

ENVIRONMENTAL IMPACT
STATEMENT
KAHALUU COMMERCIAL &
RESIDENTIAL DEVELOPMENT

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
FOR THE PROPOSED
KAHALUU COMMERCIAL AND RESIDENTIAL
DEVELOPMENT**

AUGUST 1981

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1. SUMMARY

Project Name: Kahaluu Commercial and Residential Development

Agency Action: The project site lies within the Special Management Area (SMA), identified in Ordinance 4529, City and County of Honolulu. A Shoreline Management Area Permit Application must be submitted to the Department of Land Utilization (DLU), City and County of Honolulu. An accepted Final EIS document is required (as determined by DLU) as part of the application submittal.

Accepting Authority: Department of Land Utilization, City and County of Honolulu

Location of Site: The project site is located on the Kahuku side (east) of Kahaluu Stream Bridge and the Kahaluu Multi-Purpose Lagoon in Kahaluu, Koolaupoko District. Kamehameha Highway and Waihee Road front the north and west sides of the site, respectively.

Project Site Size: 15.3± acres

Site's Address: 47-114 Waihee Road

Tax Map Key: 4-7-12: 12 and 27

Zoning: B-2 (Business) - 7.028 acres
R-3 (Residential) - 5.580 acres
R-6 (Residential) - 2.675 acres

Applicants: Market City, Ltd.; Joanna Cho Lau;
Pacific Warehouse, Inc.

Agent for the EIS: Environmental Communications, Inc.
P.O. Box 536
Honolulu, Hawaii 96809
Telephone: 521-8391

Architect: Wong, Sueda and Associates, Inc.

Project Description:

The applicant proposes to construct a commercial complex with a total of 96,000 square feet on the business zoned portion of the project site (7± acres). On the mauka residential-zoned portion of the site, (6.8± acres) the applicant proposes to create a 21-lot single-family residential subdivision. No dwelling structures will be built by the developer; only the lots will be sold in fee. The residential-zoned portion of the site adjacent to Kamehameha Highway (1.3± acres) will

be landscaped and maintained as a buffer strip between the proposed development and the Highway.

Probable Environmental Impacts:

- (1) Impact on the physical environment is not anticipated to be significant or adverse. The site is presently cleared and vacant with stockpiles of fill material from the creation of the Kahaluu Multi-Purpose Lagoon on the east of the site.
- (2) Environmental impacts (short-term) will include dust, noise, and traffic disruptions due to the grading and construction on the project site. These impacts will be mitigated to a large extent by adhering to the Grading Ordinance, air quality standards, and construction noise standards and regulations.
- (3) Long-term environmental quality impacts include: the discharge of surface water runoff into the lagoon, possible discharge of (5,000 gallons per day) sewage effluent (after tertiary treatment) into Waihee Stream; increased vehicular air emissions; (although no violation of present ambient air quality standards is expected); increased noise from the project site; significant alteration of the project site and increased visibility from the surrounding areas.
- (4) The development of the project site is consistent with the present zoning; however, the General Plan and proposed Development Plan for the District call for maintaining the area in a rural and/or agricultural setting.
- (5) The site will commit the land to an urban use; recreational uses of the entire site will be foreclosed. The site has, in various studies, been identified for recreational purposes related to the use of the lagoon.
- (6) The existing infrastructure, e.g. telephone, electricity, governmental services, are available and can adequately accommodate the proposed project. The method of sewage treatment and disposal is presently being considered. The Board of Water Supply will not commit potable water to the development (31,000± gallons per day estimated) until the construction drawings or building permits are reviewed and it is determined that sufficient water and facilities are available to serve the development.
- (7) Economic impacts will include a significant increase in income generation of the project site. Additionally, taxes (sales, property, income) will be generated. No governmental monies will be used for the development of the proposed project. It is estimated that 173 jobs (75 percent of which will be full-time) will be created. The value of the surrounding properties will likely increase because of the commercial/residential use of the project site.
- (8) Based on the market analysis prepared for this development, retail expenditures in the area will be sufficient to support the commercial development. The growth of the Kahaluu area

has been significant in the past ten years and further growth is anticipated as the number of residential units continue to increase in this area. The commercial area will serve the retail shopping and service needs of the present and future community in the Kahaluu area.

Alternatives Considered:

Several alternatives to the proposed development were considered in the EIS; these included: (1) no action alternative, (2) residential use only alternative, (3) recreational uses of the project site, and (4) agricultural use of the site. For the most part, these alternatives were found to be inappropriate because of the intrinsic economic value of the project site due to the underlying zoning.

2. PROJECT DESCRIPTION

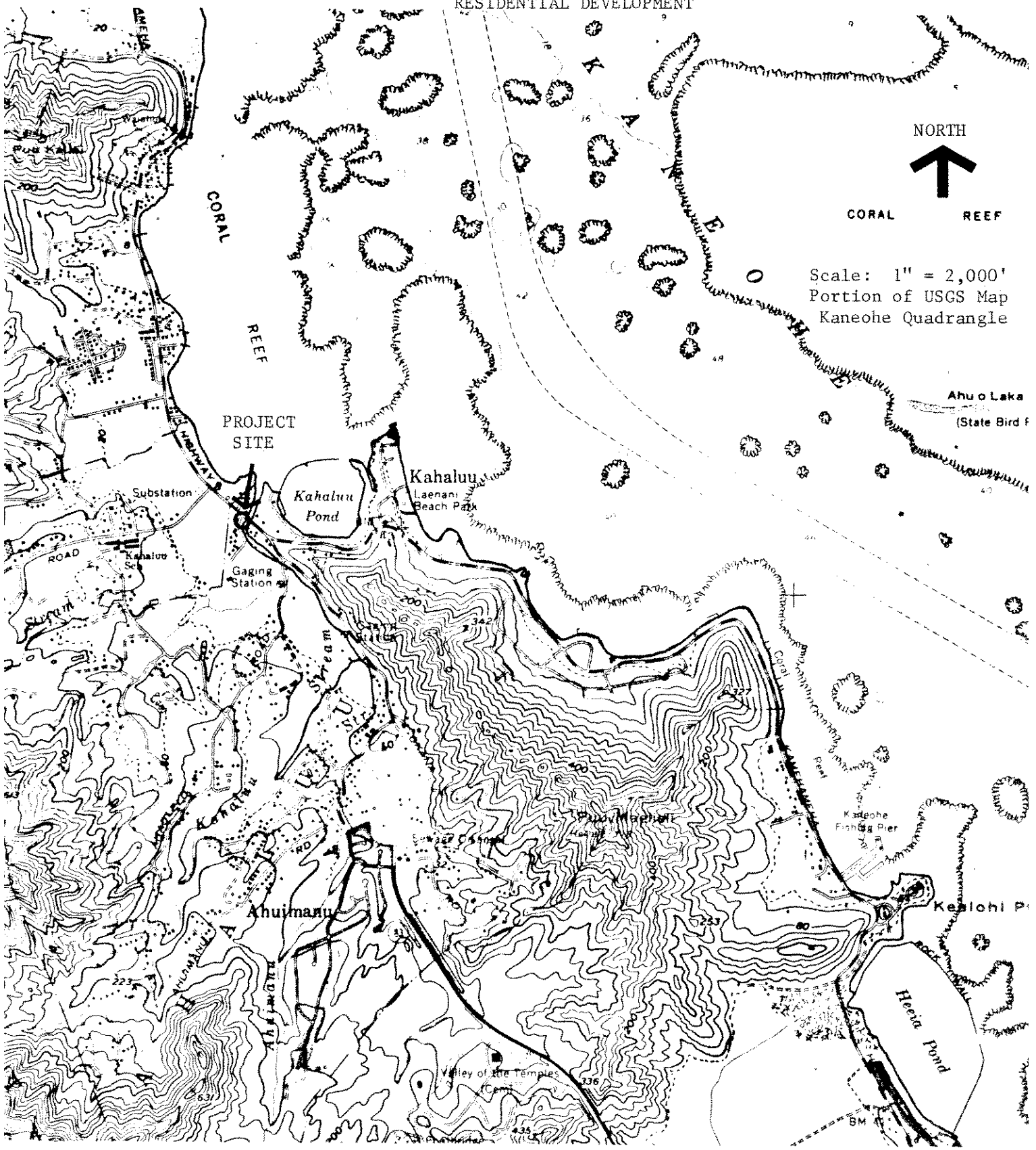
2.1 General Description of the Proposed Action. The 15.3-acre project site is located on the Kahuku side of Kahaluu Stream Bridge, in Kahaluu, Koolaupoko District (see Figure 1). Kamehameha Highway and Waihee Road are located to the north and west of the site respectively. The project consists of:

- (1) construction of a commercial complex with a total of 96,000 square feet on the business zoned portion of the site (B-2 Business District, 7± acres);
- (2) creation of a 21-lot, single-family residential subdivision on the residential-zoned (R-6, 1.2± acres, R-3, 5.6± acres) mauka portion of the project site. No dwelling units will be developed by the developer; the lots will be sold in fee.
- (3) the residential-zoned portion (R-6, 1.3± acres) of the site adjacent to Kamehameha Highway (between the Highway and the B-2 zoned parcel) will be landscaped and maintained as a buffer strip between the proposed development and the Highway.
- (4) The present depth of the R-6 zoned portion, which is presently establishing the limit of development, is far in excess of the required Department of Planning right-of-way setback and yard requirement of the CZC. In the future, the owner may elect to seek approval to use that portion up to the yard setback by way of an appropriate means of action (i.e. special permit for off site parking, etc.).

2.2 Summary of Technical Data. The following provides details on the proposed project. Figures 2, 3, and 4, show the site analysis, commercial site plan and subdivision site plan respectively.

FIGURE 1

PROJECT LOCATION MAP - KAHALUU COMMERCIAL AND RESIDENTIAL DEVELOPMENT



- (1) The commercial complex will consist of four (4), one-story buildings containing from approximately 5,000 square feet to 40,000 square feet of area.
- (2) Three (3) of the commercial structures will be located towards the mauka end of the B-2 zoned portion of the site and grouped together to create a pedestrian arcade for shoppers. Anticipated business uses include a food market, restaurant and general commercial and retail establishments.
- (3) A fourth detached structure, proposed to be constructed along the Kamehameha Highway and Waihee Road intersection, will contain a fast food service establishment with drive-through service.
- (4) Off-street parking will be provided, with access from both Kamehameha Highway and Waihee Road. A separate driveway for service vehicles and employee parking is proposed with access off the less trafficked Waihee Road. The total number of off-street parking proposed is 284 stalls, 8.5 feet and 9.0 feet in width by 19.0 feet in length.
- (5) Each of the 21 single-family residential lots will contain a minimum area of 10,000 square feet and will be sold in fee.
- (6) One additional lot of approximately 13,200 square feet (see Figure 4) will be created to provide park and playground facilities for the subdivision; this will satisfy the park requirements established by the Park Dedication Ordinance.
- (7) The access road from Waihee Road to the proposed subdivision will be constructed in accordance with subdivision standards, and dedicated as a City and County right-of-way.
- (8) The residential-zoned strip of land (1.3± acres) between the Highway and the B-2 zoned parcel will be landscaped and

maintained as a buffer strip; the depth of this buffer strip will be about 115 feet from the Highway, greater than the 35-foot setback requested by the State Department of Transportation for highway expansion.

2.3 Proposed Infrastructure Improvements.

- (1) Potable Water. It is estimated that the proposed commercial center will require 21,090 gallons of water per day. The residential subdivision (when houses are built by the owners) will require about 11,720 gallons per day (based on Board of Water Supply standard usage data). The total water demand for both the commercial center and the residential subdivision (when the homes are built and occupied) is estimated to be 32,810 gallons per day. The proposed plans call for connecting an 8-inch pipeline to the existing 12-inch water main on Waihee Road.
- (2) Telephone and Electrical Services. Overhead electrical and telephone lines are located on Waihee Road and Kamehameha Highway. The electrical and telephone lines serving the project will be connected onto the main overhead lines (12.47 kv) on Waihee Road. Underground lines servicing the proposed commercial center and subdivision are proposed.
- (3) Subdivision Roads. The roads within the subdivision will be constructed of asphalt; the pavement width will be 28 feet, with 4-foot sidewalks, drainage culverts, and street lighting. The right-of-way for the subdivision roadway will be 44 feet.
- (4) Ingress/Egress for the Commercial Center. Three (3) ingress/egress points are proposed for the commercial center. One on the Kaneohe side of the site (from Kamehameha Highway before the Bridge), and the other along Waihee Road (240 feet from the intersection of Kamehameha Highway and Waihee Road). These two ingress/egress points will be approximately 30 feet wide and will

lead into the parking area of the commercial center. The third ingress/egress will primarily be for service and employee vehicles. This ingress/egress is located on the extreme mauka end of the proposed commercial center (see Figure 3); it will be about 20 feet wide and lead to the loading zone and back of the three commercial buildings. Access to this ingress/egress will be off of Waihee Road.

It should be noted that during the Draft EIS review period several reviewing agencies/persons indicated that the ingress/egress along Kamehameha Highway near the Kahaluu Bridge may pose a traffic hazard. The project engineer has indicated that the plans for all the ingress/egress locations must be coordinated with the Highways Division, State Department of Transportation. Should this specific ingress/egress location cause a traffic hazard or congestion, it is likely that it will be moved or eliminated. The Highways Division will provide final approval for the development's access plans.

- (5) Proposed Drainage. The proposed drainage system for this development consists of an off-site concrete lined, rectangular interceptor channel on the mauka edge of the property and two separate on-site underground pipe systems with outlets at the lagoon. The off-site interceptor channel will connect to the on-site drainage system within the roadway of the subdivision lots and drain into the lagoon at the southeast corner of the shopping center. The drain line within the paved area for the employee parking and service vehicles of the shopping center will also drain at the same outlet at the southeast corner of the lagoon. A separate on-site drainage system will collect the runoff of the makai section of the shopping center and drain through a second outlet into the lagoon. Due to the flood hazard zoning, the drainage system must be approved by the City and County of Honolulu, Department of Land Utilization and Department of Public Works (DPW). A drainage study, "Proposed Kahaluu Shopping Center Flood Study and Preliminary

Drainage Report, Kahaluu, Koolaupoko, Oahu, Hawaii," prepared by Austin, Tsutsumi & Associates, Inc., has been accepted for the project site by the Department of Public Works. This report will satisfy the Comprehensive Zoning Code (CZC) for Zone A, designated area.

- (6) Sewage Treatment and Disposal. The sewage generated by the proposed project will be collected and disposed of in a manner acceptable to City and County Department of Public Works and the State Department of Health.

The sewage generated by the proposed project will be collected by a gravity sewer system. Cesspool disposal of sewage is not feasible due to the high water table and poor soil conditions.

It is estimated that the proposed commercial center will generate approximately 13,000 gallons of sewage per day while the subdivision will generate approximately 8,400 gallons of sewage per day. The project gravity line will tie into the proposed City and County gravity sewer main along Waihee Road. The City and County system is projected for completion in the mid- to late-1980's. For the interim period between the completion of the proposed project and the construction of the City and County sewerage system for the area, the sewage collected by the onsite gravity system would be pumped to the Ahuimanu Sewage Treatment Plant, approximately 6,800 feet away. This proposal would require a sewage pump station and an offsite force main from the site to the Ahuimanu Sewage Treatment Plant. Approval would be required from the City and County of Honolulu for service connection from both the City and County and the State for a private easement within City and County and State road rights-of-way. Approval would also be required from the City and County of Honolulu for the connection to the Ahuimanu STP.

According to the Division of Wastewater Management, Department of Public Works, City and County of Honolulu, the proposed 8-inch gravity sewer line along Waihee Road will not be constructed until completion of the force mains and sewage pump stations

(SPS #1 and #3) along Kamehameha Highway and Kahekili Highway. (Reference: "Facility Plan for the Kahaluu Wastewater Treatment and Disposal System," by R.M. Towill Corp., January 1980, Fig. VI-7.) SPS #3, located near the Kamehameha Highway-Kahekili Highway junction is expected to be in operation by January 1984, while SPS #1, along Kamehameha Highway is scheduled to be in operation by 1987. At this time, all sewage from the Kahaluu area will be pumped to the Ahuimanu Sewage Treatment Plant.

The sewage pump station will be located on the corner lot, at the intersection of Waihee Road and the subdivision access road. The project's force main will run along Kamehameha Highway and Kahekili Highway within the State right-of-way and carry sewage from the site to the Ahuimanu STP. Once the proposed City and County sewerage system for the area is completed and the 8-inch sewer line along Waihee Road constructed, the onsite gravity system will be connected directly into the 8-inch sewer line. At that time, the onsite sewage pump station could be removed and salvaged, and the force main could either be incorporated into the overall sewerage system or abandoned in place.

The operation and maintenance of the pump station will be the responsibility of the City's Department of Public Works. The pump station will be built to City standards, and, upon completion, dedicated to the City.

- (7) Solid Waste Collection and Disposal. The solid waste generated by the commercial center will be collected and disposed of by a private refuse collection company. It is anticipated that the solid waste generated by the single-family subdivision (when the homes are built and occupied) will be collected and disposed of by the Refuse Division, Department of Public Works, City and County of Honolulu. Normal residential collection takes place twice a week; solid waste is disposed of at the Kapaa Sanitary Landfill.

2.4 Construction Work Items. The proposed project will include the following specific construction work items: site clearing and grading,

placement of underground utilities, building of roadways and parking lots (for the commercial center), construction of commercial structures, and landscaping.

2.5 Statement of Objectives. The applicant proposes to utilize the project site in accordance with its zoning. No rezoning is necessary. The single-family residential lots will be consistent with the existing homes/lot sizes in the surrounding area. The commercial center will serve the immediate neighborhood by providing convenient goods and services. The applicant's marketing analysis of the area (see Appendix F) indicated that there is a need for such a commercial center with the nearest comparable development (Temple Valley Shopping Center) located two miles away. The commercial center will require an estimated 173 employees, of which, 75 percent will be full-time employees. It is anticipated that these jobs will be filled by people living in the district.

2.6 Historic Perspective. The land was purchased by the applicants in 1957. Although the site is presently cleared, dredged material from the Kahaluu Lagoon project (Soil Conservation Service's Kahaluu Watershed project created a multi-purpose lagoon on the Kaneohe side of the project site) occupy the site. Prior uses of the project site included primarily pasture lands. Pre-historic (before the discovery of the Hawaiian Islands) Hawaiian use of the site probably included farming.

