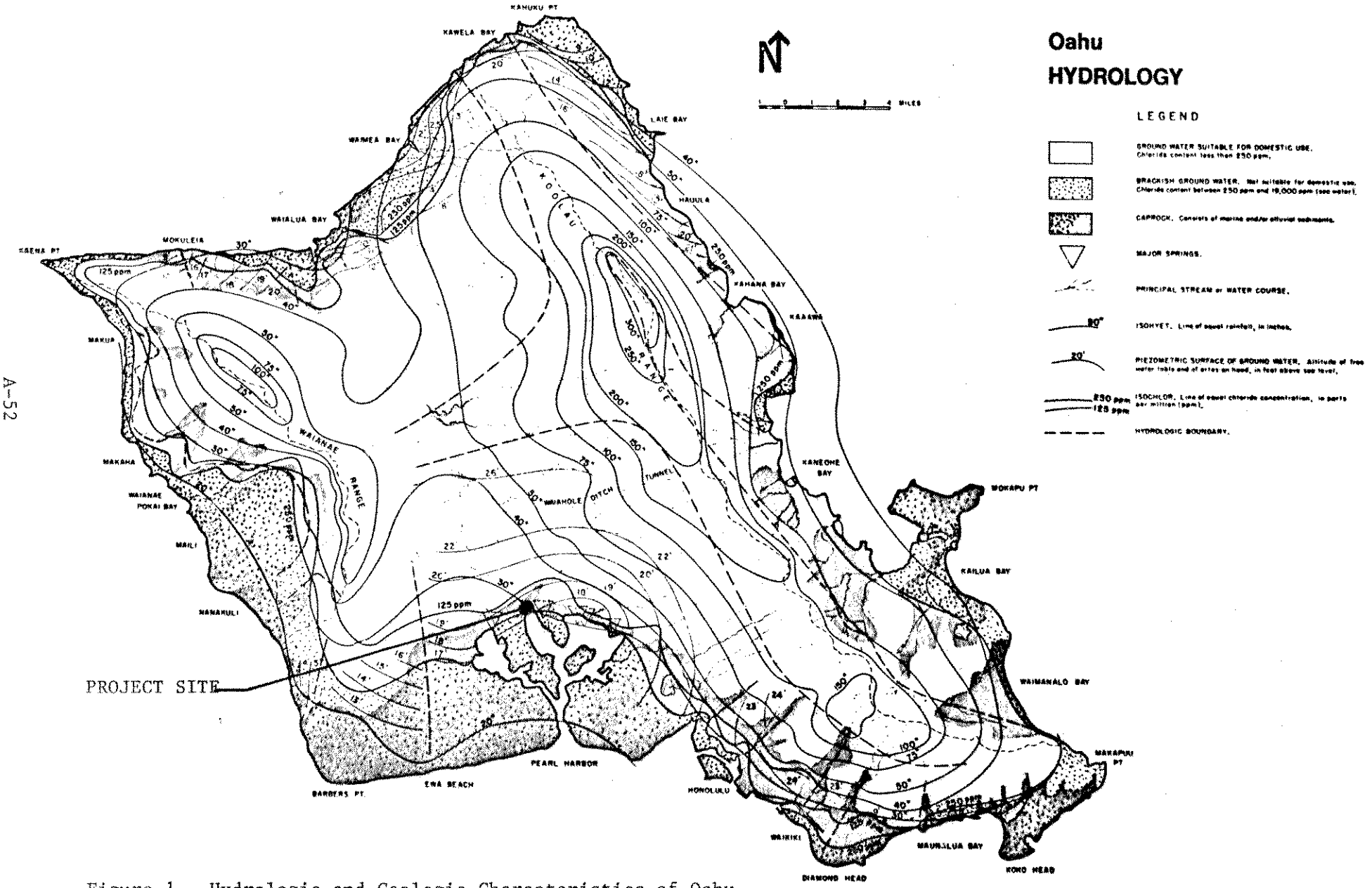


Figure 1. Hydrologic and Geologic Characteristics of Oahu

(Source: "2020 Plan," Board of Water Supply, City & County of Honolulu, page 13, February, 1971)

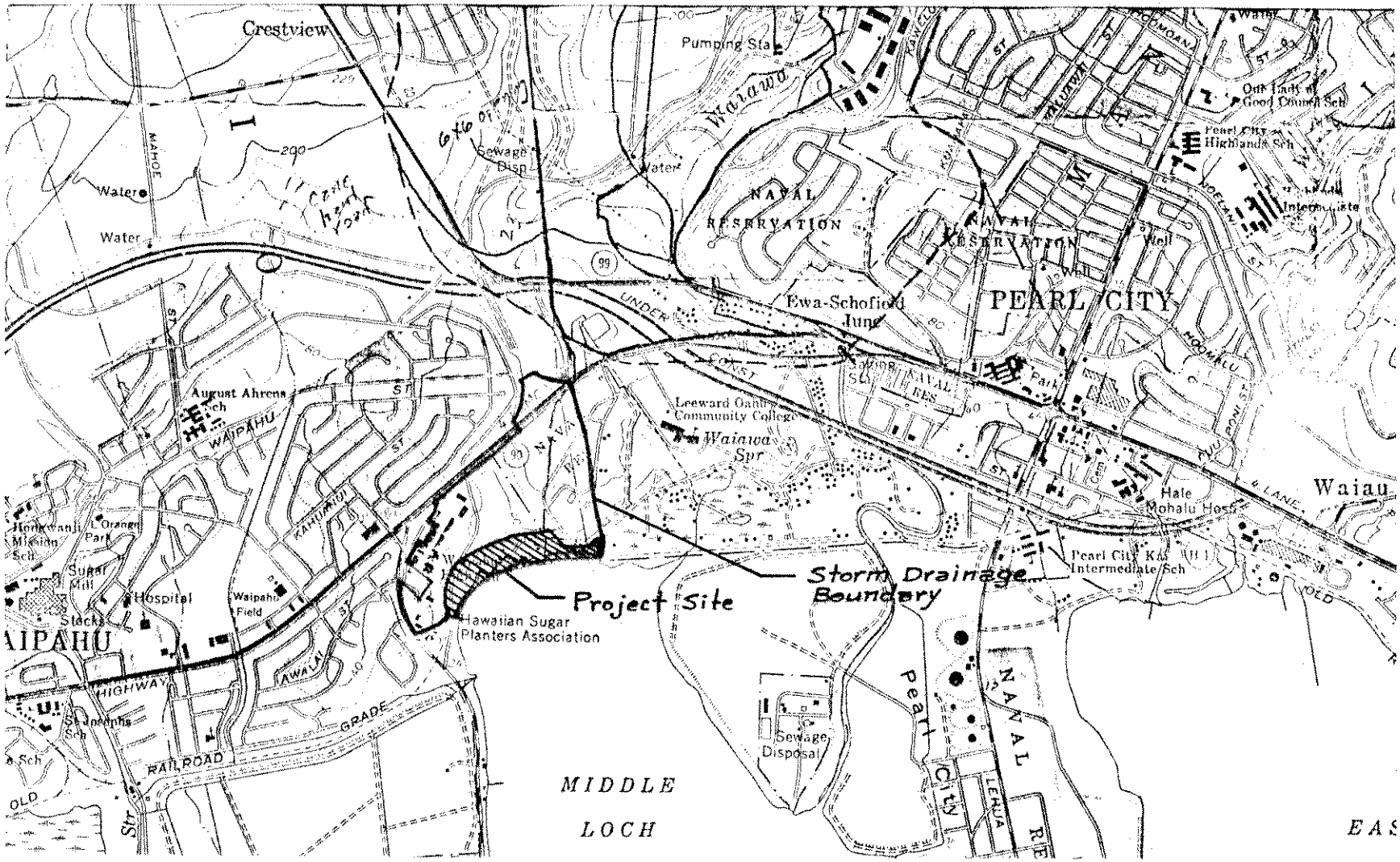


Figure 2. Site Location, Waterfront Manor Residential Development, Leeward Oahu, Hawaii

the project site. The shoreline sampling sites vary from near the project site to up to 2,000 feet away. At the six (6) sampling sites the total nitrogen values exceeded the State's standards from 42 to 100 percent of the time, while the phosphorus values were from 17 to 50 percent in violation.

In order to evaluate the hydraulic and constituent output changes from the proposed residential development, Table 1 was developed. The formulation of the Table utilized methods and data developed by the U.S. Soil Conservation Service (Foote, et al, 1972) and the Hawaii Environmental Simulation Laboratory (Lopez and Dugan, 1978), data from local (Fujiwara, 1973) and national storm water and constituent output values (Loehr, 1972; 1974), and rainfall events from the U.S. Weather Bureau (USWB, 1962). The values presented in Table 1 are for comparative purposes only and are not intended to be representative of the accuracy implied by not "rounding-off," which was primarily for convenience of calculations and balancing.