2.7 Phasing and Timing. The estimated time for construction of the commercial center is about 12 months. Completion of the commercial area is anticipated by 1983. The on-site and off-site improvement costs for the proposed project has been estimated at about \$5.8 million. No governmental monies will be used for this project. The cost of the subdivision lots is presently unknown and will likely be similar to the market price of the surrounding residential-zoned land.

TABLE 1

SITE/PROJECT DATA
PROPOSED KAHALUU COMMERCIAL PROJECT

SITE DATA

TAX MAP KEY: 4-7-12: 12 and 27

LAND AREA:	Parcel 12:	15.189 Acres	661.633 S.F.
	Parcel 27:	0.094 Acres	4.101 S.F.
ZONING:	B-2 Business	7.028 Acres	Parcel 12
	R-3 Residential	5.580 Acres	Parcel 12
	R-6 Residential	2.581 Acres	Parcel 12
	R-6 Residential	0.094 Acres	Parcel 27

PROJECT DATA

B-2 ZONING DISTRICT: PROPOSED COMMERCIAL
96,000 S.F. Building Area
10,000 S.F. Covered Walkways
106,000 S.F. Gross Floor Area

OFF-STREET PARKING: 265 Required
284 Provided

R-3/R-6 ZONING DISTRICT: PROPOSED LOT SUBDIVISION
10,000 S.F. Minimum Lot Size
21 Lots

PARK DEDICATION REQUIREMENT:

21 Single Family Lots x 350 S.F./Lot = 7,350 S.F. Min.

TABLE 2

KAHALUU COMMERCIAL AND RESIDENTIAL DEVELOPMENT
RESIDENTIAL SUBDIVISION LOT SIZES

<u>Lot No.</u>	<u>Size</u> (Square Feet)
1	13,300
2	11,200
3	10,000
4	10,000
5	10,000
6	10,000
7	10,000
8	10,000
9	10,000
10	10,000
11	10,100
12	10,100
13	15,200
14	14,200
15	11,500
16	10,600
17	10,300
18	11,600
19	10,600
20	12,000
<u>21</u>	<u>11,000</u>
TOTAL:	231,700

3. DESCRIPTION OF THE ENVIRONMENTAL SETTING

The proposed Kahaluu Commercial and Residential Development is fronted by Kamehameha Highway and Waihee Road (north and west of the site respectively) and is adjacent to a recently constructed 28-acre multi-purpose lagoon. The project site is a portion of the Waihee drainage basin which extends from the sharp-crested Koolau Mountain Range to Kaneohe Bay. The climate at the site is typical of that for Windward Oahu, with a mean annual rainfall of approximately 60 inches, and a temperature that averages 75°F throughout the year.

The proposed project area, presently vacant, has been used as a site for the stockpiling of material removed from the construction of the adjacent multi-purpose lagoon (Kahaluu Flood Control Lagoon). Over half of the project site area presently does not have any vegetation and most of the remainder is only sparsely covered with grass and other weeds. The stockpiled material will be leveled-off with excess material removed.

Adjacent uses include undeveloped, open land south of the project. Across Kamehameha Highway and southeast of the project site are parcels of land which are owned by the City and County of Honolulu Department of Parks and Recreation. Across Waihee Road is an existing residential area, and on the other side of the Kahaluu Flood Control Lagoon is the Hygienic Store complex.

The project site is zoned B-2 Business District, and R-3 and R-6 Residential Districts (see Table 1 in Section 1). The existing Detailed Land Use Map (DLUM) designates the project site for highway right-of-way, commercial, low-density residential, and sewage treatment plant uses. However, the proposed Development Plan for Koolaupoko delineates the project site for agricultural use. The entire site is located within the Special Management Area (SMA), Ordinance 4529.

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

4.1 State Land Use Designation. The State Land Use Commission (LUC) designates the project site and the surrounding area, Urban. The zoning is consistent with the Urban designation.

4.2 Zoning, City and County of Honolulu. As stated, the zoning for the project site is B-2, R-6, and R-3; the proposed development is consistent with the existing zoning of the site.

4.3 General Plan, City and County of Honolulu, and the Proposed Development Plan for the Koolaupoko District. As stated in the comments of the Kahalu'u Neighborhood Board No. 29 (letter dated June 17, 1981, found on page 13-26 of this EIS): "Encouragement of urban growth in this community is contrary to the 1977 City & County General Plan which establishes Objectives and Policies relating to the directions growth should take. The General Plan calls for stabilizing the proportion of O'ahu's population in the Urban Fringe areas (i.e. 'Ahuimanu), reducing the proportion in Rural areas (i.e. Kahalu'u to Kualoa) and directing population growth to the Primary (Honolulu) and Secondary (Ewa) Urban Centers. The Development Plans, now under consideration by the City Council, reflect these Policies and Objectives on growth." This is an accurate statement of the intent of the General Plan and the proposed Development Plan for the Koolaupoko District.

Subsequently, there is a discrepancy between the site's zoning and the General Plan's objectives and policies and the proposed Development Plan for the District. However, the recent State Supreme Court decision (the Nuuanu Neighborhood Board and various individuals versus the Department of Land Utilization, City and County of Honolulu, Tyrone Kusao, Director of Land Utilization, and Dowsett Highlands Land Trust) identifies the priority of zoning over the broader plans such as the General Plan. The Court has

interpreted the land use plans as guidance policies for land use decisions, but zoning prevails when actual land use is implemented. This would require that the City and County take action to change the zoning in order to make it consistent with the broader, land use plans and objectives. Should this occur, legal consequences and action because of the loss of property value intrinsic to the zoning will likely occur.

The applicant/developer is proceeding with the proposed project because the project site is zoned for commercial uses. Because the draft Development Plan for the area is in conflict with the site's zoning, a "full reconciliation" of the continuance of the project with the draft Development Plan and the zoning is impossible. That is, the project conforms with the zoning, but is not consistent with the draft Development Plan.

4.4 The Hawaii State Plan and the State Draft Functional Plans.

The objectives and policies in the Hawaii State Plan are broad and although it can be interpreted to relate to specific projects, it is subjective. However, the Hawaii State Plan is detailed through the twelve (12) Functional Plans (Energy, Transportation, Water Resources Development, Historic Preservation, Recreation, Health, Conservation Lands, Education, Housing, Higher Education, Agriculture, and Tourism) which are presently in Draft form. The development was evaluated based on these Functional Plans.

Three (3) Functional Plans were found to be relevant to this proposed development: the State Agriculture Plan, the State Recreation Plan, and the State Water Resources Development Plan. The State Agriculture Plan call for the retention of important agricultural lands in the State. However, the priorities are established so that State action can be taken to preserve agriculture in form of support facilities and transport systems, agricultural parks, and policies relating to tax incentives. No specific policies are found relating to preserving lands designated and zoned urban in agriculture.

The State Recreation Plan identifies the Kahaluu Multi-Purpose Lagoon as a recreational area/resource. The use of the project site for commercial/residential purposes forecloses the option to use the entire site for recreational purposes; however, the surrounding areas have been acquired for recreational use (related to the lagoon) and public access to the lagoon and a buffer area (between the development and the lagoon) will be provided.

The State Water Resources Development Plan was reviewed in relationship to this project. If the alternative of tertiary sewage treatment is selected with use of the effluent for irrigation, the reuse of the effluent would be consistent with Objective G., which reads, "increase the use of treated sewage effluent and other nonpotable water for irrigation purposes".

4.5 Coastal Zone Management Policies, Chapter 205-A, HRS. The objectives and policies of Chapter 205-A, HRS, relating to the Coastal Zone, were reviewed. The Department of Planning and Economic Development's CZM review forms were used (because of the format convenience and because all of the objectives and policies are incorporated into the document) to evaluate the project against the objectives and policies of Chapter 205-A. This review is provided as Appendix E in this EIS. This should be considered a preliminary evaluation because details relating to sewage and public recreational uses of the buffer area (between the lagoon and the development) will likely to be finalized after the completion of the EIS process. Subsequently, some of the the responses will differ when these details are resolved.

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

5.1 Impact on Physical Geography. The impact on the physical geography is expected to be minimal. The project site has been previously been cleared, filled (along the lagoon portion), and is devoid of trees. About half of the project site is sparsely covered with weeds and grasses, and the remainder the site is bare. Subsequently, the proposed filling in of additional soil (for flood control) will have a minimal impact on its present condition (see discussion under drainage and flood control).

5.1.1 Soils. The soils on the project site are identified (Reference: Soil Survey (of the) Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, prepared by the U.S. Department of Agriculture, Soil Conservation Service, in cooperation with the University of Hawaii Agricultural Experiment Station, August, 1972), as Trophaquepts (TR). The above mentioned reference provides the following description of this soil type:

"Trophaquepts (TR) are poorly drained soils that are periodically flooded by irrigation in order to grow crops that thrive in water. They occur as nearly level flood plains on the island of Oahu and Maui. Elevations range from sea level to 200 feet. The annual rainfall amounts to 20 to 150 inches."

"These soils have been flooded for varying lengths of time, and soil development differs in degree from place to place. Generally, the surface layer, about 10 inches thick, consists of dark-gray, soft, mucky silt loam. This layer overlies firm to compact silty clay loam, 5 to 10 inches thick, that is mottled with gray, yellow, and brown. The mottled layer overlies friable alluvium."

"Trophaquepts are used for production of taro, rice, and watercress on flooded paddies."

The engineering interpretations of this soil type indicate that it is poorly drained; has a slow permeability, high water table, and a low shear strength. The degree and kind of limitations for septic tank filter fields are severe because of the high water table. Because of soil characteristics, detailed studies of the proposed drainage and sewage effluent disposal have been undertaken. It is felt that these problems (slow permeability and high water table) have been overcome by the proposed drainage plan, described below and in subsection 2.3, item (5), and in the two alternative sewage treatment and effluent disposal proposals, described on page 2-8, subsection 2.3, item (6). Subsequently, the soil's impact on the proposed project is felt to be minimized through the proposed drainage and sewage treatment/effluent disposal plans.

The avifauna seen in the area are common types (e.g. spotted dove, mynas, sparrow, house finch). No wildlife or unique vegetation types are found on the project site. Therefore, little or no impact on the avifauna, wildlife, and vegetation on the site, is foreseen.

5.2 Impact on Ambient Air Quality. The impact on ambient air quality was evaluated in the air quality study prepared by Barry D. Root. His study is included in this EIS as Appendix B. Because Root's study is included in its entirety in this EIS, only his findings are discussed below.

Present air quality in the project area is estimated to be very good since there are no major contributing sources other than vehicles traveling on roadways along this part of the windward Oahu coast.

The only direct adverse air quality impact that the proposed project is likely to create is the emission of fugitive dust during the construction phase of the project. State of Hawaii Department of Health Rules and Regulations (Chapter 43, Section 10) stipulate the control measures that are to be employed to reduce this type of emissions. Primary control consists of wetting down loose soil areas with water, oil, or suitable chemicals. An effective watering program can reduce

particulate emission levels from construction sites by as much as 50 percent. Other control measures include good housekeeping on the job site and pavement or landscaping of bare soil areas as quickly as possible. Since there is no housing in the immediate area of the project these control measures should be adequate to insure that construction dust is not a problem.

Indirect air quality impacts are likely to result from demands for electrical energy. The most likely impact will be in the area of the Kahe Power Plant in the Waianae area where slight increases in particulates and sulfur oxide emissions can be expected.

Increased traffic generated by the project will increase carbon monoxide, hydrocarbons and nitrogen dioxide in the project area and along Kamehameha Highway. Except during periods of severe traffic congestion, however, predicted levels of these pollutants are expected to be within the allowable State and Federal Ambient Air Quality Standards.

Adequate mitigative measures are available to control emissions of fugitive dust from construction activities and a large, densely landscaped buffer zone between the project and Kamehameha Highway can help to remove some vehicle-generated pollutants from the air, but no special mitigative measures seem necessary to ensure that air quality standards will be met by the project as proposed.

5.3 Impact on Ambient Noise Levels. Based on noise surveys conducted on different locations throughout Oahu (Reference: The State of Hawaii Data Book 1980; A Statistical Abstract, prepared by the Department of Planning and Economic Development, November, 1980, Table 101, page 126), the noise level in Kahaluu would exceed 54.0 decibels 10 percent of the time, 45.5 decibels, 50 percent of the time, and 40.5 decibels, 90 percent of the time (data based on Kaneohe noise survey). This would mean that generally, the Kahaluu area is a relatively "quiet" neighborhood.

The noise levels on the project site during grading and construction will increase due to the heavy equipment and construction activities. However, this noise must adhere to the required State and OSHA standards.

Long-term impact on ambient noise levels will also show an increase because of the commercial activities and automobiles within the project site. This noise will not be unlike the noise within other neighborhood shopping centers. This noise is not expected to be adverse nor is it expected to exceed the current noise standards established by the CZC and Chapters 44-A, 44-B, PHR, relating to vehicular and community noise.

5.4 Impact on Water Quality. (Impact on Flood Control and Drainage is discussed under subsections 5.6.3 and 5.6.4, below.) The impact on water quality was discussed by Gordon Dugan, Ph.D., in his report, "Environmental Aspects of Storm Water Runoff, Kahaluu Commercial and Residential Development, Kahaluu, Koolaupoko, Oahu, Hawaii," dated June, 1981. Because his report is included in its entirety in Appendix C, no attempt is made to detail his methodology or assumptions. However, Dugan's conclusions and findings are provided below.

"The development of the 15.3-acre site is projected to increase the volume of storm water runoff from 1.5-acre-ft for the 1-hr/1-yr event to 3.9 acre-ft for the 24-hr/100-yr event. These changes, however, result in increases of nearly 3.5 and 1.2 times, respectively, for (1981) undeveloped and (full) developed conditions. The maximum peak discharge rate shouldn't increase over 5 cfs, which is insignificant in comparison to the 20,000 cfs flow the lagoon was designed for. These changes will, of course, manifest themselves in the constituent loads. Incremental comparisons were based only on the 15.3-acre project site itself, rather than on the entire drainage basin. Comparison to the entire drainage basin would severally negate the changes because the project site is only about 1% of the enclosed basin."

"Based on the literature, local studies, and reasonable assumptions the quality of the major constituents studied (nitrogen, phosphorus, and suspended solids) for both undeveloped and developed conditions were ascertained to respectively be: 0.74 and 0.60 mg/L for nitrogen; 0.07 and 0.57 mg/L for phosphorus; and 1300 and 250 mg/L for suspended solids. The incremental changes for nitrogen showed an increase of 3.0 lb/event for several standard storms to a decrease of 0.7 lb/event for the 24-hr/100-yr storm. Phosphorus likewise incrementally increased from 0.3 lb/event for several standard storms to a decrease of 0.1 lb/event for the 24-hr/100-yr event. Suspended solids, on the other hand, decreased from 0.33 ton/event to 24.57 ton/event, for the 1-hr/1-yr and 24-hr/100-yr storms, respectively."

"The constituent loads, it needs to be emphasized, are not considered as absolute, but rather they should be utilized to demonstrate trends. Following this, the development of the proposed project site should slightly increase the nitrogen and phosphorus output for most storms, while the suspended solids should decrease."

"The multi-purpose lagoon/Kaneohe Bay is the basic receptacle for quantity and quality changes in storm water runoff, but from the foregoing only slight increases are expected in total runoff, nitrogen, and phosphorus loads, while the suspended solids output should decrease, especially since most of the present project site area is presently bare soil."

"Besides the aforementioned constituents there are concerns over potential changes in the output of biocides and heavy metals. Biocide data is quite limited for natural and urban runoff situations. In general the biocides presently in use tend to breakdown more readily in comparison to the more

lasting types of a few years ago; consequently, except for agricultural runoff, the types and concentrations are usually considered insignificant."

"The long-term effects of heavy metals at the concentrations reported in this study are not well-defined, despite the numerous studies on Kaneohe Bay water quality. However, with the exception of lead most of the analyzed heavy metals are below the limits required or recommended for drinking water. Based on local-derived storm water data, for 1972-1973, the concentration of lead is significantly higher than that acceptable for drinking water, although comparing the quality of storm water to drinking water is ultra-conservative. However, new cars, especially since 1974, have been designed to only use unleaded gasoline, which is intended to reduce the output of lead to the environment. Thus, data is presently lacking, but the supposition is advanced that the concentration of lead from storm water runoff should be steadily decreasing. No detectable impacts attributable to heavy metals are expected. From most studies to date, Kaneohe Bay appears to be more sensitive to nutrient and sediment contamination."

"This study has addressed the long-term (full) developed impacts of the proposed project on storm water runoff and the contained constituent loads. It is recognized, however, that during the construction, potential severe incidences of water pollution could occur as a result of grading activities, especially during storm conditions if proper erosion control measures are not intensively followed."

Dugan's calculations on the estimated storm water runoff volume and constituent changes due to the proposed development is found in Table 3 on the next page.

Impact on the water quality (lagoon and Kaneohe Bay) is expected to be negligible; subsequently, impact on marine life in the lagoon and Bay should not be affected. A detailed analyses of marine life in the lagoon and stream would prove too costly and lengthy for this EIS evaluation. Therefore, a review of water quality impact was undertaken and is felt to sufficiently respond to the concerns on impact to the coastal ecosystems.

5.5 Impact on Aesthetics and Viewplanes. The site is presently vacant with sparse plantlife, and several piles of fill material. While the site is fenced (wire fencing), the overall appearance of the site was not found to be attractive or pleasing. Subsequently, the visual alteration of the site from its present condition, would improve the appearance of the project site. The completed project site (with landscaping) is expected to appear similar to the artist rendering on the front cover of the EIS. Based on its location on a flat lowland area, views from higher elevations (e.g. the mountainside residences looking over the project site) will be altered from the present open space appearance to a shopping complex and residential subdivision. This will further alter the present appearance of the area to a developed, commercial complex.

5.6 Impact on Utilities and Public Facilities.

5.6.1 Potable Water. (See discussion on page 2.7, subsection 2.3, item (1).) The total water demand for the project is estimated to be 32,810 gallons per day. The proposed plans call for connecting a 8-inch pipeline to the existing 12-inch water main on Waihee Road. The Board of Water Supply (BWS), must determine the availability of water prior to approving the plans for hook-up. The stipulations of making potable water available to this development are identified in their letter of June 12, 1981 found on page 13-19 of this EIS. Because potable water commitment cannot be provided at this time, the availability of water is treated as an unresolved issue (see Section 10). However, it is noted that the estimated demand is a very small fraction of the water presently being used in the total water sub-district. It is felt that the existing potable water supply and facilities will be available and adequate for the project.

5.6.2 Telephone and Electrical Services. Overhead electrical and telephone lines are located on Waihee Road and Kamehameha Highway. The lines for the project will be connected onto the main overhead lines on Waihee Road. Underground lines servicing the proposed commercial center and subdivision are proposed. Both the telephone and electrical services and facilities will adequately serve the project site without adverse or significant impact on the existing residences and businesses being served.

5.6.3 Drainage Impacts. The proposed drainage system is described on page 2-8, item (5). The drainage report (Reference: "Proposed Kahaluu Shopping Center Flood Study and Preliminary Drainage Report, Kahaluu, Koolaupoko, Oahu, Hawaii, Tax Map Key: 4-7-12:12 and 27," prepared by Austin, Tsutsumi & Associates, Inc., April 1981) indicates that the proposed discharge of surface water into either the lagoon or the drainage system on Waihee Road will be provided. The additional surface water (calculated in Dugan's report, Appendix C) will not adversely affect the water quality in the lagoon, and should have minimal impact on the existing improved drainage system (Waihee Road).

5.6.4 Impact on Flood Control. As stated by the Department of the Army, U.S. Army Engineer District, Honolulu, their letter of June 10, 1981 (see page 13-17 of the EIS):

"The proposed development site is located in the Waihee Stream Flood Plan area (Zone A designation) of the 100-year flood, according to the Flood Insurance Study for the Island of Oahu prepared by the Federal Insurance Administration. Zone A areas were determined by approximate study methods, and flood elevation data and the floodway were not established for these areas. Flood levels and limits of the floodwater are currently being determined by the Corps for the City and County of Honoulu, for those areas designated Zone A. The '100-year flood' is an event that has a one percent chance of being equalled or exceeded in any given year. The 'floodway' is defined as the channel of a river

or watercourse and adjacent land areas that must be reserved for the discharge of the 100-year flood."

The report prepared by Austin, Tsutsumi & Associates, Inc., cited above, also covered flood control. Portions of their report relating to specific actions in filling-in certain sections of the project site are provided in Appendix D. After analyzing the flood conditions, the findings of their study showed that:

"...the filling of the area within the 100-year flood limit (Exhibit B) will not adversely effect the floodway nor adversely increase the regulatory flood elevation; and therefore, should be defined to be within the flood fringe district. It is also proposed that all other areas of the development outside of the flood limit be graded such that they will be higher than the roadway of Waihee Road, the roadway of Kamehameha Highway, and the top bank of the lagoon to avoid unnecessary flooding."

Exhibit B (referred to in the above description) is provided in Appendix D.

The flood control report has been accepted for the project site by the Department of Public Works, City and County of Honolulu. The proposed actions will satisfy the CZC requirements for the Zone A designated area. Based on the detailed analysis of the flood conditions and the proposed controls, the proposed development is not anticipated to have a significant or adverse impact on the designated flood hazard area.

Relating to tsunami inundation, the proposed project site is approximately 10 to 20+ feet above mean sea level. The tsunami inundation line is 4 feet above mean sea level; subsequently, the project site is not within a tsunami inundation zone.

5.6.5 Impact of Sewage Treatment and Disposal. The sewage from the development will be transported to Ahuimanu Sewage

Treatment Plant; the impacts will be limited to the need to construct (offsite) improvements such as the transmission line to Ahuimanu. The Ahuimanu STP should have sufficient capacity to accept this additional amount of sewage. Approval from various governmental agencies relating to the sewer line's easement, connection to Ahuimanu STP, and the pump station will be required.

The force main will be sized to handle sewage flow from the proposed shopping center and the residential development, and will be dedicated to the City and County of Honolulu upon completion. The Department of Public Works would have to decide, at that time, whether other properties would be allowed to connect to the line.

5.6.6 Solid Waste Generated. The solid waste generated by the proposed commercial center will be collected and disposed of by a private refuse collection company. (The amount of solid waste generated by the proposed commercial center was not determined because it would depend on the types of stores, offices, etc., in the center.) It is likely that the private refuse collection company will be disposing of the refuse at the nearest landfill, the Kapaa Sanitary Landfill.

The proposed residential subdivision, when completed and occupied, will generate approximately 2.4 pounds of solid waste per person per day. Assuming that there will be 4.1 persons per household (4.1 x 21 lots = 86 persons), the total solid waste generated would be about 206 pounds per day. The solid waste will be collected by the Refuse Division, Department of Public Works, City and County of Honolulu. Normal residential collection takes place twice a week; the solid waste collected will be disposed of at Kapaa Sanitary Landfill. Because this will be a small subdivision, impact on the normal residential collection services by the City will be minimal. Solid waste from the proposed commercial area will be collected by a private refuse company and should have no impact on City refuse services.

5.6.7 Impact on Fire and Police Services. The impact on both fire and police services and facilities will be minimal. These are emergency oriented

services and as such, their need on an yearly basis cannot be determined. However, it is noted that the Kahaluu Fire Station is located less than a mile away and will be providing fire protection to the area with supportive service from Kaaawa and Kaneohe fire station. The Fire Department, City and County of Honolulu, also noted in their letter of May 29, 1981, (on page 13-5 of the EIS) that: "The proposed project will in no way affect the existing or planned capacity of our services as a result of the development."

Based on the small resident population anticipated, demand for police services should be minimal. The proposed commercial center will have its own security personnel, curtailing the need for police assistance for security concerns. The design of the shopping center will take into consideration lighting, visibility of entrances, lock locations and electronic security systems. The Kaneohe Police Substation is located 5.1 miles from the project site.

5.6.8 Impact on Educational Facilities. The proposed commercial center will have no impact on public schools. When completed and eventually occupied, the 21-lot residential subdivision will likely generate school-aged children. If it is assumed that the household size is 4.1 persons per dwelling, and that 1.5 persons per dwelling (this high proportion is used so that the highest impacts can be assessed) is between 5 and 17 years old, then 32 (rounded off) school-aged children would be generated by this project. This is a small number of students; it is anticipated that this number can be absorbed into the existing schools serving the project area. These schools are: Kahaluu Elementary School (located several hundred feet mauka of the proposed residential subdivision), King Intermediate School (located 4.1 miles from the project site in a Kaneohe direction), and Castle High School (located 6 miles from the project site in Kaneohe).

5.6.9 Impact on Recreational Facilities. The proposed project will not have a significant impact on present recreational facilities and parks. The land directly across Kamehameha Highway, makai of the project

site, is used for recreation (fishing, netting, crabbing, parking). Additionally, the strip of land (ranging from 12± to 25± feet) immediately next to the lagoon is used for boating (in the lagoon), fishing, etc. This strip of land is an easement which will be retained to provide public access to the lagoon. Discussions with the City's Department of Parks and Recreation on landscaping details, additional easement rights, width and area, and maintenance will continue. At this time, the applicant finds that the major issue of providing a recreational easement has been resolved. The proposed development will foreclose other recreational uses (for a park, field, recreational complex) of the entire project site. Pragmatically, the high cost of the property (based on the zoning) would eliminate the use of the land for recreational purposes.

The residential portion of the development will result in additional recreational demand on the existing facilities. The Kahaluu Park and Community Center is located several hundred feet mauka of the project (below Kahaluu Elementary School). Additionally, lands around the lagoon and the shoreline area are available for public recreational use. The project will also include a 13,200 square feet area set aside to meet the Park Dedication Ordinance. Considering the individual yard space and the small recreational area which will be provided, the impact on existing parks and recreational facilities should be minimal.

5.7 Impact on the Existing Transportation System. Henry T. Au, traffic consultant, prepared a traffic impact statement (included in the EIS as Appendix A) for the proposed project. Because his report is included in the EIS, only the findings are provided below.

Kahekili Highway merges with Kamehameha Highway approximately 1,400 feet south of Waihee Road and consequently, is the only major arterial serving the project under the existing highway system.

Kamehameha Highway will remain as the only major arterial serving the project site under both the existing and future highway systems, except that Kamehameha Highway must be improved to higher standards and designs for future traffic volumes. The future highway system will mitigate at a future time any possible undesirable traffic congestion.

In 1976, the traffic volume on Kamehameha Highway at Station 31-V (Kahekili Highway at Kamehameha Highway and Ahaolelo Road) was 12,204 vehicles. By 1979, the traffic volume increased to 15,213 vehicles. However, in 1981, the traffic volume showed a considerable reduction from the 1979 volume of 15,213 vehicles to 11,965 in 1981, a decrease of 3,158 vehicles or 20.88 per cent. The reduction in traffic volume may be attributed to the rising cost of transportation and to the decline in tourist travel.

For the weekend traffic on Kamehameha Highway at Waihee Road, the 12 hour volume from 6:00 a.m. to 6:00 p.m. is the highest on a Saturday and the lowest on a Friday, whereas on Waihee Road, the 12 hour volume is the highest on a Friday (a weekday) and the lowest on a Sunday.

The peak hour time intervals for the weekend traffic on Kamehameha Highway and Waihee Road occur on different hours of the day and there is not the conflict or overlap of peak hour volumes with those of either Waihee Road or Kamehameha Highway. The significant differences in peak hour characteristics result in an equalization and spacing of the traffic load on Kamehameha Highway and thus, will not substantially affect the capacity of Kamehameha Highway.

Waihee Road is a secondary street with a right of way width of 60 feet and pavement width of 40 feet. For a secondary street with a right of way width of 60 feet with no parking and at grade intersection, the capacity is approximately 850

vehicles per hour in one direction and 1,275 for both directions of travel at Level of Service C.

The highest peak hour volume on Waihee Road, the Friday peak hour volume from 7:00 a.m. to 8:00 a.m., is only 352 vehicles for both directions of travel, with 183 vehicles leaving and 169 vehicles entering the roadway. Waihee Road is adequate to meet not only present vehicular demands, but also future increases as well.

The traffic volumes generated by the proposed project have already been included into the projected future traffic volumes on Kamehameha Highway and need not again be counted. The inclusion is on the basis of the projections of future traffic volumes wherein it was assumed that there will be a continuation of a high level of activity and growth in the Kahaluu District and that other projects in the Kahaluu District will take place which will maintain the high level of increase in traffic volumes on Kamehameha Highway. Furthermore, all factors were considered in the projections of future traffic volumes along Kamehameha Highway, including vacant and agricultural land in the area and growth in the resort industry.

Kamehameha Highway under present conditions will have sufficient capacity to accommodate present as well as future vehicular demands to the year 1990. Beyond 1990, the future highway system will require the improvement of Kamehameha Highway to a 4-lane divided highway. This improved 4-lane divided highway should have a capacity ranging from 2,892 to 4,958 vehicles per hour for both directions of travel and be able to accommodate an average daily traffic volume within the range of 35,758 to 45,000 vehicles. The future highway system not only will be adequate but will have considerable excess capacity and mitigate at a future time any possible undesirable traffic congestion.

The 21 dwelling units (when completed) of the residential subdivision will generate a 24 hour volume of 168 trips and a peak

hour volume of 14 trips. The peak hour volume of 14 trips is at the rate of 1 trip per 4.29 minutes and is so negligible that its impact on the highway system will be disregarded.

Using the highest values of regional shopping center characteristics at 600 trips per acre, the traffic generated by the proposed commercial-retail complex will result in 4,214 trips per day. The peak hour volumes generated by the complex will occur either before or after the peak commuting hours of the highway system. Since highways must be designed to meet peak hour commuting demands, the roadway system will be able to accommodate the traffic generated by the proposed commercial-retail complex at an acceptable level of service.

Mass transportation ('TheBus') is available to the area (along Kamehameha Highway) and is presently served by one (1) bus route, Route 52, Honolulu-Wahiawa-Kaneohe. The average headway is approximately 30 minutes, peak and off-peak periods and service is available on Saturdays and Sundays.

Approximately 284 parking spaces will be provided, compared to 265 parking spaces required by the CZC. All of these spaces will be street level parking. To facilitate traffic movement and to minimize traffic congestion, entrances and exits will be located at both Kamehameha Highway and Waihee Road. A separate driveway for service vehicles and employee parking is proposed with access from Waihee Road, away from the major highway, Kamehameha Highway.

The provision of adequate parking, therefore, should not create a traffic congestion problem on any of the approach roads to the project.

The traffic impact statement concludes that:

"Analyzing the various factors, it may be concluded the proposed project will not add substantially to the traffic problems to create an adverse impact. Although Kamehameha Highway

under present conditions will have sufficient capacity to accommodate present as well as future traffic demands to the year 1990, the future highway system with Kamehameha Highway improved to a 4-lane divided highway will provide considerable excess capacity and further mitigate at a future time any possible undesirable traffic congestion...."

5.8 Socioeconomic Impacts. The resident population of Kahaluu in 1970 was 1,657; in 1980 the population was 2,919. This is an increase of 56.7 percent over 10 years. (Reference: The State of Hawaii Data Book, 1980, A Statistical Abstract.) Based on various studies (cited in the References), the area is characterized by smaller type farms in the mauka portion of the valley, while the shoreline area is dominated by Kahaluu Fishpond, a historic site, still actively used for aquaculture. Single-family homes are found in the lowlands along valley roads. The type of production found in the farm areas (most of which are located two miles from the project site), include nurseries, vegetable farms, taro, pastures, and banana. However, in the immediate area around the project site, the primary uses are a general store (Hygenic Store), a service station (located at the other end of the bridge on the makai side), a drive-in (Kaneohe side of the service station), a bank (First Hawaiian Bank), a second service station at the junction of Kahekili Highway and Kamehameha Highway, the lagoon, a BWS water booster station and a Hawaiian Telephone Company baseyard (across Waihee Road), churches (across Waihee Road), and single-family residences scattered in the area.

The impact of the commercial development on the population is felt to be beneficial. The commercial development is not expected to alter the demographic data for the Kahaluu area. The development will serve the present residential population.

The residential subdivision, when completed and occupied, will generate about 86 persons (assuming 4.1 persons per household). This represents less than 3 percent of the population. This relatively insignificant number of people would not likely change the area's demographic characteristics.

Economic impacts will include a significant increase in income generated from the project site. Additionally, taxes such as sales tax, property tax, income tax, etc., will be generated. It is estimated that 173 jobs (75 percent of which will be full-time) will be created. The value of the surrounding properties will likely increase because of the commercial/residential use of the project site.

The need for a commercial development has been evaluated by a marketing analysis prepared by John Child & Company, Inc. Their compendium letter (see Appendix F) stated:

"As of 1983, there will be sufficient retail expenditures in the Kahaluu Trade area to support an additional 180,000 square feet of retail floor area distributed in the following categories:

Convenience Goods.....	98,000 square feet
Shopper's Good.....	50,000 square feet
Personal Services.....	23,000 square feet
Other Retail.....	9,000 square feet
Non-Retail.....	18,000 square feet"

"There are no other significant additions of commercial retail space within the trade area planned for the foreseeable future. Consequently, the Kahaluu Shopping Center will represent the only source of additional retail space to service the residents of the Kahaluu to Kualoa communities within the near term."

"Based upon the competitive position of the proposed development within the trade area, the Kahaluu Shopping Center is estimated to command significant support at the scheduled commencement of operation."

Based on this market analysis, the community has retail expenditures which can support the proposed commercial complex.

5.9 Impact on Agricultural Activities and Land. The proposed project is not expected to directly impact existing agricultural activities. There are no immediate or adjacent agricultural or aquacultural activities. The project is not anticipated to have a significant indirect impact on agricultural activities. Comments have been received implying that the proposed development will encourage urbanization; however, the pressure on agricultural lands (located principally in the valley) will depend on zoning changes and the pressure to build single-family or multi-family dwellings.

The potential agricultural use of the subject property was also considered. (Assuming that the high land costs is not considered.) Based on soil references, cited under References, most (about 75 percent) of the project site is designated D, with the remainder designated C. (On an overall productivity rating of A for the best soil productivity to E for the poorest soil productivity.) The State Department of Agriculture identified this area as Other Important Agricultural Lands (which ranks second to the highest designation of Important Agricultural Lands). This productivity rating, along with the slow permeability of the soil, the irrigation needs, and the proximity of the site to the lagoon will also create surface water runoff problems and would likely cause adverse impacts (sedimentation, nutrients) on the lagoon's water quality.

Agricultural alternatives such as livestock, poultry, and aquaculture are not economically viable considering the market value of this property. (The market value of the commercial land is estimated to be \$17.00 per square feet.) Other reasons why these agricultural alternatives are not viable are:

- (1) the agricultural use of the site would conflict with the surrounding residential and commercial uses;
- (2) aquaculture would place heavy demand on water required to maintain such operations;
- (3) poultry and livestock operations will produce odors which may be objectionable to surrounding residents.

5.10 Coastal Zone Impacts. The impact on the coastal zone is provided in Appendix E (review of the proposed development against the coastal zone objectives and policies). It is noted that the entire project site is located within the coastal zone (Special Management Area).

The project is not a wetland, nor is it anticipated that wetlands in the Kahaluu area will be affected.

5.11 Impact on Archaeological and Historical Sites. There are no archaeological and historical sites on the project site. This was confirmed by an earlier archaeological reconnaissance study conducted by the Bishop Museum when the lagoon was being planned. See Appendix G for the archaeological report's summary. (Reference: "Kahaluu Watershed, City and County of Honolulu, Hawaii, Final Environmental Impact Statement," U.S. Department of Agriculture, Soil Conservation Service, April, 1975.) Other literature sources, as cited in the References, do not indicate that archaeological/historical site(s) are located within the project property.

The closest archaeological site is Kahaluu Fishpond (Site 319 or State historical site number 80-10-319) or Kahouna Fishpond. It is described as one of the four remaining fishponds on Oahu in good condition. It is pre-1778, and was placed on the National Register of Historic Places March 14, 1973, and designated Valuable. The proposed project will not affect this Fishpond, located 750 feet northeast of the project site.

6. ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The following adverse environmental effects (both short- and long-term) cannot be avoided.