As generally expected, although the area is underlain by soils of relatively poor permeability, the volume of surface water runoff from the 18-acre project site is calculated to increase from 1.0 acre-feet for the 1-hour, 1-year storm to 3.3 acre-feet for the 24-hour, 100-year storm.

Based on a present nitrogen output of 3.0 lb/acre-year (in accordance with local and national range values) at the project's long-term annual rainfall rate of 30 inches, and an average rainfall-runoff coefficient of 0.40; a phosphorus value of one magnitude less than nitrogen; and a suspended solids value of 750 mg/l the "1980" constituent output values were determined (Table 1). The developed (urbanized) storm water values were based on a Honolulu storm water study (Fujiwara, 1973). As can be observed in Table 1 the constituents all increase at the lower intensity storms, but decrease at the higher intensity storms, which is a direct result of a lower percolation rate.

Biocides presently in use tend to breakdown more readily in comparison to the more long lasting types of a few years ago, thus, for urbanized areas the types and concentrations are usually considered insignificant. In the Middle Loch survey (Department of Health, 1979) only chlordane and DDT were detected in Waipahu Canal and Middle Loch sediments.

From limited information heavy metal concentrations do appear to increase as a result of urbanization; however, the values reported by a local study were not greater than 0.5 mg/l. The affect of this low level of heavy metals on the receiving waters, if any, is presently undefined. The Middle Loch survey (Department of Health, 1979) of Waipahu Canal and Middle Loch reported that the metal concentrations in the sediments, in general, were similar to te baseline levels recorded for estuarine sediments thoughout Hawaii.

TABLE 1

Estimated Storm Water Runoff Volume and Constituent Changes due to the Proposed
Waterfront Manor, Leeward Oahu, Hawaii

Storm[a]			Storm Water Runoff											
			Hydraulic			Nitrogen[b]			Phosphorus[c]			Suspended Solids[d]		
			Development			Development			Development			Development		
Duration hrs	Recurrence Interval yrs	Quantity ins	1980 AF/event	Full AF/event	△ AF/event	1980 lb/event	Full lb/event	△ lb/event	1980 lb/event	Full lb/event	△ lb/event	1980 tons/event	Full tons/event	△ tons/event
1	1	1.3	0.2	1.2	+ 1.0	0.6	2.0	+ 1.4	0.1	0.2	+ 0.1	0.20	0.41	+ 0.21
1	5	1.8	0.5	1.8	+ 1.3	1.5	2.9	+ 1.4	0.1	0.3	+ 0.2	0.51	0.61	+ 0.10
1	10	2.2	0.8	2.4	+ 1.6	2.4	3.9	+ 1.5	0.2	0.4	+ 0.4	0.82	0.82	0.00
1	25	2.5	1.0	2.9	+ 1.9	3.0	4.7	+ 1.7	0.3	0.5	+ 0.2	1.02	0.99	− 0.03
1	50	2.8	1.3	3.3	+ 2.0	3.9	5.4	+ 1.5	0.4	0.5	+ 0.1	1.33	1.12	− 0.21
1	100	3.1	1.6	3.7	+ 2.1	4.8	6.0	+ 1.2	0.5	0.6	+ 0.1	1.63	1.26	− 0.37
24	1	2.2	0.8	2.4	+ 1.6	2.4	3.9	+ 1.5	0.2	0.4	+ 0.2	0.82	0.82	0.00
24	5	4.2	2.8	5.4	+ 2.6	8.4	8.8	+ 0.4	0.8	0.9	+ 0.1	2.86	1.84	− 1.02
24	10	5.1	3.9	6.7	+ 2.8	11.7	10.9	− 0.8	1.2	1.1	− 0.1	3.98	2.28	− 1.70
24	25	6.0	5.1	8.1	+ 3.0	15.3	13.2	− 2.1	1.5	1.3	− 0.2	5.20	2.75	− 2.45
24	50	7.0	6.4	9.6	+ 3.2	19.1	15.7	− 3.4	1.9	1.6	− 0.3	6.53	3.26	− 3.27
24	100	8.0	7.8	11.1	+ 3.3	23.3	18.1	− 5.2	2.3	1.8	− 0.5	7.96	3.77	− 4.19

a) From U.S. Weather Bureau "Rainfall-Frequency Atlas of the Hawaiian Islands," (1962)

b) Based on a nitrogen value of 1.10 mg/L for present (1980) conditions and 0.60 mg/L for (Full) development

c) Based on a phosphorus value of 0.11 mg/L for present (1980) conditions and 0.57 mg/L for (Full) developme

d) Based on a suspended solids value of 750 mg/L for present (1980) conditions and 250 mg/L for (Full) development.

Overall, the surface water runoff from the project site is expected to increase slightly, but the constituent (nitrogen, phosphorus, and suspended solids) outputs are considered to remain approximately the same for the storms under consideration.

It should be clearly delineated that the hydraulic and water quality aspects of storm water runoff were only considered for the present (1980) and completed project conditions; however, increased constituent loads will undoubtably result fron construction activities, especially if a significant storm occurs during the interim period between earth moving operations and soil stabilization completion. The impact of construction activities can be minimized by adhering to strict erosion control measures, particularly those specified in the City and County of Honolulu's Grading Ordinance (City and County of Honolulu, 1972), and in the State Department of Health's Water Quality Standards, Chapter 37-A (Department of Health, 1979).

BIBLIOGRAPHY

1. City and County of Hawaii. 1972. "An Ordinance Relating to Grading, Grubbing, and Stockpiling," Ordinance No. 3968, Bill No. 101.

2. City and County of Honolulu. March 1969. "Storm Drainage Standards," Department of Public Works, Honolulu, Hawaii.

3. Department of Health (State of Hawaii), 1979. "Pearl Harbor Middle Loch Water Survey, Intensive Survey Report," State of Hawaii, Pollution Investigation and Enforcement Branch, Environmental Protection and Health Services Division, Honolulu.

4. Foote, D.E., E.L. Hill, S. Nakamura, and F. Stephens. August 1972. "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii," U.S. Department of Agriculture, Soil Conservation Service.

5. Fujiwara, T.D. May 1973. "Characterization of Urban Stormwater Discharge from Separate Storm Sewers," an Master of Science Thesis, Department of Civil Engineering, University of Hawaii, Honolulu, Hawaii.

6. Loehr, R.C. December 1972. "Agricultural Runoff," ASCE Journal, Sanitary Engineering Division, Volume 98, SA6, pages 909-925.

7. Loehr, R.C. August 1974. "Characteristics and Comparative Magnitude of Non-Point Sources," Journal of Water Pollution Control Federation, Volume 46, Number 8, pages 1849-1872.

8. Lopez, N.C. and G.L. Dugan, 1978. "Estimating Peak Discharges in Small Urban Hawaiian Watersheds for Selected Rainfall Frequencies," Technical Memorandum Report No. 58, Water Resources Research Center, University of Hawaii, Honolulu.

9. Public Health Regulations, 1979. "Water Quality Standards, Chapter 37-A, State of Hawaii, Department of Health".

10. United States Weather Bureau. 1962. "Rainfall-Frequency Atlas of the Hawaiian Islands," Technical Paper No. 43, Washington, D.C.

APPENDIX VIII

PRELIMINARY DRAINAGE STUDY

WATERFRONT MANOR

Prepared by Park Engineering, Inc.

December, 1980

The drainage for this area totals approximately 97 acres and includes the project site (19 acres), a portion of Waipahu High School (20 acres), Waipahu High School Athletic Field (20 acres), a portion of the adjoining Navy lands (24 acres), and the Cane Haul Road makai of Farrington Highway (4 acres), and a portion of Waiawa Interchange (10 acres).

Approximately 13 acres of land on the easterly portion of the drainage basin (Navy land, 10 acres, and the project site, 3 acres) and 15 acres of land on the westerly portion of the drainage basin (Waipahu High School, 12 acres, and the project site, 3 acres) have overland storm drainage flow into Middle Loch. The remaining drainage basin of 69 acres flows towards the lowlands of the project site and discharges into Middle Loch through two (2) existing 24" reinforced concrete pipes.

The project site consists of approximately 19 acres. Approximately 3 acres of the easterly portion and 3 acres of the westerly portion have overland storm drainage flow into Middle Loch. Approximately 7.5 acres of the project drains into a 0.5 acres "wet" area and discharges runoff into Middle Loch through an existing 24" reinforced concrete pipe. The existing 24" pipe is subject to tidal action; however, the only tidal influence on the project is the drainage ditch approximately 3 feet wide and 125 feet long located parallel to the project boundary and along the southerly perimeter of the 0.5 acre "wet" area that is connected to the 24" pipe outlet. Within this 0.5 acres there seems to be natural springs that flow into the existing ditch at a rate of about 3 to 5 gallons per minute.