- (1) The site-clearing and construction work will result in temporary fugitive dust, some disruption to traffic, and noise.
- (2) Traffic will increase because of the number of vehicles going to and from the commercial development and the residential development. However, the traffic consultant's findings indicate that the present and future highway system will adequately accommodate the traffic to be created by the proposed development.
- (3) The need for public services for fire and police protection, schools, and public recreational facilities will increase slightly.
- (4) The appearance of the site will alter; the view of the site from the surrounding area will consist of the landscaping around the commercial area and the buildings and parking lot.
- (5) The project will not be consistent with the County's General Plan and the proposed Development Plan for the District.
- (6) The project will foreclose the future recreational uses of the entire site.
- (7) Depending on the sewage effluent disposal method selected, discharge of the effluent into Waihee Stream may occur. Although the effluent would be more comparable to potable water standards (e.g. better quality water than the Stream's water), the water quality will differ and subsequently, a permit from the Department of Health may be needed.

- (8) The project is opposed by the area's Neighborhood Board.
(See their letter of June 17, 1981, in Section 13, page
13-26.)

7. ALTERNATIVES TO THE PROPOSED ACTION

For the purpose of this EIS, several alternatives to the proposed development were considered. These alternatives were: (1) no action alternative, (2) residential use only alternative, (3) recreational use of the project site, and (4) agricultural use of the project site. These alternatives are described and evaluated below.

No Action Alternative. If selected, this alternative would result in no action being implemented. The impact of this alternative would be that the project site would remain as is and would likely be subject to severe erosion during heavy rainfall. Eventually the weeds and grasses would cover the entire lot and the fill material stockpiled on the site would probably be removed. If not prohibited, individuals seeking to use the lagoon may use a portion of the site (near the lagoon) for recreational purposes (e.g. boating, fishing, netting).

This alternative was not found to be viable because its non-use would not generate income nor will it provide a beneficial use to the owners.

Residential Use Only Alternative. If used only for a residential use, several designs could be proposed: 50 to 75 single-family house lots could be constructed, 100 to 200 townhouse units could be constructed, various cluster-type and low-density housing could also be provided. This alternative will require the total reconsideration of the utility, water, sewage, public facilities and services requirements (a greater demand is anticipated). The alternative was not selected because of the higher value of a B-2 zoned property and because a residential development of a higher magnitude will result in equal or greater impact on the environment.

Recreational Use of the Project Site. This alternative would provide for recreational uses of the project site that are related to the lagoon. This could include using the area as an open field, parking lots, passive park, or for recreational buildings and facilities.

This alternative would be consistent with the desires of the Kahalu'u Neighborhood Board No. 29 for a recreational use of the site.

This alternative was not selected because the subject property is in private ownership and such uses would primarily be provided by a State or City agency with public funds. The use of the land for this purpose would not allow the land to be used in its "highest and best use" under its current zoning.

Agricultural Use Alternative. The site could be used for agricultural production. This use would be consistent with the General Plan and the proposed DP for the District. However, the obvious reason for not considering this action is the conflicting cost of the land due to Urban zoning (business and residential). Other reasons include the relatively unproductive soils (class C and D), and the probability of heavy erosion and irrigation runoff from agricultural activities. Governmental agencies responsible for maintaining the "pristine quality" of Kaneohe Bay would not favorably view the discharge of sediment, suspended solids, inorganic chemicals (herbicides and pesticides) into Class AA waters.

Additionally, it should be noted that during the Draft EIS opposing viewpoint on the agricultural use of the project site and the impact on the surrounding area was provided by the Department of Agriculture. The Department of Agriculture stated:

"We question your statement #3 (page 13-21) in response to our comments of June 15, 1981. While the site itself is presently unused and there are no agricultural activities, except perhaps occasional grazing, adjacent to the site, there are agricultural activities approximately 200-300 feet mauka between the branch in Waihee Stream and Ahilama road. These activities consist of taro farming and some grazing. Many other activities exist further mauka of Ahilama Road as alluded to in your response to Life of the Land on page 13-9."

"While the zoning has been urban for several years, it has not yet resulted in the urban center once envisioned. The City

and County of Honolulu and the residents of Kahaluu are attempting to maintain a rural-agricultural environment for the area as evidenced by the General Plan and the proposed Development Plans. If a number of landowners decide to 'beat the clock', the option for a rural-agricultural environment will be precluded."

"We note that the EIS uses the zoning designation as justification for the inappropriateness of other alternative, the high cost of the land, and the lack of impacts on existing agricultural activities in the area. The contention that 'the urbanization of properties is based on the zoning; and that 'subsequently, it is the zoning which is the primary cause for urbanization' (statement #4 page 13-21) is debatable. The applicant's choice not to take advantage of the existing zone (sic) before now is an indication that much more is involved (market demand and conditions, land value, etc.). In areas which are zoned for urban activity, that activity has not always occurred, and conversely, in areas where urban type zoning does not exist, urbanization has not been precluded since zoning changes are possible."

"The report states (pages 1-2 and 5-17) that 'the value of the surrounding properties will likely increase because of the commercial/residential use of the project site.' While the property value is already higher for a residential and/or commercial zoned parcel's highest potential (as currently zoned) will result in further increases in the property values of surrounding lands. This will result in intensified pressures to urbanize the surrounding lands due to increased property taxes, increased lease and sale values, and desires by other landowners not to 'miss out' if zoning changes do result from the General Plan and proposed Development Plans' agricultural designation for the area."

"Such a development may also result in pressures from new residents to eliminate nuisances (odors, flies, noises, etc.) caused by agricultural activities in the area. Farmers could also suffer from increased theft and vandalism."



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

It is anticipated that the construction of the proposed building will commit the necessary construction materials and human resources (in the form of planning, designing, engineering, construction labor, landscaping, and personnel for the sales, management, services, offices, and maintenance functions). Some of the construction materials could be reused if and when the commercial complex is demolished; however, at the present time and state of our economy, it is felt that the reuse of much of these materials is not practical. Labor expended for this development is not retrievable. However, labor will be compensated during the various stages of the project by the developer, commercial businesses, and the building's management.

In addition to construction material and labor resources, the services and merchandise sold in the building can also be considered resources which will be utilized or consumed by the purchasers.

The appearance of the project site will be altered from its present open space, vacant appearance to that of a completed shopping complex with parking spaces. Because of the flat terrain around the project site, the commercial development will likely be highly visible until the landscaping is completed.

Air quality will be adversely affected by this proposed project, but will remain in compliance with the State of Hawaii Ambient Air Quality Standards. Presently, air quality in the area is relatively good. However, the proposed development will result in greater number of vehicles going to and from the commercial area and the subdivision, resulting in vehicular air pollution emissions.

The project development will result in a commitment of land for a long-term period. Once in a high density commercial use and a single-family residential use is established, it is unlikely that the land will be reverted to a lower usage in the long-term future. Commitment of land for these purposes will also foreclose the future land use options of the land, such as recreational use, open space, agricultural use. However, it should be noted that even if the proposed project did not occur, the high cost of the land (inherent in the zoning) would likely foreclose these lower land intensity uses.

The project development will, in the short- and long-term, result in the commercial and residential uses which will likely benefit various individual landowners and private businesses. The development will also benefit the surrounding residential community because consumer goods will be available to them at a more convenient location and distance. Finally, the development will create about 173 jobs which is likely to be filled by residents in the community. On the other hand, adverse impacts such as traffic, air pollution, decrease in open space/agricultural land in the area, physical impact on the environment, and increase demand on utilities and public services will occur.

9. MITIGATION MEASURES PROPOSED TO MINIMIZE IMPACT

The following mitigation measures will reduce adverse short-term and long-term environmental impacts.

(1) Mitigation of unwanted noise.

(a) The contractor must have adequate mufflers on his construction equipment and through proper management avoid the "gunning" of machinery.

(b) Noise from vehicles will be mitigated as automobile manufacturers comply with Federal mandates for a "quieter" running automobile.

(2) Mitigation of fugitive dust. Compliance with the grading permit and the wetting down of work areas will effectively reduce fugitive dust.

(3) Air Pollution from vehicles. Carbon monoxide from motor vehicles will be decreasing over the next several years due to Federal laws which will require automobile manufacturers to reduce air emissions from new automobiles. As the vehicular fleet replaces the cars on the road, the newer automobiles will contribute less to the air pollution. Appendix B, provides more details on air pollution mitigation measures.

(4) Lessen impact on public recreational facilities. By incorporating a recreational area in the residential subdivision plan, it is anticipated that the residents will be more inclined to use onsite recreational facilities.

Other mitigation measures are inherently provided by adhering to all City and State laws, regulations, and standards applicable to the project.



10. SUMMARY OF UNRESOLVED ISSUES

There is one unresolved issue the commitment of potable water.

Commitment of Potable Water. The Board of Water Supply has stated (BWS letter dated June 12, 1981, reproduced on page 13-19 of this EIS):

"We are not making any advance water commitments for proposed projects. The determination on the availability of water will depend upon the status of the water supply of our system when you submit your building permits or construction drawings, whichever are applicable to the project, for our review and approval."

The inconsistency of the site's zoning with the General Plan and the proposed Development Plan is noted in the text (primarily in Section 4). This is not felt to be an unresolved issue related to the project, because the zoning of the parcel prevails over the land use plans. The problem lies in the City's decision whether to place the zoning in line with the General Plan. This is a matter which would apply to other properties as well as this project site.

The statement that the recreational easement (next to the lagoon) was resolved is based on the developer's position that if the project is implemented a recreational easement will be provided. However, the actual details of the recreational easement is yet to be delineated and drawn into the project plans. The project architect has advised us that the easement will be worked out between the developer, the Department of Parks and Recreation, and other governmental agencies so that an easement will be provided.

Opposition to the project by the Kahalu'u Neighborhood Board No. 29 is acknowledged. Their opposition is documented in their

letter on the EIS Preparation Notice dated June 17, 1981, on pages 13-26 through 13-42 of this EIS. However, it is not felt that this is an unresolved problem; similar community opposition are well publicized because of the attempt to preserve certain lifestyles and/or the rural/agricultural environment.

11. LIST OF NECESSARY APPROVALS

The following approvals and permits must be obtained prior to the implementation of the proposed project.

1. The flood control report has been accepted (by the Department of Public Works) for the project site which will satisfy CZC requirements for the Zone A designated area.
2. Acceptance of the Final Environmental Impact Statement by the Department of Land Utilization, City and County of Honolulu.
3. Shoreline Management Area Permit issued by the City Council, City and County of Honolulu.
4. Approval of the sewage treatment system (if a private system is proposed) and the method of disposal from the Department of Health (under Chapter 38).
The method of effluent disposal (if through injection wells or discharge into the lagoon or stream) must be approved by the Department of Health, Department of Public Works, and Board of Water Supply.
5. Commitment of potable water for the development must be obtained (during the building permit process) from the Board of Water Supply.
6. Compliance with Ordinance No. 2412 on the street improvements (e.g. sidewalks, pavement, curbs, gutters) along Waihee Road must be assured. The Department of Public Works would be the coordinating agency in this matter.

7. Approval from the Department of Transportation and Department of Transportation Services for the ingress/egress points for the commercial and residential areas. Kamehameha Highway would be under the jurisdiction of the State Department of Transportation, while Waihee Road would be under the jurisdiction of the Department of Transportation Services.
8. Utility easements, connections, and relocations must be approved by the respective utility companies or governmental agencies.
9. Grading Permit(s) must be obtained from the Department of Public Works.
10. Other general Building Permits must be obtained by the applicant or the retained Contractor or Sub-Contractor from the Building Department. Such Permits involve the checking of the plans by the Department of Health, Board of Water Supply, Department of Public Works, and Fire Department in order to assure that governmental codes and standards have been incorporated into the building plans.
11. A Department of the Army permit is not required for the project (see page 13-17).

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

The height, setbacks, and use will be determined by the zoning restrictions. The sewage treatment plant and disposal of effluent must comply with the Public Health Regulations (PHR), Chapter 38. Other regulatory requirements (such as fire protection devices and equipment, building design and structural support, access to the highway, public access) are set forth in various standards, regulations, and codes; subsequently, the applicant must adhere to these requirements. It is felt that the compliance and mitigation measures set by government are inherent in the present project plan.

Other approvals and permits required may have further detailed conditions which the project must implement. This includes the Coastal Zone Management (Special Management Area) review.

Note to the reviewers: It should also be noted that various other sections of this EIS include discussion on the inconsistency of the land use plans and policies (the General Plan and the proposed Development Plan) to the zoning (R-3, R-6, and B-2) of the project site. For that topic, the review should refer to Section 4 and Section 13, various letters (e.g. Department of General Planning, Kahalu'u Neighborhood Board No. 29) commenting on the EIS Preparation Notice.

13. ORGANIZATIONS AND PERSONS CONSULTED DURING THE EIS CONSULTATION PERIOD AND REPRODUCTION OF COMMENTS AND RESPONSES MADE DURING THE EIS CONSULTATION PROCESS

The EIS Preparation Notice appeared in the EQC Bulletin of April 23, 1981. The deadline to be a consulting party was set for May 23, 1981. In addition to this Notice in the EQC Bulletin, the developer's architectural consultants, Wong, Sueda and Associates, Inc., distributed copies of the EIS Preparation Notice to a total of 27 governmental and community organizations.

The distribution list for the EIS Preparation Notice is provided in Table 4.

A total of seventeen (17) agencies commented during the EIS Consultation Period. Their comments and the responses to the comments are reproduced in half-size reductions in this Section. Below, the agencies commenting are identified, along with the date of their letters, and the first page on which their letter is reproduced. The responses to their comments (also in reduced half-size form) are found immediately after their letters.

<u>Agency (date of letter)</u>	<u>Page</u>
Hui Malama Aina O 'Koolau (May 12, 1981) (Requested to be a consulting party.)	13-4
Fire Department, City & County of Honolulu (May 29, 1981)	13-5
Police Department, City & County of Honolulu (May 29, 1981)	13-6
American Lung Association of Hawaii (June 1, 1981)	13-7
Department of Transportation Services, City & County of Honolulu (June 3, 1981)	13-8
Life of the Land (June 3, 1981)	13-9
Department of Transportation, State of Hawaii (June 8, 1981)	13-10

<u>Agency (date of letter)</u>	<u>Page</u>
Department of Parks and Recreation, City & County of Honolulu (June 8, 1981)	13-11
Department of Land and Natural Resources, State of Hawaii (June 9, 1981)	13-12
Department of Public Works, City & County of Honolulu (June 9, 1981)	13-14
Soil Conservation Service, United States Department of Agriculture (June 10, 1981)	13-16
Department of the Army, Honolulu Engineering District (June 19, 1981)	13-17
Board of Water Supply, City & County of Honolulu (June 12, 1981)	13-19
Department of Agriculture, State of Hawaii (June 15, 1981)	13-21
Department of Health, State of Hawaii (June 15, 1981)	13-22
Department of General Planning, City & County of Honolulu (June 15, 1981)	13-24
Kahalu'u Neighborhood Board No. 29 (June 17, 1981)	13-26
Department of Planning and Economic Development (received June 24, after the deadline for comments)	13-47

TABLE 4

AGENCIES/ORGANIZATIONS CONSULTED IN PREPARATION EIS NOTICE
KAHALUU COMMERCIAL AND RESIDENTIAL DEVELOPMENT

City and County of Honolulu

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

State of Hawaii

Department of Transportation
Department of Planning & Economic Development
Department of Land & Natural Resources
Department of Health
Office of Environmental Quality Control
Department of Agriculture
Environmental Center, University of Hawaii
at Manoa
Water Resources Research Center, University
of Hawaii at Manoa

Federal

U.S. Army Corps of Engineers
U.S. Fish & Wildlife Service
U.S. Department of Agriculture, Soil
Conservation Service

Community Organizations

Life of the Land
Kaneohe Outdoor Circle
American Lung Association of Hawaii
Kahaluu Neighborhood Board No. 29
Kaneohe Neighborhood Board No. 30
Kaneohe Community Council
Kaneohe Business Group
Kaneohe Bay Community Association
Hui Malama Aina O'Koolau

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

1435 S. BERETANIA STREET, ROOM 305
HONOLULU, HAWAII 96814

EILEEN R. ANDERSON
MAYOR



F. J. RODRIGUEZ
PRESIDENT

M. M. NONAKA
CHIEF

May 29, 1981

Mr. Ronald K. Awa
A.I.A.
Wong, Sueda & Associates, Inc.
905 Makahiki Way, Mauka Suite
Honolulu, Hawaii 96826

Dear Mr. Awa:
RE: Kahaluu Development
TMK: 4-7-12: 12, 27

We have no objections to your proposed project. The Kahaluu fire station is located less than a mile away and will be providing fire protection to the area with supportive service from Kaaawa and Kaneohe fire stations.

The proposed project will in no way affect the existing or planned capacity of our services as a result of the development.

Call Assistant Chief Lawrence Suganuma should you have any questions, at 955-8304.

Sincerely,

MELVIN M. NONAKA,
Fire Chief

MMN:LS:ct

JUN - 4 1981

1152 BISHOP BUILDING, SUITE 407, P. O. BOX 536 • HONOLULU, HAWAII 96808 • TELEPHONE (808) 571-5331

ENVIRONMENTAL
COMMUNICATIONS
INC.

June 4, 1981

Mr. Melvin M. Nonaka
Fire Chief
Fire Department
City and County of Honolulu
1455 South Beretania Street, Room 305
Honolulu, Hawaii 96814

Dear Mr. Nonaka:

Subject: KAHALUU COMMERCIAL PROJECT, TMK: 4-7-12: 12, 27

Thank you for your expeditious response of May 29, 1981, on the abovementioned EIS Preparation Notice. The information provided in your letter on the project's impact on fire protection services/facilities will be included in the EIS.

Very truly yours,

F. J. Rodriguez
F. J. Rodriguez

cc: Mr. Hiram L. Fong, Sr.
Wong, Sueda & Associates, Inc.
Attention: Ronald K. Awa

FJR:CKT:p1

CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96814 - AREA CODE (808) 965-8111

GILLEN R. ALDERSON
MAYOR



OUR REFERENCE EC-ES

May 29, 1981

Mr. Ronald K. Awa, A.I.A.
Wong, Sueda & Associates, Inc.
Mauka Suite
905 Makahiki Way
Honolulu, Hawaii 96826

Dear Mr. Awa:

Re: Kahala Development
TMK 4-7-12: 12, 27

Based on the limited information available at this time, our major concerns with the referenced project relate to traffic safety and residential and commercial building security. The proposed access for the site from Kamehameha Highway, located within the short distance between Waiee Road and the bridge, and the fast food restaurant with drive-through service, at the intersection of Kamehameha Highway and Waiee Road, would appear to create traffic safety hazards. As visibility will be restricted when approaching over the raised bridge in the Kahuku direction, a left-turn lane for access to the site should be considered.