The remaining 3 acres of the project site drain toward a ponding area of approximately 1.75 acres. There is also an existing 36" reinforced concrete pipe installed by Waipahu High School Athletic Field at the northerly boundary of the project site that discharges storm water into the ponding area of 1.75 acres. The existing 24" reinforced concrete pipe in this area is plugged and there is no drainage into Middle Loch. During heavy rainfall, water ponds in this area would normally take 2 or 3 months before the areas can be dried.

There is also existing along the easterly boundary of the project site a 54" reinforced concrete pipe that has been installed to drain the Leeward Oahu Community College.

Located within the project site also are 3 existing wells; well 2359-08 (2" diameter), well 2359-09 (2" diameter), and well 2359-14 (10" diameter). The two 2" diameter wells have not been utilized for quite some time. The 10" diameter well was recently temporarily capped when agricultural operations ceased. It appears that since well 2359-14 was

capped, natural springs have appeared within the 0.5 acre "wet" area. According to Mr. Masaki, the former tenant farmer, no springs were active when the 10" diameter well was being utilized for watercress farming. The 3 existing wells will be permanently sealed when the project is constructed.

ALTERNATIVE #1

The 1.75 acre ponding area presently serves as a sedimentation basin because the 24" pipe is temporarily plugged. If the 24" pipe is reopened as intended, the lowland of the project does not act as a significant sedimentation basin. The project will require three (3) new drainage outlets to West Loch to accommodate drainage areas of approximately 44 acres, 27 acres, and 3 acres. Approximately 10 acres will be discharged into the existing 54" pipe. The two 24" pipe outlets will only be utilized to provide subterranean flow of water into West Loch.

The entire lowlands of the project will be filled to be be utilized as building sites and open spaces. The lowlands of the site are not significant to affect flood control, storm waves, sedimentation, recycling of nutrients, or to remove or filter pollutants.

ALTERNATIVE #2

The 0.5 acre "wet" area can be excavated to create a pond that could be used as an aesthetically pleasant amenity and as a sedimentation basin for the 44 acre drainage area. The remaining lowland will be filled to be utilized as building sites and open spaces. The drain outlet area for the 27 acre area can be depressed, if necessary, to create a sedimentation area before the storm waters are discharged into West Loch. The entire acreage for the drainage basin is covered with improvements, grass or brushes except for the Cane Haul Road section, and although there are only small amounts of sediments transported, the 0.5 acre pond will have a positive effect on the environment in recycling nutrients and in removing or filtering pollutants.

EXHIBITS

LIST OF EXHIBITS

EXH-1

October 10, 1979

Mr. Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Subject: Waterfront Manor
Tax Map Key: 9-4-08: 23
18.942 Acres
General Plan - Medium Density Apartment
Proposed Zoning - A-2 Apartment District
Availability of Water Service

Enclosed please find a preliminary site plan for the project and a letter from the Department of Parks & Recreation approving the transfer of their potable water usage for irrigating Makalena Golf Course to our project. In return the Developers of Waterfront Manor will provide non-potable water from a drainage canal at the Waipahu Park site. Pumps and force main will be installed to transport the water to Makalena Golf Course according to a report prepared by your Hydrology and Geology Section.

We would appreciate receiving a letter from your office stating that water service is available for this project. Your letter will be used as an exhibit for our zoning application.

Please call our office at your convenience should you have any questions.

Sincerely yours,

PARK ENGINEERING, INC.

Clarence K. Tanonaka

Clarence K. Tanonaka
Vice President

mf

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA
HONOLULU, HAWAII 96843

October 25, 1979

Mr. Clarence K. Tanonaka
Park Engineering, Inc.
Suite 2085
190 South King Street
Honolulu, Hawaii 96813

Dear Mr. Tanonaka:

Subject: Your Letter of October 10, 1979, on Water Service for Waterfront Manor in Waipahu, TMK: 9-4-08: 23

Water service can be made available for your proposed development. However, the developer will be required to install the following mains to provide the necessary fire protection:

1. About 900 linear feet of parallel 8-inch main along Awalai Street and Waipio Point Access Road from Awaiki Street to Poailani Circle.

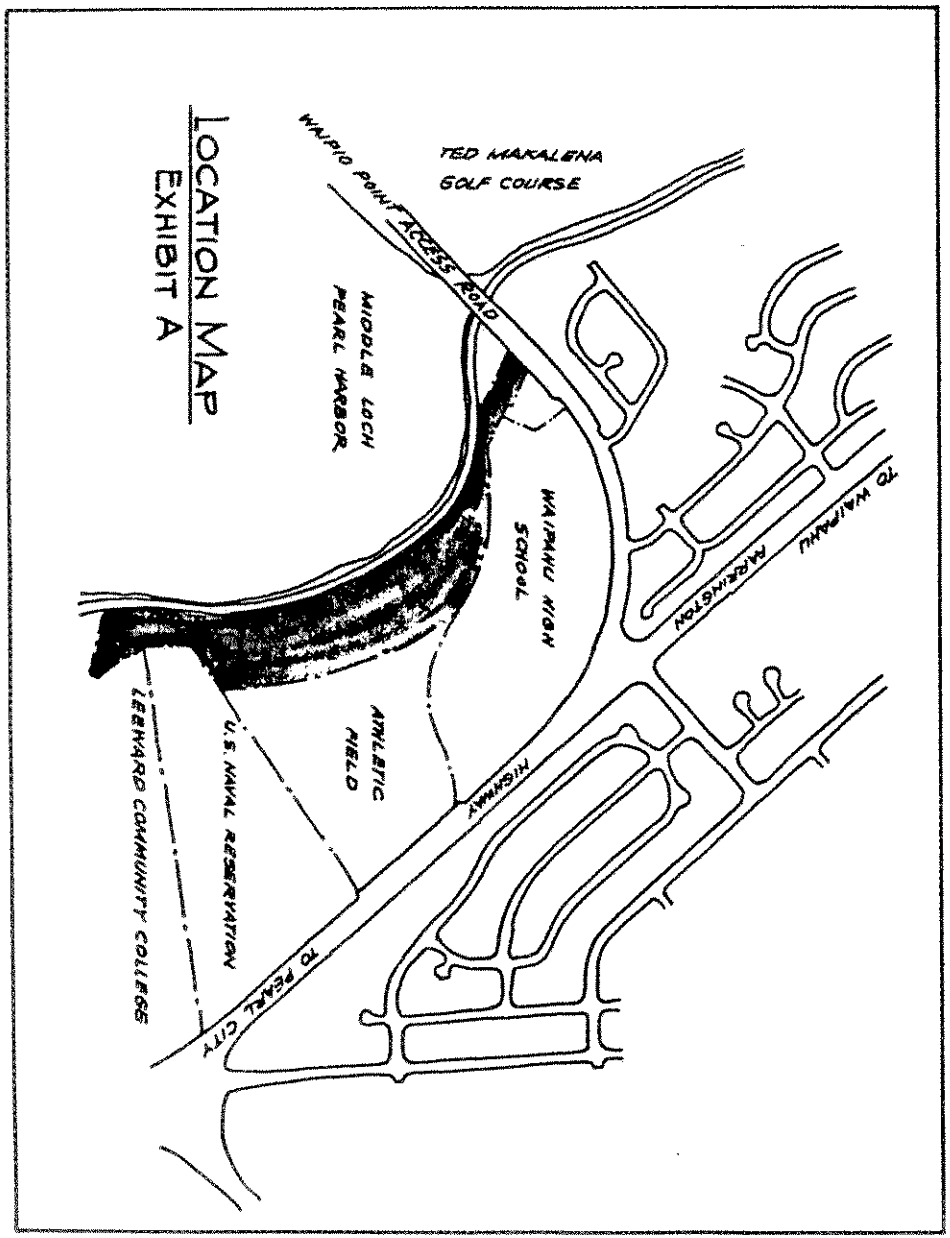
2. About 3,200 linear feet of 12-inch main from Poailani Circle to Building "A" in the development.

In addition, the developer will be required to develop the flow in the ditch near Waipahu Park for irrigation of the Makalena Golf Course in exchange for domestic water supply from our system and to seal the three wells on the property.

In turn, we will provide the developer of Waterfront Manor with 156,000 gpd of water which is the estimated water demand for the 520 high-rise apartment units.

Please coordinate your on-site fire protection with the Honolulu Fire Department's Fire Prevention Bureau. The Bureau will indicate the number and location of fire hydrants that will be required to provide adequate fire protection for the project.

EXHIBIT 1



October 25, 1979

The developer should contact the State Department of Land and Natural Resources to determine if a permit is required to use the surface water from the drainage canal at the Waipahu Park site.

The developer will be required to pay his proportionate share for our development of all off-site water system improvements such as source, reservoir, and mains that are required to serve the development.

Please submit your construction plans for your water mains, hydrant installations, and meter connections for our review and approval.