We encourage developers to consider factors related to security in both residential and commercial building construction. Lighting, visibility of entrances, lock locations, and incorporation of other architectural security designs, can greatly reduce opportunities for criminal activity and provide a safer environment.

Sincerely,

FRANCIS KEALA
Chief of Police

By *[Signature]*
EARL THOMPSON
Assistant Chief
Administrative Bureau

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

FRANCIS KEALA
CHIEF

June 5, 1981

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

Dear Mr. Keala:

Subject: KAHALUU COMMERCIAL PROJECT, TMK: 4-7-12: 12, 27

Thank you for your expeditious response of May 29, 1981, on the above-mentioned EIS Preparation Notice. Your concerns on traffic safety will be noted in the EIS, and we are in the process of preparing a traffic impact statement to determine the impact on the commercial center's traffic on Kamehameha Highway. As the project proceeds, the engineering consultant will coordinate plans for the ingress/egress with the Department of Transportation so that traffic safety will be considered.

In regards to your concerns on lighting, visibility of entrances, lock locations, and other security designs, we note that the project will include security measures that will discourage criminal activity.

Very truly yours,

[Signature]
F. J. Rodriguez

cc: Mr. Hiram L. Fong, Sr.
Wong, Sueda and Associates, Inc.
Attention: Mr. Ronald Awa

FJR:CKT:pl

JUN - 5 1981

AMERICAN LUNG ASSOCIATION of Hawaii

Mr. Ronald K. Awa
Wong, Sueda & Associates
905 Makahiki Way, Mauka Suite
Honolulu, Hawaii 96826

Dear Mr. Awa:

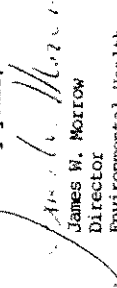
Subject: Kahului Development (TRK: 4-7-12:12, 27)

Thank you for contacting us with regard to EIS preparation for the subject project. At this time we have the following suggestions for analyzing the impacts which are of particular interest to our Association.

1. A thorough analysis of the project's impact on traffic in the area should be included. This analysis should address both short and long term impact on peak-hours and average daily traffic volumes as well as highway service level. Particular attention should be paid to intersections.
2. An air quality analysis consisting of at least the following should be incorporated:
 - a. An analysis of the effect on the level of regulated pollutants during the construction period.
 - b. An analysis of the effect of increased traffic in the project area on the concentrations of regulated pollutants. The cumulative impact of this project, other approved projects, and existing sources of traffic should be assessed. Impacts should be reported as increased emissions and ambient concentrations. Highway intersections are generally considered 'hotspots' for pollutant concentrations and should receive special attention.

If we can be of any further assistance in the EIS preparation, please do not hesitate to contact us.

Sincerely yours,



James W. Morrow
Director
Environmental Health

JWM:jm
CI/LDS

cc: DJLJ

JUN - 4 1981

Christmas Seals Fight TB - Asthma, Emphysema, Air Pollution

ENVIRONMENTAL COMMUNICATIONS INC.

June 4, 1981

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

Dear Mr. Morrow:

Subject: KAHULUU COMMERCIAL PROJECT, TRK: 4-7-12: 12, 27

Thank you for your expeditious response of June 1, 1981, on the abovementioned EIS Preparation Notice. Your concerns have been reviewed and we note that both a detailed traffic impact study and air pollution analysis are presently underway. Your concerns in both of these areas will be addressed by the respective studies.

For your review, we will be including (if not included in the appendices) a copy of the traffic and air quality studies.

Very truly yours,



F. J. Rodriguez

cc: Mr. Hiram L. Fong, Sr.
Mr. Henry T. Au
Mr. Barry D. Root

Wong, Sueda and Associates, Inc.
Attention: Mr. Ronald K. Awa

FJR:CKT:pi

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

EILEEN W. ANDERSON
MAYOR



ROY A. PARKER
DIRECTOR
TELEPHONE 581-1554

June 3, 1981

Wong, Sueda & Associates, Inc.,
Mauka Suite, 905 Makahiki Way
Honolulu, Hawaii 96826

Attention: Ronald K. Awa

Gentlemen:

Subject: Kahaialu Development
DMK: 4-7-12: 12, 27

We recommend that a traffic study be conducted and incorporated into the Environmental Impact Statement.

The traffic study should address the following concerns:

1. The traffic impact of the project on the surrounding streets. A capacity analysis of the Waiehee Road-Kamehameha Highway intersection is necessary for the a.m. and p.m. peak hours.
2. The traffic impact of the project on the arterial system that will be affected, namely, Kamehameha Highway and Kāhekehi Highway.
3. The adequacy of the off-street parking spaces that will be provided to support the proposed uses.
4. The need for street improvements to Waiehee Road and Kamehameha Highway to support the proposed use.

If you have any questions on this matter, please contact Kenneth Hirata of my staff at 523-4190.

Very truly yours,

Roy A. Parker
ROY A. PARKER
Director

cc: Dept. of Land Utilization

JUN 15 1981

**ENVIRONMENTAL
COMMUNICATIONS
INC.**

F. J. RODRIGUEZ
PRESIDENT

June 16, 1981

Mr. Roy A. Parker
Director
Department of Transportation Services
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Parker:

Subject: EIS Preparation Notice for the Proposed Kahaluu
Development, Tax Map Key: 4-7-12: 12, 27

Thank you for your comments on the abovementioned EIS Preparation Notice. Items 1 through 4 in your letter of June 3, 1981, all concerned the impact of the traffic on the surrounding streets, the Waiehee Road-Kamehameha Highway intersection, and off-street parking. Presently, a traffic impact statement is being prepared by Henry T. Au, traffic consultant. He has received a copy of your letter and has advised us that his report will incorporate information discussing these concerns.

A copy of the traffic analysis will either be appended to the Draft EIS or provided separately to your office for your review.

Very truly yours,

F. J. Rodriguez
F. J. Rodriguez

cc: Department of Land Utilization
Wong, Sueda and Associate, Inc.
Senator Hiram L. Fong, Sr.
Mr. Henry T. Au

FJR:CKT:pi

1132 BISHOP BUILDING, SUITE 407, P. O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-8381



A GROUP FOR ENVIRONMENTAL RESEARCH AND ACTION

RECEIVED

JUN 15 1981

Mr. Ronald K. Awa, AIA
Wong, Sueda & Associates Inc.
905 Makahiki Way, Mauka Suite
Honolulu, Hawaii 96826

WONG, SUEDA
& ASSOCIATES, INC.

Dear Mr. Awa,

June 3, 1981

Life of the Land (LOL) has reviewed the EIS Preparation Notice prepared by the Department of Land Utilization that was included in your letter dated May 20, 1981. LOL is very interested in this proposed project and would appreciate kept informed as to the status of the project.

In our brief review of the proposed project, LOL has found two issues that we would like to raise at this time. They are as follows:

1. The proposed Development Plan for the Koolaupoko area has the area designated for agricultural use, and
2. Will a fast food service establishment at the corner of Kamehameha Highway and Waihee Road be compatible with the rural character of the area? This appears to be an issue for two reasons; wording to the effect of preserving the rural character of the area is in the proposed Development Plan as well as Chapter 205 A of the HRS regarding SMA permits.

In conclusion, we feel that the concerns raised by DLU in their EIS Preparation Notice on page 5, Major Impacts to the SMA, are valid and must be adequately mitigated should the proposed project gain the necessary approvals and permits.

Thank you for this opportunity to comment.

Sincerely,
Mark Isaacson
Mark Isaacson
LOL Staff

LIFE OF THE LAND
250 S. Hotel St., Rm. 211
Honolulu, Hawaii 96313
Ph. 521-1300

JUN 15 1981

404 PIKIOI STREET HONOLULU, HAWAII 96814 TELEPHONE 521-1300

ENVIRONMENTAL
COMMUNICATIONS
INC.

June 16, 1981

F. J. RODRIGUEZ
PRESIDENT

Mr. Mark Isaacson
Life of the Land
404 Piikoi Street
Honolulu, Hawaii 96814

Dear Mr. Isaacson:

Subject: EIS Preparation Notice for the Proposed Kahaluu
Development, Tax Map Key: 4-7-12: 12, 27

Thank you for your letter of June 3, 1981, on the abovementioned EIS Preparation Notice. We will inform the Department of Land Utilization that Life of the Land should be included on the distribution list as a reviewing agency for the Draft EIS. Additionally, we will, in the Draft EIS, address your concerns on the proposed Development Plan's designation of the site and the compatibility of a shopping complex in this area. Based on our review and studies, we have found that the surrounding area is being developed into a suburban area. While there are farming activities occurring around and in the mauka portion of the area, the single-family dwellings have steadily increased. This population increase would be beneficially served by a small shopping complex as proposed by this project. The location of such a facility will (1) allow a shorter travel time for residents in the vicinity, (2) provide a range of consumer and grocery goods for purchase, and (3) provide employment opportunities within the district. While these are beneficial, other impacts such as possible congestion, construction activities, etc., are not. These will be included in the Draft EIS so that both the beneficial and adverse impacts can be viewed objectively.

Very truly yours,

F. J. Rodriguez

F. J. Rodriguez

cc: Wong, Sueda and Associates, Inc.
Senator Hiram L. Fong, Sr.
Department of Land Utilization

FJR:CKT:ptl

1152 BISHOP BUILDING SUITE 407, P O BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 531-9391



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION

1601 KANEIHEHE STREET
HONOLULU, HAWAII 96813

June 8, 1981

Mr. Ronald K. Awa
Wong, Sueda & Associates, Inc.
Mauka Suite
905 Makahiki Way
Honolulu, Hawaii 96826

Dear Mr. Awa:

Kahaluu Development
TMK: 4-7-12:12, 27

Thank you for being consulted in the subject development.

We suggest that you include in your Environmental Impact Statement the following special concerns:

1. Explain thoroughly the concept of your 155-foot buffer strip as well as your treatment of the 35-foot roadway setback for widening of Kamehameha Highway.
2. Discuss the traffic impact along Kamehameha Highway in the vicinity of the project and disclose exactly how you plan to provide vehicular access to the area, especially along Kamehameha Highway, and the mitigating measures which might be required to provide safe vehicular movements.

Very truly yours,

Ryokichi Higashionna
Ryokichi Higashionna
Director of Transportation

JUN 15 1981

FJR:CKT:pl

1132 BISHOP BUILDING, SUITE 407, P. O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-6391

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

June 16, 1981

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

Dear Mr. Higashionna:

Subject: EIS Preparation Notice for the Proposed Kahaluu
Development, Tax Map Key: 4-7-12:12, 27

We have received and reviewed your letter of June 8, 1981, commenting on the abovementioned EIS Preparation Notice. In response to your concerns on traffic, we note that Henry T. Au is presently completing a traffic impact statement on the proposed project. He has received a copy of your letter and has indicated to us that the statement will include the concerns indicated under item 2 of your letter. For your review and information, we will either append the traffic impact statement to the Draft EIS or provide your office a copy of the study.

Your first comment on the treatment of the 155-foot buffer strip (between the shopping area and the Highway) will be addressed in the description section of the Draft EIS. We briefly note that the buffer strip will be significantly wider than necessary (from the 35-foot roadway setback) and that the buffer strip will be landscaped so as to enhance the overall appearance of the shopping center.

Thank you for your comments and concern on these matters.

Very truly yours,

F. J. Rodriguez

F. J. Rodriguez

cc: Department of Land Utilization
Wong, Sueda and Associates, Inc.
Senator Hiram L. Fong, Sr.
Henry T. Au

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



SILKEN R. ANDERSON
MAYOR

June 8, 1981

Mr. Ronald K. Awa, AIA
Wong, Sueda and Associates, Inc.
Architects and Planners
905 Makahiki Way, Mauka Suite
Honolulu, Hawaii 96826

Dear Mr. Awa:

SUBJECT: KAHALUU DEVELOPMENT
TMK: 4-7-12: 12 & 27
SITE LOCATION AND ANALYSIS

We are very interested in the proposed commercial and residential development adjacent to the Kahaluu flood control channel and lagoon. The Department of Parks and Recreation has plans for multiple usage for the Channel System KA-1 and the banks of KA-1 Lagoon which includes a part of the property proposed for development.

The Kahaluu Field and contiguous areas are destined to be a part of the future Kahaluu Regional Park. We are keenly interested in the west bank of the channel from the lagoon to Kaneohe Bay as it will be a critical recreational connector between the Kahaluu Beach Park and the Kahaluu Regional Park.

We will most certainly be willing to coordinate our efforts with your development plans.

Please include us in on the review process for the preliminary stages of this development project.

Sincerely yours,

ROBERT K. MASUDA, Director

RKM:vc

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

June 24, 1981

Mr. Robert K. Masuda, Director
Department of Parks and Recreation
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Masuda,

SUBJECT: EIS Preparation Notice for the Proposed Kahaluu
Commercial and Residential Development, Tax Map
Key: 4-7-12: 12 and 27

Thank you for your letter of June 8, 1981 on the above mentioned EIS Preparation Notice. In your letter you noted interest in the strip of property (part of the project site) which is adjacent to the lagoon. This strip of land (between the lagoon and the proposed development) will be set aside as a buffer area. By providing this buffer strip the recreational use can be preserved. Further details on the use of this area will be discussed and coordinated with your Department.

Very truly yours,

F. J. Rodriguez

cc: Senator Hiram L. Fong, Sr.
Wong, Sueda, and Associates, Inc.
Department of Land Utilization
Austin, Tsutsumi, and Associates, Inc.

JUN 19 1981



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 521
HONOLULU, HAWAII 96808

June 9, 1981

Mr. Ronald K. Awa
Wong, Sueda and Associates
Mauka Suite
905 Makahiki Way
Honolulu, Hawaii 96826

Dear Mr. Awa:

We have reviewed the notice that an EIS is to be prepared for the new Kahaluu shopping center. We have a number of comments to offer.

Of the three sewage disposal methods considered, alternative "a" appears to have the least impact on the aquatic environment. The description of the proposed drainage system could be more detailed, particularly with respect to increased run off. The EIS could also describe the impacts of construction activities, including changes in sedimentation and effects on aquatic fauna.

Mitigation measures could include establishing a buffer strip between the pond and the structure and parking areas to be built. It would be desirable to keep this strip park-like and open to recreational fishing. This strip should be tied to the proposed city park nearby.

We recommend that an archaeologist be retained to monitor ground-disturbing phases of the project and report immediately to our historic sites office (Ph. 548-6408) any sites or artifacts which may be uncovered. This recommendation stems from recent discoveries in the Kailua area where burial sites were encountered during early phases of construction.

Very truly yours,

SUSUMU ONO
Chairman,

Department of Land and Natural Resources
and State Historic Preservation Officer

JUN 19 1981

EDGAR A. MAJALEU
SECRETARY TO THE CHAIRMAN

DIVISIONS:
CONSERVATION AND
RECREATION
CIVILIC ENHANCEMENT
FISH AND GAME
FORESTRY
LAND MANAGEMENT
PLANNING
WATER AND LAND DEVELOPMENT

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

June 24, 1981

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

Dear Mr. Ono,

SUBJECT: EIS Preparation Notice for the Proposed Kahaluu
Commercial and Residential Development, Tax Map
Key: 4-7-12; 12 and 27

We have received and reviewed your letter of June 9, 1981, commenting on the above mentioned EIS Preparation Notice. Below responses to your comments are provided.

(1) "Of the three sewage disposal methods considered, alternative 'a' appears to have the least impact on the aquatic environment."

The project engineer is investigating the types of sewage treatment and disposal methods which will meet the Department of Health's requirements and result in little or no adverse impacts on the environment. Information on the type of sewage treatment and disposal proposed will be included in the EIS.

(2) "The description of the proposed drainage system could be more detailed, particularly with respect to increased run off."

Specific details on the proposed drainage system will be included in the EIS.

(3) "The EIS could also describe the impacts of construction activities, EIS could also describe the impacts of construction activities, including changes in sedimentation and effects on aquatic fauna."

The impact on aquatic fauna will be minor; almost all of the construction activities will be away from the water area with the exception of the proposed drainage. A discussion on the impact on aquatic fauna will be included in the EIS.

(4) Establishing a buffer strip between the development and the pond.

A buffer strip will be provided and used (probably for recreational purposes) between the project and the lagoon.

Mr. Susumu Ono, Chairman
June 24, 1981
Page 2

- (5) "We recommend that an archaeologist be retained to monitor ground-disturbing phases of the project and report immediately to our historic sites office ... any sites or artifacts which may be uncovered."

Archaeological investigation was undertaken for the flood control project and lagoon. That investigation indicated that there were no archaeological sites in the project area (which is adjacent to the lagoon). Based on this information, it is felt that the services of an archaeologist is not necessary.

Very truly yours,



F. J. Rodriguez

cc: Senator Hiram L. Forst, Sr.
Wong, Sueda, and Associates, Inc.
Department of Land Utilization
Austin, Tsutsumi, and Associates, Inc.

ENVIRONMENTAL
COMMUNICATIONS
INC.

June 24, 1981

F. J. RODRIGUEZ
PRESIDENT

Dr. Michael J. Chun, Director and
Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Dr. Chun,

SUBJECT: EIS Preparation Notice for the Proposed Kahaluu
Commercial and Residential Development, Tax Map
Key: 4-7-12, 12 and 27

We have received and reviewed your letter of June 9, 1981, on
the above mentioned EIS Preparation Notice. In response to comments,
we would like to provide the following dispositions.

- (1) "A consultant flood control report has been accepted for
the project site which will satisfy CZC requirements for
Zone A designated area."
 - (2) This information will be incorporated in to the EIS.
 - (3) "The developer will be required to comply with the pro-
visions of Ordinance No. 2412 for Waihee Road. These pro-
visions are not applicable to the State-owned portion of
Kamehameha Highway."
 - (4) The provisions of Ordinance No. 2412 and its applicability
to the project will be noted.
 - (5) Suitability of the injection wells and information on the
operation and maintenance of the proposed sewage system.
- The project engineer is investigating the types of sewage
treatment and disposal methods which will meet the Depart-
ment of Health's requirements and result in little or no
adverse impacts on the environment. Information on the
type of proposed sewage treatment and disposal, operation
and maintenance, proposed will be included in the EIS.