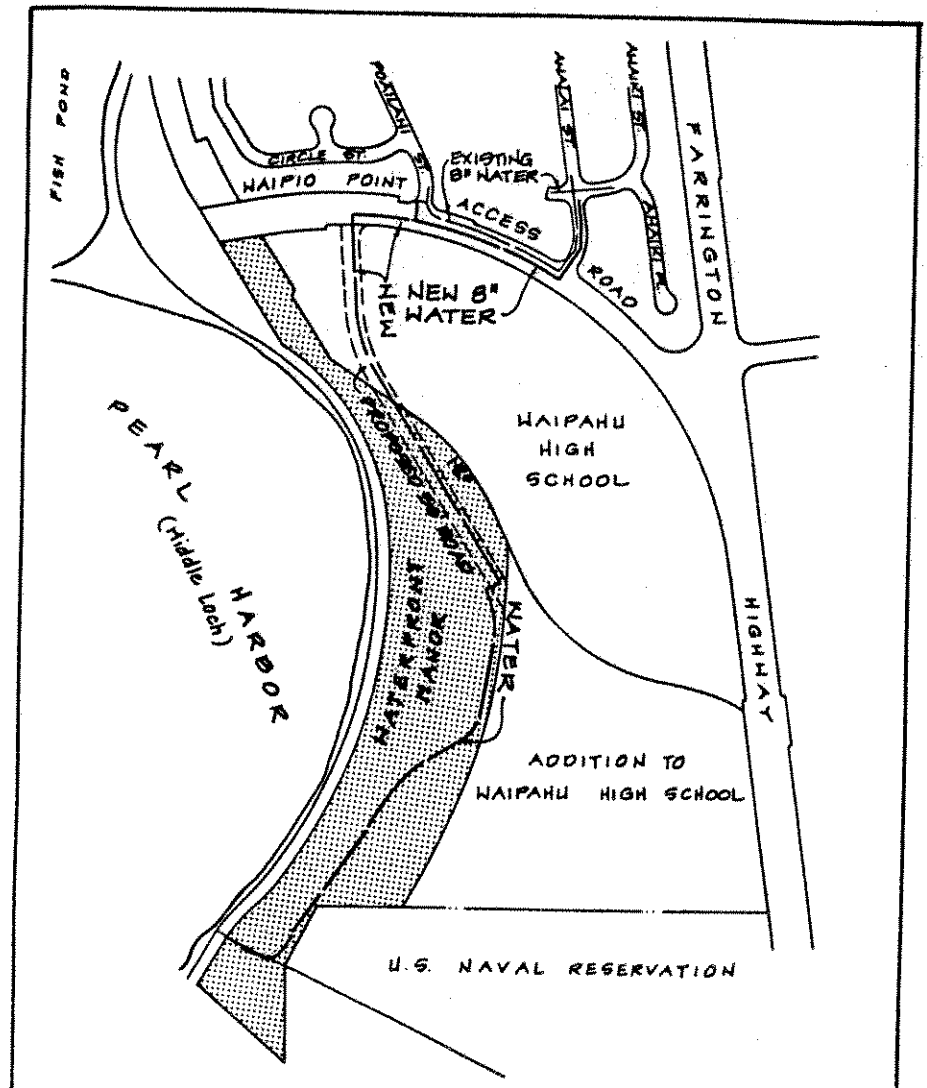
Sewage disposal should be coordinated with the City and County Division of Wastewater Management.

Should you have questions or require additional information, please call Albert Koga at 548-6122.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Manager and Chief Engineer



PROPOSED WATER LINES FOR WATERFRONT MANOR

WAIPAHU, OAHU, HAWAII

WATERFRONT MANOR PROJECT SITE

T. M. K. 9-4-08:23

DATE: APRIL 8, 1980

PARK ENGINEERING, INC.
PACIFIC TRADE CENTER SUITE 2086
190 S. KING ST. HONOLULU, HAWAII

February 6, 1980

Mr. Robert Chuck
Manager-Chief Engineer
Division of Water and Land Development
Department of Land and Natural Resources
P. O. Box 373
Honolulu, Hawaii 96809

Dear Mr. Chuck:

Subject: Waterfront Manor
Tax Map Key: 9-4-08: 23
18.942 Acres
General Plan - Medium Density Apartment
Property Zoning - A-2 Apartment District

The developers of Waterfront Manor propose to install an irrigation water system for the Makalena Golf Course in exchange for their present potable water supply demand which will be transferred to the Waterfront Manor project.

This exchange will lessen the withdrawal of water from the Pearl Harbor basin by approximately 0.78 million gallons per day as shown on the following analysis.

Your favorable recommendation to the Department of Land Utilization and Department of Parks and Recreation, City and County of Honolulu of this proposed water exchange will be greatly appreciated.

As shown on the enclosed sketch, the irrigation water supply will be provided by:

1. Diversion of the drainage channel flow at Waipahu Park.

2. Installation of two pumps encased in cesspool rings filled with filter material.

3. Installation of approximately 3100 linear feet of force main to Makalena Golf Course storage pond.

4. Lining of the storage pond and ensure that the existing pump is operable.

Enclosed also is the estimated cost of this proposed irrigation system.

EXH-4

The enclosed tabulated production from Well 2579-14 (Waterfront Manor), Wells 2300-11 and 2300-12 (Watanabe Farm) and Ditch flow at Farrington Highway bridge were obtained from the Honolulu Board of Water Supply.

Based on the average for the last 3 years, the existing water usage consisted of 0.70 mgd from the Waterfront Manor well, 1.70 mgd from Watanabe Farm wells and Natural Springs (Ditch flow at Farrington Highway bridge) and 0.25 mgd from the average use at Makalena Golf Course or a total withdrawal of 2.65 mdg from the Pearl Harbor basin.

The proposed irrigation system will utilize a portion of the 1.70 mgd from the ditch flow and 0.17 mgd at the Waterfront Manor project or total withdrawal of 1.87 mgd from the Pearl Harbor basin. The well at Waterfront Manor will be sealed, Thereby reducing the demand on the Pearl Harbor basin by 0.78 mgd (2.65 mgd - 1.87 mgd).

The records indicate that the spring flow in the drainage ditch is fairly constant and appears to be a reliable source for our irrigation system. Eight-year average is 0.52 mgd (1.90 mgd - 1.38 mgd) and the three-year average is 0.56 mgd (1.70 mgd - 1.14 mgd).

The Waterfront Manor project's water demand of 0.17 mgd is three times less than what was being drawn from the Waterfront Manor Well of 0.7 mgd.

Your early and favorable response will be greatly appreciated. Please call our office should you have any questions.

Sincerely yours,

PARK ENGINEERING, INC.

Clarence K. Tanonaka
Vice President-Treasurer

en

Enclosures

cc: Mr. Gilbert Scott & Miyuki Matsuno
(Dept of Parks & Recreation)
Ms. Karen Horita

EXHIBIT 2

Suite 2085, Pacific Trade Center ☐ 190 S. King Street, Honolulu, Hawaii 96813 ☐ Telephone (808) 531-1676

Waterfront Manor
Estimated Cost for
Golf Course Irrigation
Water Source and Transmission Main

February 4, 1980

1.	Pump Facilities		
	a. Sitework	$35,000	
	b. Pump Chamber	12,000	
	c. Pumps	20,000	
	d. Valves and Fittings	6,000	
	e. Float Well & Switch	5,000	
	f. Motor Control Housing	8,000	
	g. Electrical	30,000	
	Sub Total		$116,000
2.	8" Force Main (3,100 l.f.)		124,000
3.	Lake Lining (10,000 s.y.)		140,000
	Total Estimated Cost		$380,000

EXH-5

PRODUCTION FROM WELLS 2759-14 (at Waterfront Manor)

2300-11 & 2300-12 (at Watanabe Farm)

Year	Well 2759-14 (Waterfront Manor) MGD	Wells 2300-11 & 2300-12 (Watanabe Farm) MGD	Ditch Flow at Farrington Highway Bridge MGD
April 1979	0.86	0.91	2.02
September 1979	0.89	1.06	1.55
March 1978	0.58	1.14	1.32
August 1978	0.47	1.18	1.61
January 1977	0.76	1.29	1.99
April 1977	0.76	1.23	1.75
September 1977	0.61	1.28	1.78
January 1976	0.83	1.31	2.34
June 1976	0.89	1.22	1.59
March 1975	0.86	1.21	2.85
June 1975	0.89	1.43	1.77
March 1974	0.59	1.79	2.55
September 1973	0.75	1.83	1.86
September 1972	0.90	1.19	1.41
Average/for 3 yrs	0.76	1.38	1.90
Average/for 3 yrs	0.70	1.14	1.70

GEORGE R. ARIYOSHI
GOVERNOR

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

February 13, 1980

Mr. TyroneKusao, Director
Department of Land Utilization
City & County of Honolulu
Honolulu, Hawaii

Dear Mr. Kusao:

Waterfront Manor, Waipahu, Hawaii

The Department of Land and Natural Resources has been meeting with the developer, engineers and the City's Parks and Recreation personnel to discuss the developer's proposal to install an irrigation system for the Makalena Golf Course in exchange for the golf course's present use of potable water supply which will be transferred to the Waterfront Manor project. The Department's concern is with any ground water development in the Pearl Harbor area which is now under control of the Department of Land and Natural Resources under its Regulation 9 and Chapter 177, HRS.

In the review of the proposed irrigation system development, we find that the system will develop surface waters draining in the Waipahu drainage canal. This surface water originates from springs located at the Watanabe Farm and natural springs in the canal located upstream of the irrigation system point of diversion. Since surface water from the drainage canal is proposed to be developed, no ground water use permit is necessary from the Department of Land and Natural Resources.

In our discussion, the following items associated with the project were raised and we would like to share our thoughts on these items.

- The Watanabe Farm has filed with the Department of Land and Natural Resources their declaration of existing water use for the wells and they are the primary user of the spring water.

- We understand from the engineers that there are no downstream users of the waters flowing in the drainage canal; hence, no other parties are affected by the proposed use of the drainage waters.

EXH-6

- An existing well located at the Waterfront Manor's site is proposed to be sealed. The Department of Land and Natural Resources and the Honolulu Board of Water Supply will inspect the sealing of the well to assure that the work will be done properly to prevent subsurface leakage.

We fully support the concept of developing low-quality water for irrigation purposes and to preserve high-quality water for domestic uses.

Very truly yours,

SUSUMU ONO
Chairman of the Board

August 24, 1979

Mr. Miyuki Matsuno
Department of Parks and Recreation
City and County of Honolulu
Honolulu, Hawaii 96813

Dear Mr. Matusno:

Subject: Waterfront Manor
(Irrigation water for Makalena Golf Course)

At our meeting of August 14, 1979 we discussed the possiblity of the developers of Waterfront Manor to provide Makalena Golf Course with irrigation water in exchange for permission from the Board of Water Supply to use the Golf Course potable water demand for Waterfront Manor.

Further analysis of the three existing wells at Waterfront Manor has shown that a new irrigation well may be required.

We are presently working with the Board of Water Supply staff for an alternate irrigation water source. We would like to discuss this matter with you as soon as preliminary investigations have been completed.

It was encouraging to learn that your office had no objections to our proposal.

We will be contacting you shortly to further pursue this matter.

Sincerely yours,

PARK ENGINEERING, INC.

Clarence K. Tanonaka
Vice President/ Treasurer

kc

cc Karen Hoshida

EXH-7

September 24, 1979

Mr. Miyuki Matsuno
Department of Parks and Recreation
City and County of Honolulu
Honolulu, Hawaii 96813

Dear Mr. Matsuno:

Subject: Waterfront Manor
Tax Map Key: 9-4-08:23
18.942 Acres
General Plan - Medium Density Apartment
Proposed Zoning - A-2 Apartment District

As discussed with your staff on September 11, 1979, the developers of Waterfront Manor will install a non-potable irrigation water supply for your Makalena Golf Course in exchange for your present potable water demand that will be transferred for the development of Waterfront Manor.

The irrigation water supply will consist of the following:

1. Diversion of the drainage channel at Waipahu Park as shown on the sketch.
2. Installation of two pumps encased in cesspool rings filled with filter material.
3. Installation of force main to Makalena Golf Course storage pond.
4. Lining of the pond.

We would appreciate receiving a letter from your office stating your approval of the exchange. Your letter will be used as an exhibit for the zoning application.

Please call our office at your convenience should you have any questions.

Sincerely yours,

PARK ENGINEERING, INC.

Clarence K. Tanonaka
Vice President/Treasurer

cn

EXHIBIT 3

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

FRANK F. FASI
MAYOR

RAMON DURAN
DIRECTOR

October 3, 1979

Mr. Clarence Tanonaka
Park Engineering, Inc.
Pacific Trade Center
Suite 2085
190 South King Street
Honolulu, Hawaii 96813

Dear Mr. Tanonaka:

SUBJECT: MAKALENA GOLF COURSE, IRRIGATION SYSTEM

Your proposal to install non-potable irrigation water system at Makalena Golf Course is acceptable to us as stated in your letter of September 24, 1979, and with the addition that the existing pumps at the pond be checked and made operational.

Also, it is our understanding that this work will be done at no cost to the City.

Please call me if you have any questions.

Warm regards.

Sincerely,

RAMON DURAN, Director

RD:jf

EXH-8

August 13, 1979

Wallace Miyahira
Director & Chief Engineer
Department of Public Works
City and County of Honolulu
Honolulu, Hawaii 96813

Attention: Mr. Francis Aona

Gentlemen:

Subject: Waterfront Manor
Tax Map Key: 9-4-08:23
18.942 Acres
General Plan - Medium Density Apartment
Proposed Zoning - A-2 Apartment District

We have been retained by Herbert K. Horita to assist in obtaining an apartment use zoning so that the property can be developed. Enclosed is a print of the preliminary site plan for this project.

There is an existing 18" Trunk Sewer Line in back of the Leeward Community College. This project will connect to the existing 18" sewer line with 15" and 12" trunk lines as previously shown on plans prepared by Community Planning , Inc. titled "Entrance to Leeward Community College".

Waterfront Manor is a participant of the Pearl City Treatment Plant Addition. We understand that sewage treatment capacity is available for this project.

We would appreciate receiving a letter from your office stating that sewer service is available for this project. Your letter will be submitted to the Department of General Planning as part of the zoning application documents.

Please call us at your convenience should you have any questions.

Sincerely yours,

PARK ENGINEERING, INC.

Clarence K. Tononaka
Vice President/Treasurer

kc

Enclosure

cc: Horita Relty - Karen

EXH-9

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

WALLACE MIYAHIRA
DIRECTOR AND CHIEF ENGINEER

WPC 79-91

August 31, 1979

Mr. Clarence Tanonaka
Vice President/Treasurer
Park Engineering, Inc.
190 South King Street
Honolulu, Hawaii 96813

Dear Mr. Tanonaka:

Subject: Your Letter of August 13, 1979 Relating to Proposed Change in Zoning to A-2
Tax Map Key: 9-4-08: 23

The Pearl City Sewage Treatment Facility is now available and adequate for your proposed development, Waterfront Manor. The nearest existing gravity sewer is located at the Leeward Community College, approximately 1,200 feet from your proposed development.

If you have any questions, please call Mr. Albert Imamura at 523-4408.

Very truly yours,

WALLACE MIYAHIRA
Director and Chief Engineer

EXHIBIT 4

ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

Approving Agency	:	City & County of Honolulu Department of Land Utilization
Applicant	:	Herbert K. Horita Realty, Inc.
Agent	:	Environmental Communications, Inc.
Project Location	:	Waiawa-Waipio, Ewa District, Oahu
Tax Map Key	:	9-4-08: 23
Request	:	Shoreline Management Permit
Determination	:	EIS Required

I. BACKGROUND

A rezoning request for the above proposed 18+ acre project is presently being reviewed by the Department of Land Utilization. The rezoning request, submitted on December 17, 1979, is to change the zoning of the subject property from AG-1 Agricultural District and R-6 Residential District to A-2 Apartment District. However, the project site also lies within the Shoreline Management Area (SMA). A Request for Assessment for development within the SMA, at this time, will allow the applicant time to prepare an Environmental Impact Statement under the guidelines of Ordinance No. 4529, while awaiting a decision on the rezoning request. Final action on the rezoning request by the City Council must occur before any application for a Shoreline Management Permit is accepted for processing. A Corporation Counsel opinion of January 30, 1980, stated that "...if an applicant needs a zoning or planning change, or a State land use district boundary amendment, said changes must be obtained prior to the Council's [City] entertaining an SMP application."

II. PROPOSED ACTION

The applicant proposes to develop an 18.942-acre parcel of land by constructing 576 one- and two-bedroom condominium units in 4 eight-story buildings if zoning is granted. Each building will contain 96 one-bedroom and 48 two-bedroom units, for a total of 384 one-bedroom and 192 two-bedroom units.

A. Technical Characteristics

1. A 1,250-foot long, 40-foot wide access road within a 56-foot wide right-of-way will be constructed. The road will have 8-foot shoulders and 4-foot wide sidewalks on both sides of the road. There will also be private internal roads and driveways which will provide access and circulation within the development.

2. A recreation center will be constructed at the mauka, Diamond Head end of the site. Included in the proposed recreation center will be two tennis courts, a swimming pool, sun decks, pavilions, and parking for the recreation center.

3. There are about 8.8 acres of open space, ponds, and pedestrian walkways planned for the proposed development which will be used for active and passive recreation.

4. A total of 756 parking spaces (including 36 spaces for guest parking) will be provided, in compliance with the Comprehensive Zoning Code.

B. Economic Characteristics

1. The estimated cost of the proposed development, excluding land costs, is approximately $25.3 million. Financing will be obtained from private lending institutions. No governmental funds will be used.