Dr. Michael J. Chun, Director and
Chief Engineer
June 24, 1981
Page 2

Thank you for your comments. The Draft EIS will be available for
agency review within the next few weeks; a copy of the Draft EIS will
be sent to your Department.

Very truly yours,



F. J. Rodriguez

cc: Senator Hiram L. Fong, Sr.
Wong, Sueda, and Associates, Inc.
Department of Land Utilization
Austin, Tautsumi, and Associates, Inc.

June 10, 1981

June 24, 1981

F. J. RODRIGUEZ
PRESIDENT

Mr. Ronald K. Awa
Wong, Sueda & Associates, Inc.
Mauka Suite, 905 Makahiki Way
Honolulu, Hawaii 96826

Dear Mr. Awa:

Subject: Environmental Assessment for Kahaluu Development

TMK: 4-7-12: 12, 27

We have reviewed the above-mentioned proposal and offer the following comments for your consideration:

Environmental Characteristics.

Item C.1. Another consideration that should be made, relating to possible flood hazard to the proposed development, is that the flood channels shown as W-1 and W-2 in the Kahaluu Watershed Work Plan will not be constructed. Because of lack of community support and questionable economic justification, it was mutually agreed by the City and County of Honolulu, the Kahaluu Neighborhood Board, and the Soil Conservation Service that these flood control channels would not be constructed. This creates a situation where a portion of the proposed development may still be subject to flooding. The Soil Conservation Service has not conducted any studies to determine what the extent of flooding might be.

The City and County has acquired a strip of land around the perimeter of the lagoon which will provide adequate access for recreational use, and is also part of the Watershed Work Plan. The Soil Conservation Service supports an additional setback along the lagoon which, we feel, would further enhance its recreational potential.

Item C.3. Alternatives b and c. The Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, shows that the predominant soils in the vicinity of the proposed development are Tropoqupts and Pearl Harbor clay. Both of these soil types have severe limitations for septic tanks and cesspools.

We recommend that the EIS address the possibility of sewage effluent pollution of Kaneohe Bay from these alternatives.

Thank you for the opportunity to review this document.

Sincerely,

JACK P. KANALZ
JACK P. KANALZ
State Conservationist

The Soil Conservation Service
is an agency of the
Department of Agriculture

SCS-AS-1

JUN 10 1981

1152 BISHOP BUILDING SUITE 407, P. O. BOX 538 • HONOLULU HAWAII 96809 • TELEPHONE (808) 521-4281

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: EIS Preparation Notice for the Proposed Kahaluu
Commercial and Residential Development, Tax Map
Key: 4-7-12: 12 and 27

Thank you for your letter of June 10, 1981, commenting on the above mentioned EIS Preparation Notice. Responses to your concerns are addressed below.

- (1) Item C.1. The flooding of the parcel was studied in a drainage study prepared by Austin, Tautoumi, and Associates, Inc. Pertinent information and/or portions of the drainage study will be included in the EIS. There will be a buffer strip provided between the development and the lagoon. The further use and maintenance of this strip of land will be discussed and coordinated with the Department of Parks and Recreation, City and County of Honolulu.
- (2) Item C.3. We are aware of the limitations of the soil types (e.g. Tropoqupts and Pearl Harbor clay) and alternatives for other methods of sewage effluent disposal are under consideration. The sewage treatment methods and disposal alternatives will be discussed in the EIS.

The Draft EIS should be available in the next few weeks; a copy of the Draft EIS will be provided to your agency for review and comments.

Very truly yours,
F. J. Rodriguez
F. J. Rodriguez

cc: Senator Hiram L. Fong, Sr.
Wong, Sueda, and Associates, Inc.
Department of Land Utilization
Austin, Tautoumi, and Associates, Inc.



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96866

PODED-PV

RECEIVED
10 June 1981
JUN 1 2 1981

WONG, SUEDA,
& ASSOCIATES, INC.

Mr. Ronald K. Awa, A.I.A.
Wong, Sueda & Associates, Inc.
Architects and Planners
Hauka Suite, 905 Makahiki Way
Honolulu, HI 96826

Dear Mr. Awa:

Thank you for providing the Notice of Preparation (NOP) of an Environmental Impact Statement (EIS) for the proposed Kahaluu Commercial/Residential Development, Oahu, Hawaii. We have reviewed the material submitted by your firm, and we provide the following comments to assist you with preparation of the EIS:

a. Based upon the information provided in the NOP, a Department of the Army permit is not required for the project.

b. The proposed development site is located in the Waihee Stream Flood Plain area (Zone A designation) of the 100-year flood, according to the Flood Insurance Study for the Island of Oahu prepared by the Federal Insurance Administration. Zone A areas were determined by approximate study methods, and flood elevation data and the floodway were not established for these areas. Flood levels and limits of the floodway are currently being determined by the Corps for the City and County of Honolulu, for those areas designated Zone A. The "100-year flood" is an event that has a one percent chance of being equalled or exceeded in any given year. The "floodway" is defined as the channel of a river or watercourse and adjacent land areas that must be reserved for the discharge of the 100-year flood.

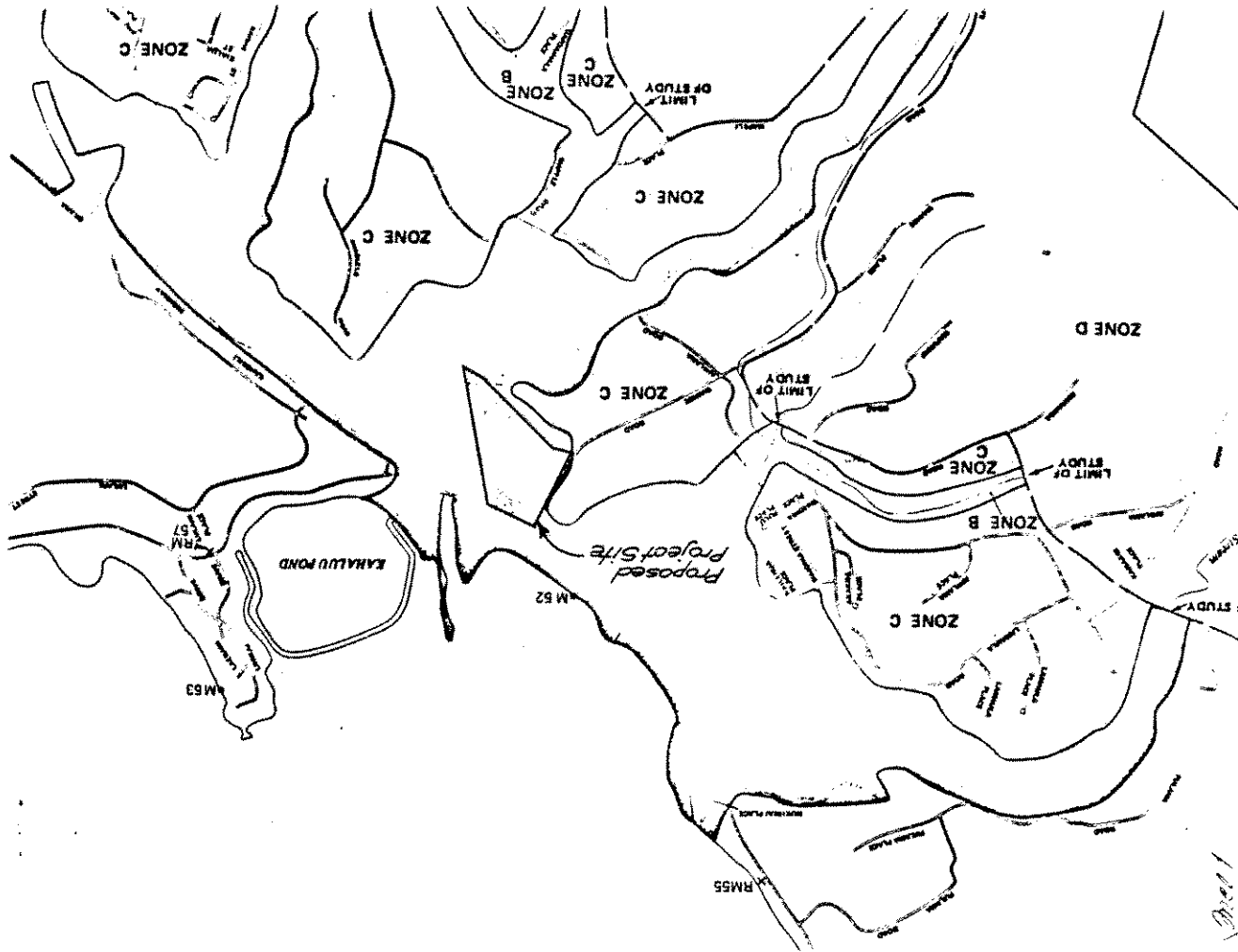
The Corps would be pleased to review the EIS when it is completed.

Sincerely,

Handwritten signature of Lukisuk Cheung
LUKISUK CHEUNG
Chief, Engineering Division

1 IncI
As stated

JUN 1 9 1981



June 24, 1981

EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30*	Areas of 100-year flood, base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
VI-V30*	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.
*	The numerals indicate the magnitude of difference between the 100-year and 10-year flood elevations. For numerals between 1-20, the difference is one half of the value; for values greater than 20, the difference is 10 less than the numerals shown. This information is used in establishing insurance rates.
18	100-year tsunami or riverine elevation line, with elevation in feet above mean sea level.
---	Zone boundary line

Mr. Kieuk Cheung, Chief
Engineering Division
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858
Dear Mr. Cheung,

SUBJECT: EIS Preparation Notice for the Proposed Kahaluu
Commercial and Residential Development, Tax Map
Key: 47-12r 12 and 27

Thank you for your letter of June 10, 1981, commenting on the above mentioned EIS Preparation Notice. Responses to your comments are provided below.

Item a. We concur that it is unlikely that a Department of the Army permit will be required.

Item b. The flooding of the parcel was studied in a drainage study prepared by Austin, Tsutsumi, and Associates, Inc. Pertinent information and/or portions of the drainage study will be included in the EIS.

The Draft EIS should be available in the next few weeks; a copy of the Draft EIS will be provided to your agency for review and comments.

Very truly yours,



F. J. Rodriguez

cc: Senator Hiram L. Fong, Sr.
Wong, Sueda, and Associates, Inc.
Department of Land Utilization
Austin, Tsutsumi, and Associates, Inc.

June 12, 1981

Mr. Ronald K. Awa
Page 2

June 12, 1981

Mr. Ronald K. Awa
Wong, Suceda & Associates, Inc.
Mauka Suite, 905 Makahiki Way
Honolulu, Hawaii 96826

Dear Mr. Awa:

Subject: Your Letter of May 20, 1981
Transmitting the Kahaluu
Development (TMK: 4-7-12: 12, 27)
Environmental Impact Statement
Preparation Notice

We have the following comments on the proposed Kahaluu
Development:

1. We are not making any advance water commitments for proposed projects. The determination on the availability of water will depend upon the status of the water supply of our system when you submit your building permits or construction drawings, whichever are applicable to the project, for our review and approval.
2. Development that requires action by the City Department of Land Utilization should first be approved by that department before we, in turn, will take any action on any proposed development.
3. Should water be made available to the project, you will be required to pay our water development charge which covers our development of a source, reservoir, and transmission mains to provide service to the project.
4. Construction plans must be submitted for our review and comments.

If you have any questions, please contact Lawrence Whang
at 548-5221.

Very truly yours,



KAZU HAYASHIDA
Manager and Chief Engineer

JUN 22 1981

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

June 24, 1981

Mr. Kazu Hayashida, Manager and
Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania
Honolulu, Hawaii 96843

Dear Mr. Hayashida,

SUBJECT: EIS Preparation Notice for the Proposed Kabahu
Commercial and Residential Development, Tax Map
Key: 4-7-12: 12 and 27

Thank you for your letter of June 12, 1981, on the above mentioned
EIS Preparation Notice. We have reviewed your items 1 through 4 and
concur with this information. The information under items 1 and 3
will be incorporated into the EIS.

The Draft EIS should become available for review in the next
few weeks; a copy of the Draft EIS will be sent to your agency for
review and comments.

Very truly yours,



F. J. Rodriguez

cc: Senator Hiram L. Fong, Sr.
Wong, Sueda, and Associates, Inc.
Department of Land Utilization
Austin, Teutsumi, and Associates, Inc.



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

June 15, 1981

Mr. Ronald K. Awa, A.I.A.,
Wong, Sueda & Associates, Inc.
Mauka Suite, 905 Makahiki Way
Honolulu, Hawaii 96826

Dear Mr. Awa:

The Department of Agriculture has reviewed the Kahaluu Development, TMK: 4-7-12:12, 27, Environmental Impact Statement Preparation Notice and offers the following comments.

The subject area is classified as Other Important Agricultural Land according to the Agricultural Lands of Importance to the State of Hawaii (ALISH) system. We note that the site has been used for the stockpiling of fill material from the Kahaluu Flood Control Project. Therefore, the ALISH classification may be altered. An on-site soils test should be made if one has not been done since the fill-in of the wetland area.

We believe the EIS should also address any potential impacts the project might have on the taro farms and other agricultural activities located in the area. Specifically, consideration should be given to increased property values, nuisances, and increased pressure to urbanize lands which are currently being used or potentially could be used for agriculture. This should not be limited to just the land adjacent to the subject parcels, but should include lands further mauka which could be affected by spillover or subsequent urbanization.

Thank you for the opportunity to comment.

Sincerely,

John Farias, Jr.
JOHN FARIAS, JR.
Chairman, Board of Agriculture

cc: Dept. of Land Utilization, C&C of Honolulu

ENVIRONMENTAL
COMMUNICATIONS
INC.

June 24, 1981

F. J. RODRIGUEZ,
PRESIDENT

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

Dear Mr. Farias,

SUBJECT: EIS Preparation Notice for the Proposed Kahaluu
Commercial and Residential Development, Far Map
Key: 4-7-12: 12 and 27

We have received and reviewed your letter of June 15, 1981 commenting on the above mentioned EIS Preparation Notice. We are providing the following dispositions in reply to your concerns.

- (1) The EIS document we note that the project site is classified as Other Important Agricultural Land.
- (2) On-site soil tests are normally conducted prior to construction and earthwork. The test results provide the engineer with the information necessary to determine soil stability and suitability. Mitigation measures will be taken, if necessary.
- (3) Presently the site is unused and there are no taro or other farms in the near vicinity. Subsequently, no impact on agricultural activities is anticipated.
- (4) The project development should not act as a catalyst for urbanization. Urbanization of Kahaluu has been occurring over the past ten years, such a growth trend is well established. Finally, the urbanization of properties is based on the zoning. Subsequently, it is the zoning which is the primary cause for urbanization.

Thank you for your comments. The Draft EIS should be available within the next few weeks for distribution and review.

Very truly yours,
F. J. Rodriguez
F. J. Rodriguez

cc: Senator Hiram L. Fong, Sr.
Wong, Sueda, and Associates, Inc.
Department of Land Utilization
Austin, Teutsumi, and Associates, Inc.



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3078
HONOLULU, HAWAII 96826

June 15, 1981

GEORGE A. L. YUEN
DIRECTOR OF HEALTH
JOHN F. CHAMBERS, M.D.
DEPUTY DIRECTOR OF HEALTH
HENRY N. THOMPSON, M.A.
DEPUTY DIRECTOR OF HEALTH
MELVIN R. KOLZUMI
DEPUTY DIRECTOR OF HEALTH
ALEXANDER MADRID SHAW, M.A., J.D.
DEPUTY DIRECTOR OF HEALTH

Mr. Ronald K. Awa, A.I.A.
Hong, Sueda & Associates, Inc.
905 Makahiki Way, Mauka Suite
Honolulu, Hawaii 96826

Dear Mr. Awa:

Subject: Request for Comments on Proposed Environmental Impact Statement
(EIS) for Kahala Development, TMK 4-7-12: 12, 27

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

We submit the following comments for your information and consideration:

Sewage Disposal

Three alternatives are proposed by the developers:

1. Construction of an on-site collection system, a sewage pump station and force main to convey sewage to the Ahumahu Treatment Plant.
2. Construction of a private treatment plant with injection wells for the commercial complex and cesspools for the residential subdivision.
3. Construction of a larger private sewage treatment plant with injection wells and/or seepage pits to serve both the commercial and residential development.

After reviewing these alternatives, the proposal to construct an on-site collection system to convey sewage to the public sewerage system appears to be the most feasible and functional.

The proposal to use cesspools is not recommended because of the impermeable subsol formation (silty clay) and high groundwater table. This is based on the performances of existing cesspools and disposal systems in the surrounding areas. The use of a private treatment plant with injection wells is also not recommended because of the difficulties in dispersing treated sewage or effluent into the ground. Exploratory wells have been dug and tested to depths of 100 feet, but showed poor percolation qualities.

The alternative to construct a larger treatment plant with injection wells and/or seepage pits is also not recommended because of the poor percolation qualities of the subsol strata and high groundwater table. Besides, the BWS has imposed a depth limitation not to exceed 30 feet for injection wells. In other words, the question of safe effluent disposal still remains unsolved.

JUN 19 1981

Mr. Ronald K. Awa

-2-

June 15, 1981

Surface Drainage

Under normal conditions, a major portion of this property is considered a swamp land. During heavy rains, flood conditions will be more pronounced and individual sewage disposal systems will become inoperative if permitted to be installed.

Noise

1. The proposed project must be designed to comply with the provisions of Public Health Regulations, Chapter 44B, Community Noise Control for Oahu. Noise from equipment such as air conditioning/ventilation units and exhaust units must be attenuated to meet the allowable noise levels of the regulations based on zoning districts.
2. The proposed parking areas must be designed to minimize noise, specifically from tire squeals and vehicular noise emissions.
3. Noise from activities associated with the commercial complex portion of the proposed project may adversely affect residents within the project's residential subdivisions as well as other nearby residents. Noise impacts from refuse pickup trucks, delivery trucks, and yard maintenance activities can be minimized by the use of landscape screening/buffering plans, scheduling of pick ups, and careful choice of equipment.
4. Noise from activities associated with the use of recreational facilities and park areas can have adverse effects in terms of annoyances on adjacent residents. Areas planned for such usage should be designed to minimize possible noise impacts.
5. Construction activities must comply with the provisions of Public Health Regulations, Chapter 44B, Community Noise Control for Oahu:
 - a. The contractor must obtain a noise permit if noise levels from the construction activities are expected to exceed the allowable levels of the regulations.
 - b. Construction equipment and on-site vehicles or devices requiring an exhaust of gas or air must be equipped with mufflers.
 - c. The contractor must comply with the conditional use of the permit as specified in the regulations and with the conditions issued with the permit.
6. 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. 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.

ENVIRONMENTAL
COMMUNICATIONS
INC.

Mr. Ronald K. Awa

June 15, 1981

June 24, 1981

F. J. RODRIGUEZ
PRESIDENT

Sincerely,

Melvin K. Koizumi

MELVIN K. KOIZUMI
Deputy Director for
Environmental Health

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

Dear Mr. Koizumi,

SUBJECT: EIS Preparation Notice for the Proposed Kahahu
Commercial and Residential Development, Tax Map
Key: 4-7-2; 12 and 27

We have received and reviewed your letter of June 15, 1981, on the above mentioned EIS Preparation Notice. Your letter addressed three (3) major concerns, sewage treatment and disposal, surface drainage, and noise, these concerns are discussed below.

(1) Sewage Treatment and Disposal.

The project engineer is investigating the types of sewage treatment and disposal methods which will meet the Department of Health's requirements and result in little or no adverse impacts on the environment. Information on the type of sewage treatment and disposal proposed will be included in the EIS.

(2) Surface Drainage (relating to an individual sewage disposal system alternative).

The proposed sewage treatment and disposal system selected will consider the impact of flooding. This will be noted in the EIS.

(3) Noise Control.

Discussion on noise and mitigation measures will include those aspects identified under items 1 through 6.

Thank you for your comments, we appreciate your concern on these matters.

Very truly yours,

F. J. Rodriguez

F. J. Rodriguez

cc: Senator Hiram L. Fong, Sr.
Wong, Sueda, and Associates, Inc.
Department of Land Utilization
Austin, Tsutsuimi, and Associates, Inc.

DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813



COLLEEN R. ANDERSON
CLERK

WILLARD T. CHOW
CHIEF PLANNING OFFICER

Wong, Sueda & Associates, Inc.
Page 2

Although the Development Plan for Koolaupoko is just a proposed plan at this time (with probable adoption in the near future), the goals and objectives embodied in this document must be considered when evaluating the merits of future developments for the following reasons:

1. The Development Plan was developed as part of a process of government/citizen interaction--a process that included an intensive citizen participation effort through the Neighborhood Boards and the Development Area Organizations. As such, the Development Plan is a statement of concerns of both the City and County and the residents of the Koolaupoko Community.
2. The present Detailed Land Use Maps allow a much greater intensity of urbanization than is prescribed by the current General Plan of the City and County of Honolulu. The proposed DP for the area recognizes this fact and specifies a land use pattern which implements the intent of the General Plan.

Sincerely,

Ralph Kawamoto

RALPH KAWAMOTO
Planner

APPROVED:

Willard T. Chow

WILLARD T. CHOW

DGPS/81-1769

June 15, 1981

Wong, Sueda & Associates, Inc.
Mauka Suite
905 Makahiki Way
Honolulu, Hawaii 96826

Gentlemen:

EIS Preparation Notice for
Commercial/Residential Complex in Kahaluu
TMK: 4-7-12:12, 27

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

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

Relationship of the project to the General Plan and the proposed Development Plans (DPs)

The project site is zoned B-2 Business District and R-3 and R-6 Residential Districts. The Kaneohe-Kualoa Detailed Land Use Map (DLUM), adopted July 29, 1964, designates the project site for highway right-of-way, commercial, low-density residential and sewage treatment plant uses. However, the proposed Development Plan for Koolaupoko delineates the proposed site for agricultural use, thereby signifying an inconsistency in permitted uses between present thinking and the past.

In support of the new use, the General Plan of the City and County of Honolulu, adopted January 18, 1977, identifies the Kahaluu area as "rural" with significant urban growth in this area not desired. The DP proposals follow that by providing a farming environment in the community with opportunities for agricultural diversification and maintaining agricultural lands along the windward coast for truck farming, flower growing, livestock production and other types of diversified agriculture.

JUN 19 1981

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

June 24, 1981

Mr. Willard T. Chow, Director
Department of General Planning
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Chow,

SUBJECT: EIS Preparation Notice for the Proposed Kahaluu
Commercial and Residential Development, Tax Map
Key: 4-7-12: 12 and 27

We have received and reviewed your letter of June 15, 1981, on the above mentioned EIS Preparation Notice. Your concern was that the EIS discuss the relationship of the project to the General Plan and the proposed Development Plan (DP) for the area. That is, presently the project site is zoned B-2, R-3, and R-6 while the General Plan and the proposed DP designates the site for rural uses. While the EIS will discuss this discrepancy, it should be pointed out that the existing zoning of the site prevails over the General Plan and the proposed DP for the area. The recent State Supreme Court decision (the Nuuanu Neighborhood Board and various individuals versus the Department of Land Utilization of the City and County of Honolulu, Tyrone Kusao, Director of Land Utilization, and Dowsett Highlands Land Trust) identifies the priority of zoning over the broader plans such as the General Plan. Subsequently, it appears that the Court has interpreted the ordinances and laws to mean that land use plans provide guidance for land use decisions, but zoning prevails when actual land use is implemented.

While this discrepancy is unfortunate, the developer has indicated that the project was pursued prior to the proposed DP, and that because of various expenditures and planning efforts, he has certain "vested rights" in the subject property.

This discussion will be included in the EIS presently being prepared.

Very truly yours,

F. J. Rodriguez
F. J. Rodriguez

cc: Senator Hiram L. Fong, Sr.
Wong, Sueda, & Associates, Inc.
Department of Land Utilization
Austin, Tautsaml & Associates, Inc.

FJR:CKT:pl
1751 BISHOP BUILDING, SUITE 407, P. O. BOX 536 • HONOLULU, HAWAII 96809 • TELEPHONE (808) 521-6381



"Let us not ever have
an unhappy minority"

June 17, 1981

Ronald K. Awa, A.I.A.
Wong, Sueda and Associates, Inc.
Mauka Suite, 905 Makahiki Way
Honolulu, Hawaii 96826

Market City, Ltd. et al Proposed Development
Kahalu'u (Waie'he), O'ahu, Hawai'i, TMK 4-7-12:12 & 27
Preparation of Draft Environmental Impact Statement

Gentlemen:

This letter is our response to your request for written comments relating to the preparation of a Draft Environmental Impact Statement for the proposed Market City, Ltd. development at Kahalu'u (Waie'he).
The Kaha'lu'U Neighborhood Board No. 29 has serious concerns regarding the many adverse impacts which the proposed development will have on the Community and on the Environment.

General Community Impact

The proposed development clearly would be an urban growth generator. The commercial aspect of the project would encourage additional residential development.

Encouragement of urban growth in this Community is contrary to the 1977 City & County General Plan which establishes Objectives and Policies relating to the directions growth should take. The General Plan calls for stabilizing the proportion of O'ahu's population in Urban Fringe areas (i.e. Ahumahu), reducing the proportion in Rural areas (i.e. Kahalu'u to Kualoa) and directing population growth to the Primary (Honolulu) and Secondary (Ewa) Urban Centers. The Development Plans, now under consideration by the City Council, reflect these Policies and Objectives on growth.

The Community (He'eia Kaa, 'Ahumahu, Kahalu'u, Waie'he, Ka'alaea, Waiakole, Waikane, Hakipu'u and Kualoa), through various community organizations from the 1960's and through the Kaha'lu'U Neighborhood Board since 1976, has developed a consensus and adopted Community Goals (see Exhibit I - Statement of Community Goals) which call for the development of diversified agriculture, maintenance of a rural character and preservation of natural water and land resources. The detailed story of 12 years of the Community's planning efforts is contained in A Planned Community: Steps on the Journey - Kualoa to He'eia Community Initiatives published by the Kaha'lu'U Neighborhood Board in 1980. A wealth of information also can be found in the 1975 Kaha'lu'U Watershed Final Environmental Impact Statement and the 1978 Kane'one Bay Urban Water Resources Study.

Therefore, how, being an urban growth generator (contrary to City & County Objectives and Policies and Community Goals), can the proposed development not have serious adverse impacts on the community's social fabric, agricultural development, natural resource protection, public services, land and tax costs and the overall quality of the environment? How will the community-wide environmental and social costs be calculated?

Hawai'i Revised Statutes, Section 205 A-26 (relating to the SMA permit process) states: "No development shall be approved unless the authority has first found: (A) That the development will not have any substantial adverse environmental or ecological effect, except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health safety, or compelling public interest. Such adverse effects shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself might not have a substantial adverse effect, and the elimination of planning options; . . .", emphasis added.

In addition to the proposed development under review, there are a number of major residential developments proposed or planned along Kam Highway or off various valley roads. Not only the individual but, more importantly, the cumulative adverse environmental and ecological impacts of these projects on our watersheds, agricultural lands and Kane'one Bay could be disastrous. Furthermore, various planning options would be eliminated and others severely restricted thus jeopardizing the achievement of Community Goals and the implementation of City and County Policies.

Therefore, how, considering the cumulative effect of individual developments and the loss of planning options, can the proposed development not have overwhelming adverse impacts on the community's environment and its ability to plan? How can the Community and the City & County achieve their Goals and Objectives?

Impact on Community Recreational Requirements

For many years, the Community has worked towards creating a Regional Park Complex and Community Services Center (See Exhibit II - 1981 Map and Exhibit III - 1977 Conceptual Plan).

A major impetus for the Park was the plan for the Kaha'lu'U multi-purpose recreational and flood control project. The 1969 Kaha'lu'U Watershed Work Plan Agreement executed by the City & County, the Windward Soil & Water Conservation District and the U.S. Soil Conservation Service requires that the flood control lagoon be surrounded by a 22 acre park with recreational facilities (see Exhibit IV - Watershed Work Plan excerpts, 1969 and Exhibit V - CZM Assessment Form, 1981). The Honolulu City Council and the Hawaii Senate and House of Representatives have passed resolutions expressing the intent and concept of an integrated Kaha'lu'U District Park-Civic Center Complex and the intent and hope of funding land acquisition over a 10 year period. Several non-contiguous parcels have been purchased for this purpose by the City & County and the State. The Department of Parks and Recreation 1980 Community Based Recreation Plan for Ko'olauoko and their 1980 Long Range Plan (see Exhibits VI & VII - maps and excerpts from these plans) incorporate parks and funding for this park complex under sections relating to Community Parks, District Parks and Regional Parks.

The proposed development would prevent the extension of the park along an extensive portion of the lagoon (approx. 1000') and would thus cut off public access to the lagoon which is a major element of the lagoon/park recreational complex required by government agreements. Furthermore, the proposed development prevents any connection between the shoreline and mauka components of the park complex thus precluding rational and comprehensive park planning. The flood control project is not complete and there is reason to believe that the Waie'he

JUN 22 1981

Stream sector will not be constructed. Thus the proposed development is an inappropriate use for an area that remains, and may continue to remain, in a flood hazard zone. On the other hand, recreational uses are permitted in and are appropriate for flood hazard districts. Park designation would ensure the protection of the lagoon for water based recreation.

Therefore, how, by restricting public recreational access to the lagoon, precluding completion of the required lagoon/park complex and placing an inappropriate use in a flood prone area, can the proposed development not have severe adverse impacts on the immediate and long range recreational requirements of the Community and on the integrity of the flood control project?

Impact on Community Services & Facilities Requirements

The commercial portion of the proposed development calls for 96,000 sq. ft. of commercial space within 4 structures and for 284 parking stalls. Uses would include a supermarket, general commercial/retail establishments and a fast food outlet. Aside from being an urban growth generator as previously discussed and encouraging strip commercial development along Kam Highway, a commercial venture of this type and scale is not needed in the community. Equivalent existing facilities at nearby Temple Valley Shopping Center are adequate to meet the future requirements of a community based on the General Plan and the Development Plans. Temple Valley is conveniently located near the major existing and proposed residential area. Furthermore, the proposal is contrary to the requirements of the Community which call for existing and expanded social, civic, educational and recreational activities and future agriculturally oriented marketing facilities (see Exhibit I - Position on Community Services Center).

Therefore, how, by encouraging urban growth and duplicating adequate existing commercial facilities, can the proposed development not have considerable adverse impacts on Community efforts to provide the services and facilities it truly needs?

Impact on Community Housing Requirements

The residential portion of the proposed development calls for 21 single family houses on 10,000 sq. ft. lots. For our rural and agricultural community, this is a major development. There is a need for low and moderate income housing for many community residents and special housing needs for the elderly. The proposal does not indicate that any housing would be allocated to meet these needs.

Therefore, how, by catering to a general islandwide housing market, can the proposed development not have an adverse impact on Community efforts to encourage housing affordable by, or tailored to, the needs of its residents?

Impact on Agricultural Lands

As previously discussed, the General Plan Objectives and Policies and our Community Goals are to encourage the development of a rural, agriculturally based community from He'eia Kea to Kualoa. There is a significant amount of Agricultural Lands of importance to the State of Hawaii (ALISH) in our community and their protection is of paramount importance.

Therefore, how, by encouraging urban growth and thereby exerting pressures to convert agricultural land to urban uses, can the proposed development not have adverse impacts on State of Hawaii and Community efforts to retain lands in agriculture and to promote the development of diversified agriculture and aquaculture?

Impact on Water Resources

There is now a critical water resource problem on Windward O'ahu. Once plentiful, water resources are being developed at such a rapid rate that withdrawals and diversions for urban use have dried up waterfalls and severely reduced flows in several important streams. This in turn effects diversified agriculture and the fragile ecology of our streams, aquifers, fishponds, shoreline and Kane'ohu Bay. Our Board has studied these water resource problems in depth (see Exhibit VIII - Water Resources Position Statements).

Thus, how, by being a major water user and by encouraging urban growth, can the proposed development not have drastic adverse impacts on stream flows, agriculture and the ecology within our community?

Flood Hazard Considerations

Have drainage considerations been thoroughly addressed? Site drainage into any part of the lagoon may be unsatisfactory for maintenance of water quality and the structural integrity of the lagoon. Water quality is essential for marine life in the lagoon and Kane'ohu Bay. Existing fill on the site has already disrupted the natural drainage pattern and water is seeping through and damaging the lagoon banks during normal weather and flowing over the banks during heavy rains.

Sewage Disposal Considerations

Can sewage disposal problems be solved? Cesspools, septic tanks, aerobic units, injection wells, private treatment plants, etc. seem unacceptable due to soil impermeability and water table problems; public health hazards and contamination of lagoon and bay. There are objections to a pump station and force main system because, again, a sewer line will generate conditions conducive to urbanization which is contrary to the General Plan and Community Goals. Although the Department of Public Works does have a Kahalu'u sewer system plan, this plan is designed and intended to serve only those areas which now have a high concentration of cesspools and a high cesspool failure rate.

Traffic Considerations

Would increased traffic cause unacceptable problems? The proposed commercial development would greatly increase traffic volume along portions of Kam Highway and would cause considerable congestion and turning problems at the Highway's intersection with Waie'e Road. Also, access to the project from Kam Highway would be undesirable because of the close proximity to the Waie'e Road intersection, the new Kahalu'u Stream bridge and required access to the shoreline park property across the highway. The Board opposes encouraging development that eventually could require widening the highway from 2 lanes to 4 lanes.

Summary and Conclusion

We have raised a number of the many questions which must be fully addressed in the Draft and Final Environmental Impact Statements for the Proposed Market City, Ltd. et al commercial and residential development.

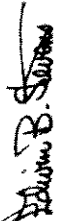
Not the least important of these questions deal with adverse impacts on our agricultural lands and water resources, adverse environmental or ecological effects of the potential cumulative impact of individual developments and the elimination of planning options.

KAHALU'U NEIGHBORHOOD BOARD NO. 29

KAHALU'U COMMUNITY CENTER
87 232 WAIHEE ROAD
KANEHOHE HAWAII 96744

HEA'ENA, KAHALU'U, WAIHEE, WAIHOLE, WAIKANE, HAKIPIU AND MAUOLA.

Very truly yours



Edwin B. Stevens, Chairman
Kahalu'u Neighborhood Board No. 29



"Let us not ever have
an unhappy minority"

cc: Fred Rodrigues, Environmental Communications, Inc
Department of Land Utilization
Department of Parks and Recreation
Neighborhood Commission
Kahalu'u Neighborhood Board No. 29 (3)

- Exhibits: I. Statement of Community Goals and Position on Community Services Center - NB #29 - 1979
II. Kahalu'u Regional Park Complex and Community Services Center - Map - NB #29 - 1981
III. Kahalu'u District Park - Conceptual Plan - Ka Lama
IV. Kahalu'u Watershed Work Plan (Excerpts) - 1969
V. Kahalu'u Watershed CZM Assessment (Partial) - 1981
VI. Community Based Recreation Plan (Partial) - DP&R - 1980
VII. The Long Range Plan (Partial) - DP&R - 1980
VIII. Water Resources Position Statements - NB#29 - 1981

- References: General Plan, City and County of Honolulu - 1977
A Planned Community: Steps on the Journey - Kualoa to He'eia Community Initiatives - Neighborhood Board #29 - 1980
Kahalu'u Watershed, Final EIS - Soil Conservation Service - 1975
Watershed Work Plan (Agreement) Kahalu'u Watershed - City and County of Honolulu, Windward Oahu Soil and Water Conservation District, U.S. Soil Conservation Service - 1969
Kaneohe Bay Urban Water Resources Study - U.S. Army Corps of Engineers - 1978

Statement of Community Goals
adopted by Neighborhood Board #29 at 8-22-79 and 9-12-79 meetings

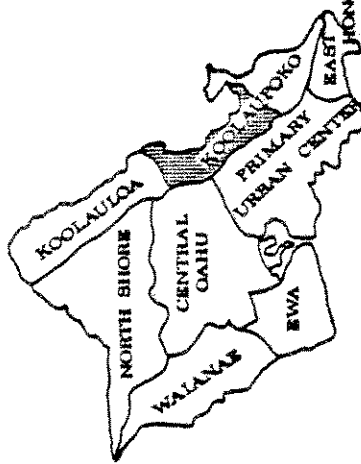
The Windward area from Kualoa to He'eia (here-in-after referred to as Kahalu'u) is distinctively rural in character, possesses great scenic beauty and serves as a critical buffer zone at the very edge of Honolulu's urbanization. The goals of the Development Plan and this Ordinance shall insure that Kahalu'u a) Remains a community devoted to diversified agriculture and related activities; b) Preserves its ocean (Kaneohe Bay) and mountain (Ko'olau Range) beauty and its natural water and land resources; and c) Maintains its essential rural lifestyle. All efforts to preserve and develop the community's economic, natural and human resources shall be directed towards the accomplishment of these goals.