2. It is anticipated that project construction will commence in the summer of 1981 and continue for about 20 months. The project will be constructed and sold in one phase.

C. Social Characteristics

1. The proposed project will attract a new population of approximately 1,400 people at completion.

2. These dwelling units are aimed at the lower- to moderate-income housing market, i.e., first-time real estate buyers.

3. This increase in population will generate additional requirements for public services and infrastructure. Infrastructure systems to be affected would include water, sewer, electricity, communication and drainage.

D. Environmental Characteristics

The 18.942-acre parcel of land is presently vacant and overgrown with weeds and scrub brush. The proposed project will convert this land into a residential apartment complex with accessways and recreational amenities.

EXH-10

EXHIBIT S

III. AFFECTED ENVIRONMENT

The affected property (18.942 acres) is bounded on the south by the Middle Loch of Pearl Harbor. The site is adjacent to Waipahu Intermediate and High Schools on the north and west, and the U.S. Naval Reservation to the north and east. Access from the project site to Farrington Highway will be provided by Waipio Point Access Road. The surrounding areas have been previously urbanized.

The site is presently zoned AG-1 Agricultural District, except for one acre which is zoned R-6 Residential District, located between the Waipio Point Access Road and the cane haul road. The entire site lies within the SMA. The Ewa-Makakilo District, in which the proposed project lies, has been designated in the City and County of Honolulu General Plan as a secondary urban center.

A. Major Impacts to the Special Management Area

The potential environmental impacts, as related to the significance criteria set forth in Ordinance Nos. 4529 and 77-100, are briefly identified in the following discussion. These and other impacts will be thoroughly addressed in the final EIS document.

1. The proposed project will create physical impacts to its surroundings during construction and after the project has been completed. The major impact will be the alteration of land form from undeveloped to a fully developed site containing 4 eight-story buildings with interior roads, parking, recreational amenities and landscaping.

2. Adequate access to and through the site must be provided.

3. Adequate disposal of liquid and solid waste, including drainage disposal, will be required.

4. The visual impact of the proposed project as it relates to the above must be examined.

5. The air and sonic environment will be affected by the proposed projects.

B. Mitigation Measures

The applicant must adhere to all applicable City and County of Honolulu and State of Hawaii regulations which would govern the construction and operation of the proposed project.

In the environmental impact statement, it will be the responsibility of the applicant to address in a comprehensive manner all potential impacts of the proposed project and mitigating measures.

IV. REASONS SUPPORTING DETERMINATION

The decision to require an EIS is based on the significance criteria found in Ordinance No. 77-100, Section 6. Specific considerations were as follows:

> "In assessing the significance of a development within the Shoreline Management Area the Director should confine his criteria to the policies and guidelines in Sections 3 and 4 of this ordinance."

Additionally, it was found that the project:

A. "Is individually limited but cumulatively has considerable effect on the environment."

B. "Detrimentally affects air...quality or ambient noise levels."

V. SUGGESTED AGENCIES TO BE CONSULTED IN PREPARATION OF EIS

City and County

Honolulu Fire Dept.
Dept. of General Planning
Dept. of Parks & Recreation
Board of Water Supply
Police Dept.
Dept. of Public Works
Dept. of Transportation Services

State of Hawaii

Dept. of Transportation
Dept. of Planning & Economic Development
Dept. of Land & Natural Resources
Dept. of Health
Office of Environmental Quality Control
Dept. of Agriculture

University of Hawaii

Environmental Center
Water Resources Research Center

Federal

U.S. Army Corps of Engineers
U.S. Fish & Wildlife Service

Community Organizations

Life of the Land
Outdoor Circle
American Lung Association of Hawaii
Waipahu Neighborhood Board No. 22
Pearl City Neighborhood Board No. 21

APPROVED
TYRONE T. KUSAO
Director of Land Utilization

TTK:ey

EXH-12

LETTER SENT TO CONSULTING AGENCIES/PARTIES, REQUESTING THEIR REVIEW AND COMMENTS.

ENVIRONMENTAL COMMUNICATIONS INC.

F. J. RODRIGUEZ, PRESIDENT

March 17, 1980

American Lung Association of Hawaii
245 North Kukui Street
Honolulu, Hawaii 96817

Gentlemen:

SUBJECT: Consultation Process Prior to Filing the EIS for the Proposed Waterfront Manor, Waiawa-Waipio, Ewa District, Oahu

Enclosed is a copy of the Environmental Impact Statement Preparation Notice (prepared by the Department of Land Utilization, City and County of Honolulu), for the proposed Waterfront Manor Project, Waiawa-Waipio, Ewa District, Oahu. Briefly, the applicant Herbert K. Horita Realty, Inc. proposes to develop an 18.942-acre parcel of land by constructing 576 one- and two-bedroom condominium units in 4 eight-story buildings if zoning is granted. Each building will contain 96 one-bedroom and 48 two-bedroom units, for a total of 384 one-bedroom and 192 two-bedroom units. A total of 756 parking spaces (including 36 spaces for guest parking) will be provided, in compliance with the Comprehensive Zoning Code. Presently, the site is vacant.

We have been retained to prepare the environmental documents necessary for the proposed project. Consequently, we are requesting comments from your organization on this initial environmental impact statement notice. We recognize your indicated interest in this matter and would appreciate your written comments.

We request your comments on or before April 21, 1980. If you require further information, please contact this office at 521-8391. If we are not contacted or receive comments prior to April 21, 1980, we will assume that your organization does not have significant comments or foresees any conflicts with this project at this time. Comments should be sent to: Environmental Communications, Inc., P.O. Box 536, Honolulu, Hawaii 96809, with a carbon copy to the Department of Land Utilization, 650 South King Street, Honolulu Hawaii 96813.

We appreciate your review and look forward to the comments you may provide.

Very truly yours,

F. J. Rodriguez

FJR/lka
Enclosures

cc: Herbert K. Horita Realty, Inc.
Department of Land Utilization

1152 BISHOP BUILDING SUITE 508 • P O BOX 536 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-8391

EXHIBIT 6

Letters from the State Department of Education (Jaunary 2, 1980) and the State Department of Land and Natural Resources (February 14, 1980) on the proposed 56-foot wide access road

GEORGE R. ARIYOSHI
GOVERNOR

CHARLES G. CLARK
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF BUSINESS SERVICES

January 2, 1980

Park Engineering, Inc.
190 South King Street
Pacific Trade Center, Suite 2085
Honolulu, HI 96813

Attn: Mr. Clarence K. Tanonaka
Vice President/Treasurer

Dear Sir:

After reviewing the alignment of the proposed 56-foot wide roadway from Waipio Point Access Road to your Waterfront Manor project and Waipahu High School, we note that if the roadway were extended to provide access to Leeward Community College or the future West Oahu College, the alignment would require Waipahu High School to provide all of the land.

The proposed alignment would penalize the functional operation of the Waipahu High School athletic field, causing the loss of the existing access road and parking lot.

We recommend that the alignment be adjusted so that the midline of the 56-foot roadway coincide with the mauka property line of Waipahu High School beginning at the Project Entry point as shown on the preliminary site plan for Waterfront Manor.

Should there be further questions, please contact our Facilities Branch at 548-6370.

Sincerely,

JAMES E. EDINGTON
Assistant Superintendent

JEE:HL:jl
cc: Planning Branch, DAGS
Leeward District

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

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

Susumu Ono
CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

February 14, 1980

Park Engineering, Inc.
Suite 2085, Pacific Trade Center
190 South King Street
Honolulu, HI 96813

Attention: Mr. Clarence K. Tanonaka
Vice President-Treasurer

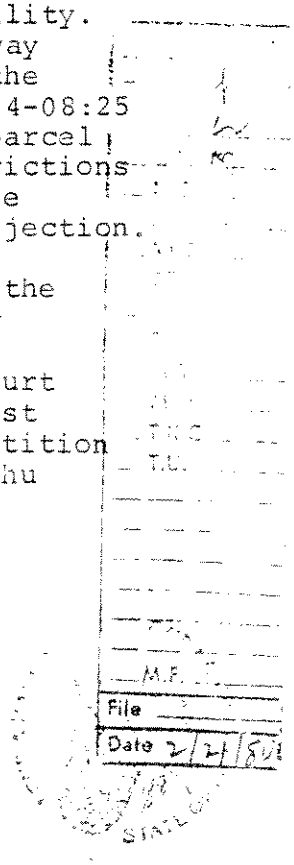
Gentlemen:

Subject: Waterfront Manor--18.942 acres, Tax Map Key: 9-4-08:23, Waipio, Ewa, Oahu

This is in response to your January 30, 1980, letter regarding the proposed construction of a 56-foot-wide roadway over Easement 360 and along the existing cane-haul road and terminating at the Waipahu High School Athletic Facility.

We have no objection to the proposed alignment of the roadway up to the Waipahu High School Athletic facility. However, we object to the alignment of the future roadway leading to the Leeward Community College being within the Waipahu High School parcel identified by Tax Map Key 9-4-08:25 (Waipahu High School Athletic facility parcel). This parcel was acquired from the Federal Government with use restrictions and reverter in the event of its violation. Roadway use is not an approved use, therefore, we must voice our objection.

With respect to the deletion of Easement 364 over the Waterfront Manor parcel, we do not foresee the need for clearances from the City and County of Honolulu nor the Federal Government. However, a petition to the Land Court of Hawaii for such deletion will be required. We request that the land owner of Waterfront Manor initiate the petition when the proposed new 56-foot-wide roadway to the Waipahu High School athletic facility has been constructed and accepted by the City as a public roadway.



As an alternative to the above, the State is willing to accept a new easement aligned on the proposed 56-foot-wide roadway between easement 363 and the boundary of the Waipahu High School Athletic facility parcel, in exchange for the deletion of easement 364. Such new easement to be deleted together with easement 360 and 363 upon the dedication and acceptance of the roadway by the City and County of Honolulu as a public road.

Should you have any questions, please feel free to contact our Land Management Division at 548-6460.

Very truly yours,

SUSUMU ONO
Chairman of the Board

cc: Department of Education
Facilities Branch
Department of Accounting
and General Services
Public Works, Planning Branch
Oahu Board Members
Oahu District Land Agent

EXHIBIT 7

ENVIRONMENTAL
COMMUNICATIONS
INC.

. J. RODRIGUEZ,
'RESIDENT

December 17, 1980

Mr. Hideto Kono, Director
Department of Planning and Economic
Development, State of Hawaii
Kamamalu Building
250 South King Street
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Kono:

SUBJECT: WATERFRONT MANOR CONDOMINIUM PROJECT:
CZM CONSISTENCY FILING

We are transmitting herewith the Coastal Zone Management (CZM) application for achieving Federal consistency with the Hawaii Coastal Zone Management Program.

We regret any inconvenience the late filing may have caused your office and will be pleased to meet with you or your designated staff representative to respond to any questions you may have regarding this application.

Thank you for your continuing interest and we look forward to hearing from you.

Merry Christmas,

F. J. Rodriguez

FJR/jrh

cc: Horita Realty, Inc.
Army Corps of Engineers

Enclosures: CZM Form, Drainage Study, COE Application,
Environmental Assessment, and EIS

1152 BISHOP BUILDING, SUITE 508 • P. O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8391

FEDERAL CONSISTENCY
SUPPLEMENTAL INFORMATION FORM

Date: _____

Project/Activity Title or Description: Waterfront Manor - A residential condominium project located at Waipahu,Oahu,Hawaii adjacent to Middle Loch,Pearl Harbor.

Location: Island Oahu District Ewa

Tax Map Key No. 9-4-08:23

Other applicable area(s), if appropriate _____

Est. Start Date: 1981 Est. Duration: 48 months

APPLICANT

Name & Title Herbert K. Horita Realty,Inc.

Agency/Organization _____

Address 2024 North King Street

Honolulu,HI Zip 96819

Telephone No. during business hours:

A/C (808) 847-4241

A/C ( ) _____

AGENT

Name & Title Environmental Communications,Inc.

Agency/Organization _____

Address P.O. Box 536

Honolulu,HI Zip 96809

Telephone No. during business hours:

A/C (808) 521-8391

A/C ( ) _____

CATEGORY OF APPLICATION (check one only)

[ ] I. Federal Activity [ ] III. OCS Plan/Permit

[ ] II. Permit or License [ ] IV. Grants & Assistance

TYPE OF STATEMENT (check one only)

[ ] Consistency

[ ] General Consistency (Category I only)

[ ] Negative Determination (Category I only)

[ ] Non-Consistency (Category I only)

APPROVING FEDERAL AGENCY (Categories II, III, & IV only)

Agency Dept. of the Army Corps of Engineers

Contact Person Manny Masuda

Telephone No. during business hours:

A/C (808) 438-9258

A/C ( ) _____

FEDERAL AUTHORITY FOR ACTIVITY

Title of Law P.L.92-500

Section 404

OTHER STATE AND COUNTY APPROVALS REQUIRED

Agency	Type of Approval	Date of Applic.	Status
DLNR - State of Hawaii	CDUA		
DLU - City & County Honolulu	SMA	11/8/80	EIS under review

CZM 9/79

HAWAII CZM PROGRAM
ASSESSMENT FORMAT

RECREATIONAL RESOURCES

Objective: Provide coastal recreational opportunities accessible to the public.

Policies

1) Improve coordination and funding of coastal recreation planning and management.

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

   a) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

   b) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites and sandy beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

   c) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

   e) Encouraging expanded public recreational use of County, State, and Federally owned or controlled shoreline lands and waters having recreational value;

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

   g) Developing new shoreline recreational opportunities, where appropriate, such as artificial reefs for surfing and fishing; and

   h) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions; and crediting such dedication against the requirements of section 46-6.

Discussion:

The Waterfront Manor project site is located approximately 55 feet from the shoreline of Middle Loch. The site is separated from the shore by a 40-foot parcel (parallel to the shoreline) owned by the Hawaiian Electric Company and between HECO's parcel and the water's edge, lands claimed by the Department of the Navy. Because the project site is set back 55 feet from the shore, the recreational use related to the shoreline is non-existent. Also, the private property and previous agricultural uses of the property (for ung-choi and watercress) was prohibited from the standpoint of public use.

The shoreline adjacent to the site is used by the general public for various shoreline activities including fishing (with nets), crabbing, and pole fishing.

The site itself is periodically visited by neighborhood children who catch "mosquito fish" and other pond fish in the "wet" (standing or moving water) portions of the site.

Policies: 1) Not applicable.

2a) This site is not felt to be unique or have significant recreational resources or potential; the existing shoreline will remain accessible to the present users and the applicant will landscape the 40-foot HECO-owned parcel (upon consent) to enhance the shoreline appearance.

2b) This site is not felt to be unique or have significant recreational value.

2c) The present condition of the project site (portions are designated "wetlands") would be unsuitable for a shoreline park.

2e) Not applicable.

2f) The drainage to be provided will not add a significant amount to the water going into Middle Loch at present. Total increase in runoff is estimated to be ____ cfs.

2g) Not applicable. The applicant does not intend to develop shoreline recreational activities.

2h) The applicant will provide on-site recreational facilities for the future residents of the project; no public facilities are planned.

HISTORIC RESOURCES

Objective: Protect, preserve, and where desirable, restore those natural and man-made historic and pre-historic resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies

1) Identify and analyze significant archaeological resources;

2) Maximize information retention through preservation of remains and artifacts or salvage operations; and

3) Support State goals for protection, restoration, interpretation, and display of historic resources.

Discussion:

There are no known historical or archaeological sites on the project parcel. A check with the records of the Historic Division, Department of Land and Natural Resources shows no historical or archaeological sites of significance in the area. Historically, the area was used for sugarcane cultivation and cattle grazing. See page 8, subsection 2.5 in the EIS.

A letter received recently from Department of Land and Natural Resources (dated December 15, 1980), states that there is a probability that certain buried deposits of archaeological and/or historical may be encountered. They have requested that they be informed when ground-disturbing activities are initiated to conduct a field inspection of the site at that time. The developer will comply with their request. (A copy of their letter is attached.)

SCENIC AND OPEN SPACE RESOURCES

Objective: Protect, preserve and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies

1) Identify valued scenic resources in the coastal zone management area;

2) Insure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

3) Preserve, maintain and, where desirable, improve and restore shoreline open space and scenic resources; and

4) Encourage those developments which are not coastal dependent to locate in inland areas.

Discussion:

1) There are no valued or unique (i.e. scenic) resources in the area. See pages 23, 24, and 25 on the EIS, subsection 5.2.4.

2) The project will impact the scenic planes from a few elevated positions above the project site. This is found to be unavoidable; based on various sight and architectural analyses and (because of the flat elevation) existing areas behind the site will be able to see the 10-story buildings as they look seaward towards Middle Loch.

3) The extent of the applicant's project in regards to the improvement and/or restoration of the shoreline is limited to the landscaping of the area between the project's makai boundary and the shoreline.

4) The project is set back from the shoreline area; it is zoned for apartment use and it is felt that the development of the parcel is consistent with the land use designation, the existing zoning, and the surrounding uses. Oahu's limited urban lands require that each project be viewed separately to determine if the priority of land development is to provide housing for our growing population or with the conservation of all coastal areas. In this case, the applicant finds that the project will not adversely affect the shoreline and that the use of the property for housing can coexist with the objectives of the coastal management zone. The shoreline in question is not considered a prime shoreline resource since the viewplanes do not look onto the ocean, but rather, towards a harbor storage area.

COASTAL ECOSYSTEMS

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

Policies

1) Improve the technical basis for natural resource management;

2) Preserve valuable coastal ecosystems of significant biological or economic importance;

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

4) Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate State water quality standards.

Discussion:

1) Not applicable.
2) The project is not anticipated to adversely or significantly effect the biological or economic importance of this shoreline or the surrounding area.
3) The plans for the project calls for the use of potable water (now used for irrigation for the Ted Makalena Golf Course) for the proposed project (approximately 100 percent of the potable water for the project is now used for irrigation of the Golf Course). The Golf Course will then use spring water which is now entering Middle Loch. The diversion and reservoir of the spring water at the Golf Course will be paid for by the applicant.
4) As indicated above, the applicant is participating in the management of potable water as a valuable resource.

Wetland designation. A portion of the site (to be defined specifically by the Corps of Engineers) lies within the COE's wetland area. This is discussed on pages 18 and 19, subsection 4.3.

The importance of a "wetland" is based on its suitability as a habitat for endemic or indigeneous vegetation, avifauna, aquatic plants and animals, and its function as a drainage feature (i.e. sediment basin). Studies on the flora, avifauna, water quality impact, and drainage have been completed (enclosed in the Draft EIS or for the drainage discussion attached to this document); based on these studies the "wetland" on the project site are not an important habitat for endemic flora or avifauna, and will not result in a significant impact on water quality (Middle Loch) or the total drainage basin.

ECONOMIC USES

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies

1) Concentrate in appropriate areas the location of coastal dependent development necessary to the State's economy.

2) Insure that coastal dependent development such as harbors and ports, visitor industry facilities, and energy generating facilities are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

3) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

    a) Utilization of presently designated locations is not feasible;

    b) Adverse environmental effects are minimized; and

    c) Important to the State's economy.

Discussion:

1) Housing is of critical need in the State and on the island of Oahu. The land is designated Urban and zoned for apartment use; it is felt that the use of the project site for housing is the priority especially after environmental impacts to the coastal zone are not found to be adverse or significant.

2) Not applicable.

3) The response to these policies is provided in item 1) above.

MANAGING DEVELOPMENT

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies

1) Effectively utilize and implement existing law to the maximum extent possible in managing present and future coastal zone development;

2) Facilitate timely processing of application for development permits and resolve conflicting permit requirements; and

3) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the general public to facilitate public participation in the planning and review process.

Discussion:

An EIS for the proposed project has been filed with the State Environmental Quality Commission (November 8, 1980). Acceptance or non-acceptance of the document will be determined by the Department of Land Utilization, City and County of Honolulu on or before January 8, 1980.

Other permits and applications as identified on page 74 of the EIS.

Department of the Army Permit Application has been filed.

Conservation District Use Permit Application has been filed.

EIS - presently in draft form; in process at this date.

COASTAL HAZARDS

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

Policies

1) Develop and communicate adequate information on storm wave, tsunami, flood, erosion, and subsidence hazard;

2) Control development in areas subject to storm wave, tsunami, flood, erosion, and subsidence hazard;

3) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

4) Prevent coastal flooding from inland projects.

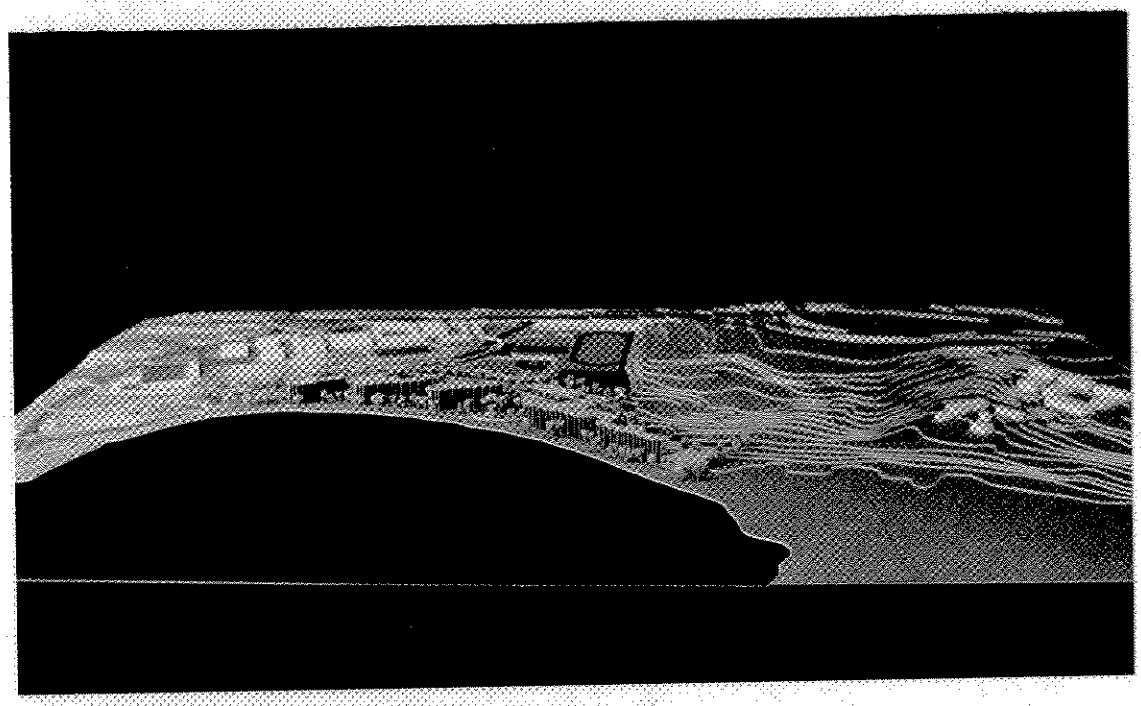
Discussion:

The site is not subject to tsunamis or severe flooding. (Reference: Flood Insurance Rate Map (FINAL FORM) Island of Oahu, City and County of Honolulu).

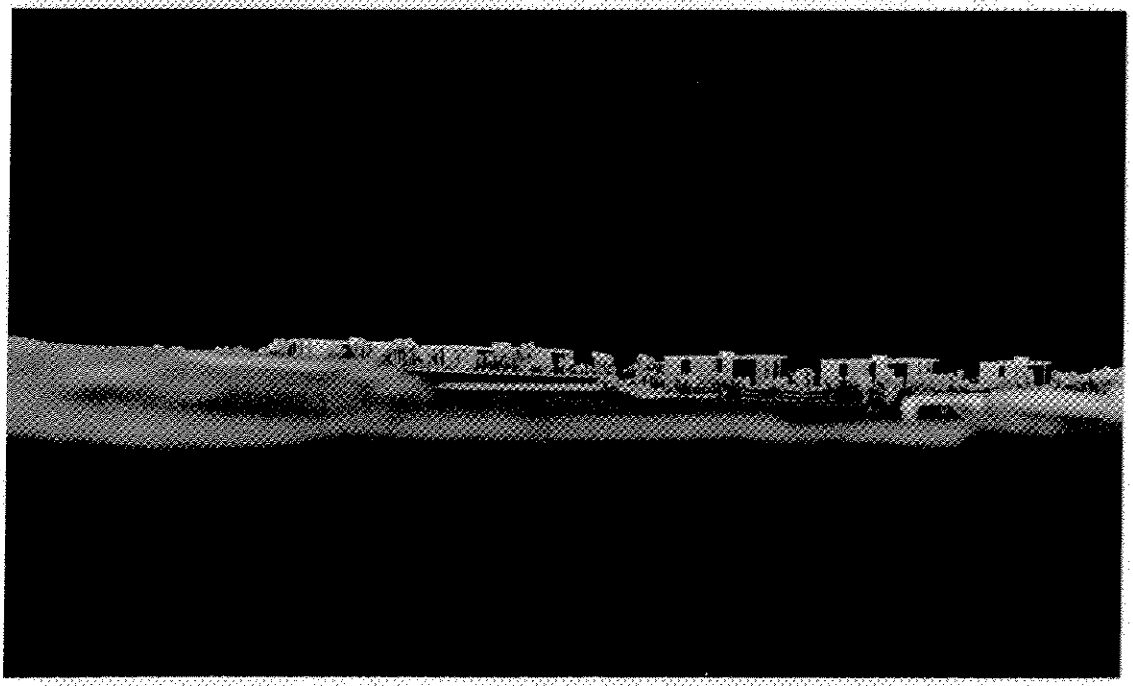
There are no known or anticipated erosion or subsidence hazards.

EXHIBIT 8

PHOTOGRAPHS SHOWING THE WATERFRONT MANOR MODEL



View of the Waterfront Manor model from Middle Loch looking mauka. The project is in the forefront with Waipahu High School and athletic field above the site. Leeward Community College is on the extreme right-hand side. The white lines show the contours (at 5-foot intervals).



View of the model from mauka looking makai. This angle represents the view from Waiawa Interchange to the project site. The interchange is the highest adjacent elevation from which the project's buildings can be seen.