Position on Community Services Center

adapted by Neighborhood Board #29 at 8-22-79 and 9-12-79 meetings

In order to establish a social and economic cohesiveness for rural Kahalu'u, provision should be made for a planned community service center located in the general vicinity of lower Waihe'e Road and the Flood Control Lagoon. This center will be the focal point for existing and expanding social, civic, educational and recreational activities and future agriculturally oriented marketing facilities. A District Park land acquisition program (already authorized by State and County resolutions and mandated by Federal/County contracts) should be carefully implemented and appropriate architectural controls should be applied to provide unifying design elements for this center.

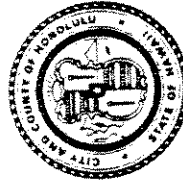
DEPARTMENT/COMMUNITY WORKING PLAN



COMMUNITY-BASED RECREATION PLAN

DPA 5 - KOOLAUPOKO NEIGHBORHOOD BOARD NOS. 29, 30

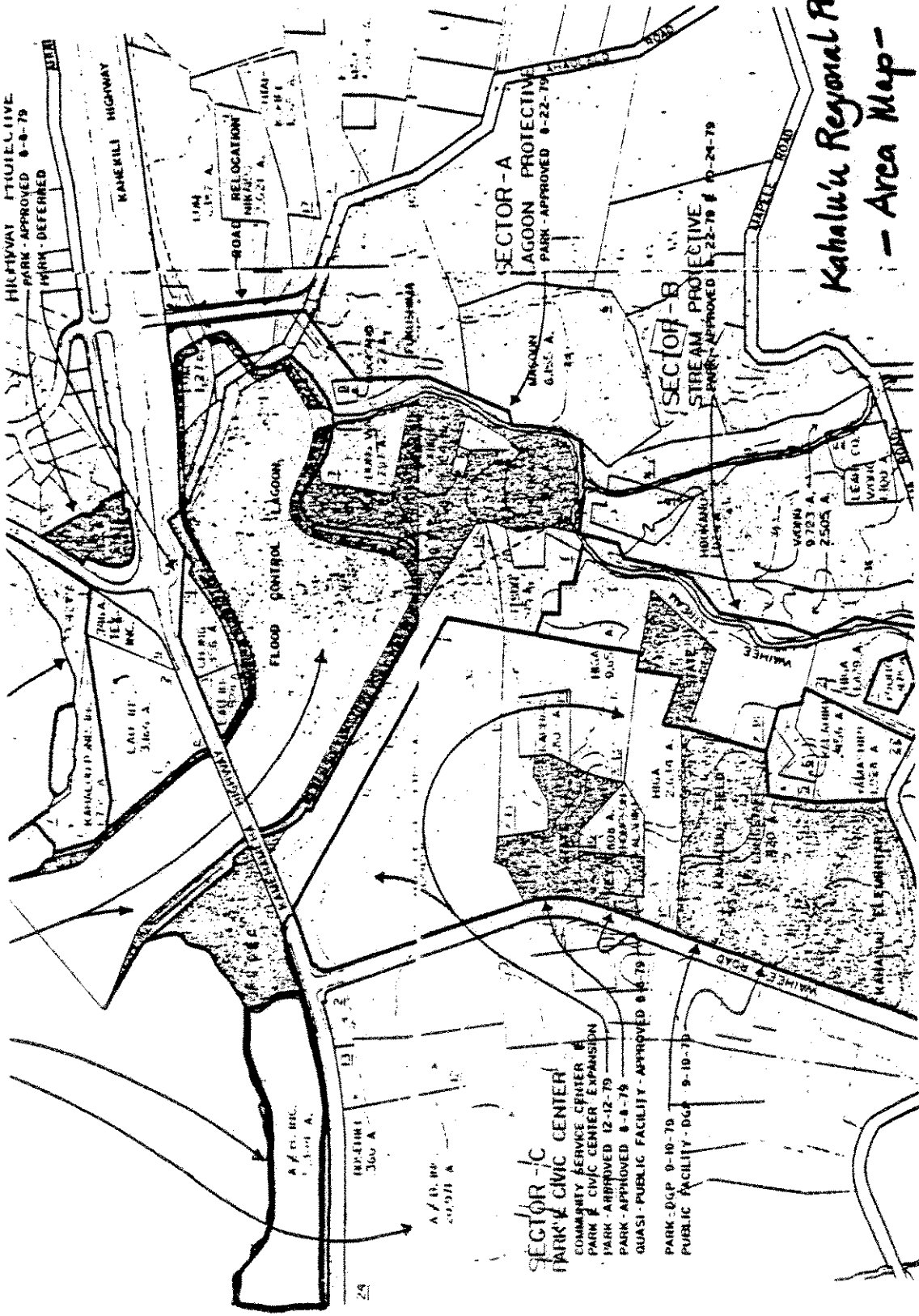
KAHALUU - KANEOHE



DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU

FRANK F. FASI, MAYOR

JUNE 1980



**Kahului Regional Park
- Area Map -**

SECTOR - C
PARK & CIVIC CENTER
 COMMUNITY SERVICE CENTER &
 PARK & CIVIC CENTER EXPANSION
 PARK - APPROVED 12-12-79
 PARK - APPROVED 8-8-79
 QUASI-PUBLIC FACILITY - APPROVED 8-8-79
 PARK - DGP 9-10-79
 PUBLIC FACILITY - DGP 9-10-79

SECTOR - A
LAGOON PROTECTIVE
 PARK - APPROVED 8-22-79

SECTOR - B
STREAM PROTECTIVE
 PARK - APPROVED 8-22-79 & 10-24-79

HIGHWAY PROJECTIVE
 PARK - APPROVED 8-8-79
 PARK - DEFERRED

ROAD RELOCATION
 MIKAO
 5,623 A.

A/D. INC.
 1,300 A.

INDUSTRIE
 360 A.

A/D. INC.
 2,050 A.

SECTOR - C
PARK & CIVIC CENTER

COMMUNITY SERVICE CENTER &
 PARK & CIVIC CENTER EXPANSION

PARK - APPROVED 12-12-79
 PARK - APPROVED 8-8-79
 QUASI-PUBLIC FACILITY - APPROVED 8-8-79

PARK - DGP 9-10-79
 PUBLIC FACILITY - DGP 9-10-79

SECTOR - A
LAGOON PROTECTIVE
 PARK - APPROVED 8-22-79

SECTOR - B
STREAM PROTECTIVE
 PARK - APPROVED 8-22-79 & 10-24-79

HIGHWAY PROJECTIVE
 PARK - APPROVED 8-8-79
 PARK - DEFERRED

ROAD RELOCATION
 MIKAO
 5,623 A.

A/D. INC.
 1,300 A.

INDUSTRIE
 360 A.

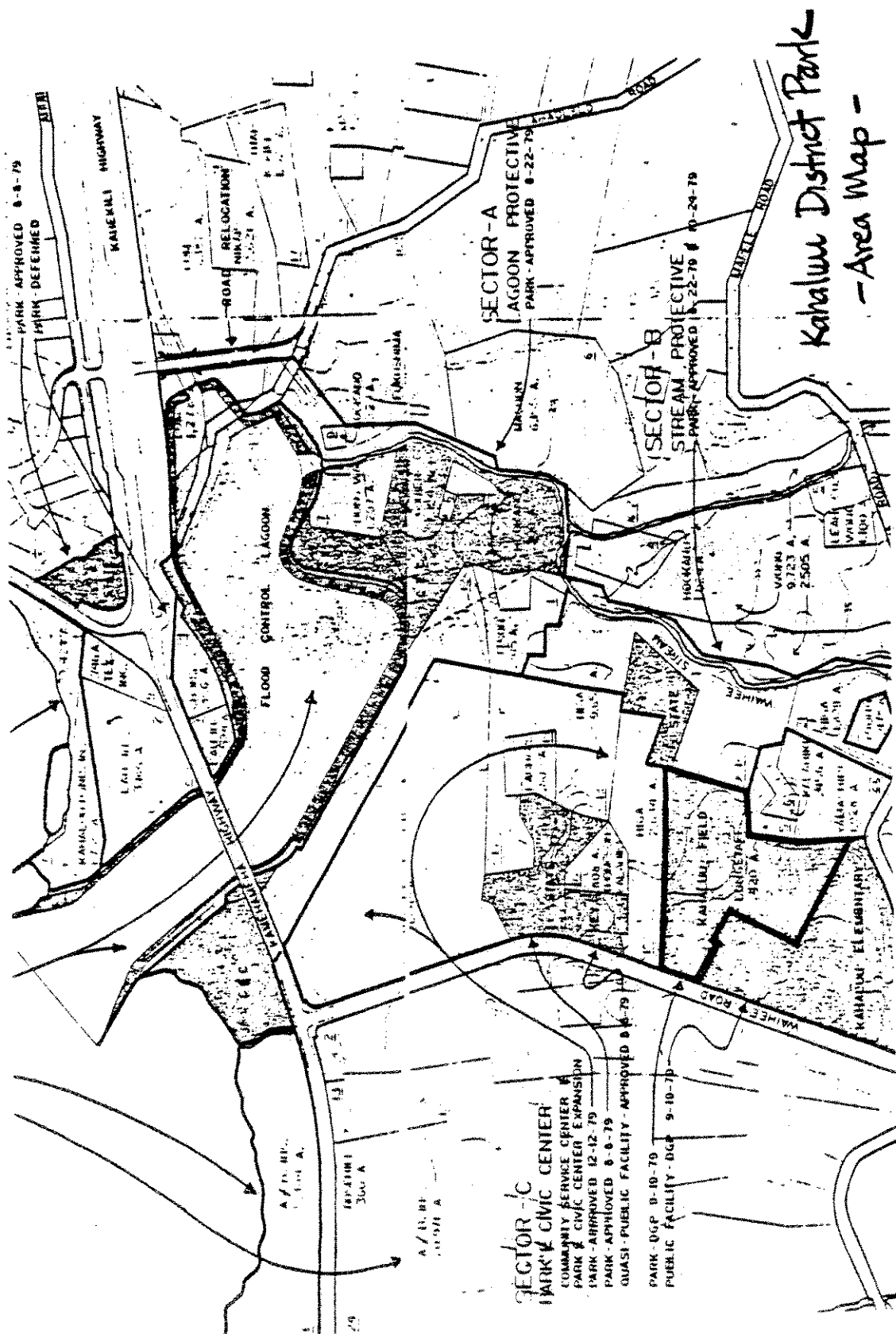
A/D. INC.
 2,050 A.

SECTOR - C
PARK & CIVIC CENTER

COMMUNITY SERVICE CENTER &
 PARK & CIVIC CENTER EXPANSION

PARK - APPROVED 12-12-79
 PARK - APPROVED 8-8-79
 QUASI-PUBLIC FACILITY - APPROVED 8-8-79

PARK - DGP 9-10-79
 PUBLIC FACILITY - DGP 9-10-79



Kahaluu District Park
- Area Map -

SECTOR - C
PARK & CIVIC CENTER
 COMMUNITY SERVICE CENTER &
 PARK & CIVIC CENTER EXPANSION
 PARK - APPROVED 12-12-79
 PARK - APPROVED 8-8-79
 QUASI - PUBLIC FACILITY - APPROVED 8-8-79
 PARK - OGP 8-10-79
 PUBLIC FACILITY - OGP 9-10-79

SECTOR - A
LAGOON PROTECTIVE
 PARK - APPROVED 8-22-79

SECTOR - B
STREAM PROTECTIVE
 PARK - APPROVED 10-24-79

A/D, BE
 1194 A
 1271 A
 1272 A
 1273 A
 1274 A
 1275 A
 1276 A
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 1278 A
 1279 A
 1280 A
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 1298 A
 1299 A
 1300 A

DEPARTMENT OF PARKS AND RECREATION AREA

NAME AND LOCATION: KAHALUI DISTRICT PARK (PROPOSED)		DAO 5	NEIGH'D 29
TYPE: DISTRICT PARK		SENATE 2	COUNCIL 2
CENSUS 109.01	REP 22	AREA DEVELOPED:	
LAND COST:		Acres/ft	Date
Area	Value		
	464		
SERVICES/FACILITIES/IMPROVEMENTS: Description		Cost/Value	Date
OPERATIONS AND MAINTENANCE:			
RECREATION PROGRAMS OR SERVICES ON SITE:			
VISITOR COUNT/USER INFORMATION:			
SITE DESCRIPTION/HISTORY/CONSIDERATIONS/CONDITIONS/PROBLEMS/RESTRICTIONS:			

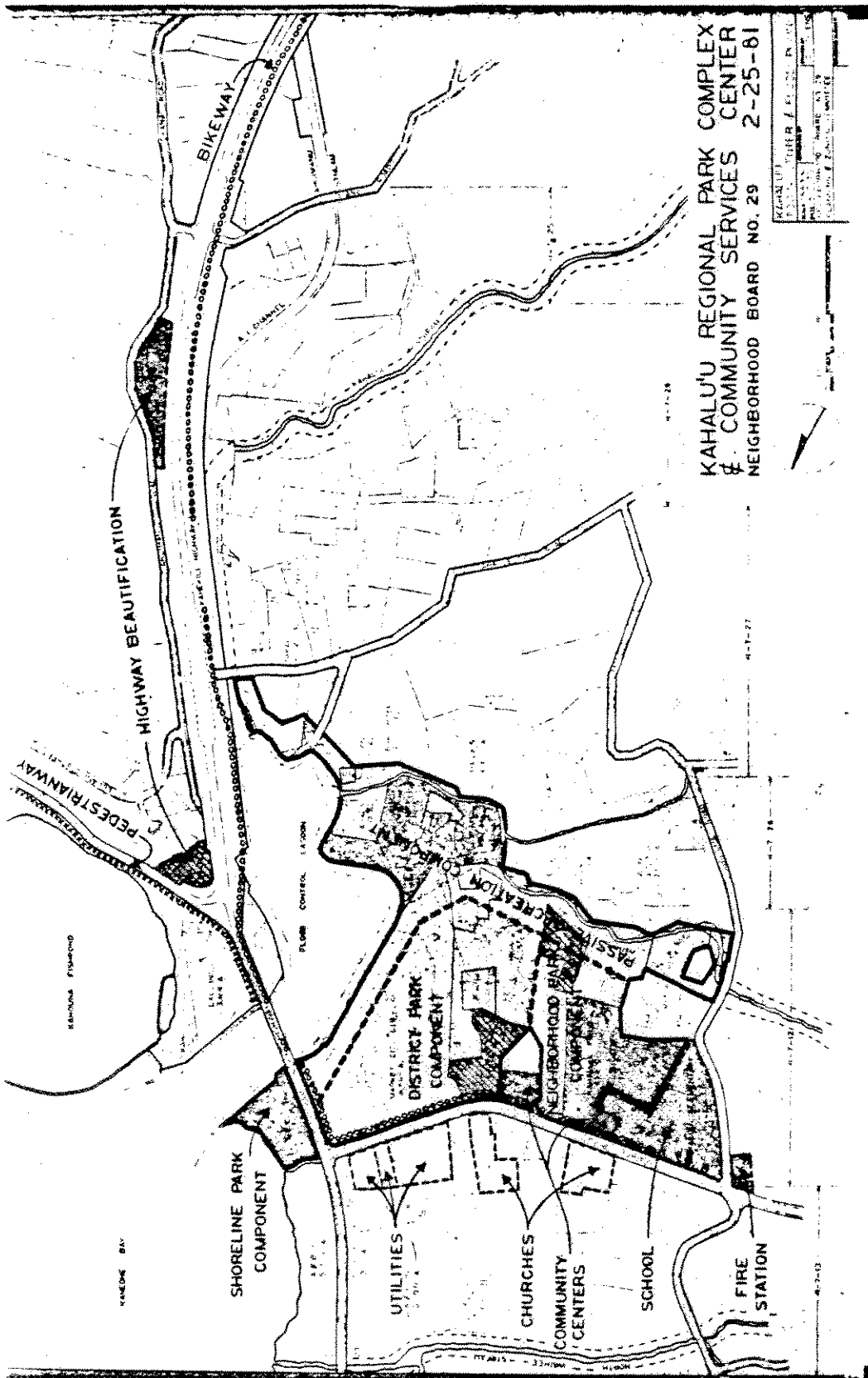
PROJECT PROPOSALS			
PRIORITY #	DESCRIPTION	ESTIMATED COSTS 1-Land PK-Planning & Engineering C-Construction D-Other	COMPLETION DATE
	PROPOSED PART OF KAHALUI REGIONAL PARK AND CIVIC CENTER TO INCORPORATE KAHALUI FIELD		
	20+-acre Land Acquisition	\$1,500,000	1980-1985
	Planning, Engineering and Construction of Site	500,000	1985-1990
	Improvements, Landscaping and Fields		
	Planning, Engineering and Construction of Play Courts and Swimming Pool	1,000,000	1990-2000

DEPARTMENT OF PARKS AND RECREATION AREA

NAME AND LOCATION: KAHALUIA REGIONAL PARK		DAO 5	MECH'D 24
TYPE: REGIONAL PARK		REP 23	COUNCIL 2
CENSUS 10/01		SENATE 3	
LAND COST:		AREA DEVELOPED:	
Acres	Value	Acres/A	Date
36 ±			
TRX Map Key		Date	
SERVICES/FACILITIES/IMPROVEMENTS: Description			
PLANNED EXPANSION TO INCLUDE DISTRICT PARK		Cost/Value	Date
OPERATIONS AND MAINTENANCE:			
RECREATION PROGRAMS OR SERVICES ON SITE:			
VISITOR COUNT/USER INFORMATION:			
SITE DESCRIPTION/HISTORY/CONSIDERATIONS/CONDITIONS/PROBLEMS/RESTRICTIONS:			

PROJECT PROPOSALS

PRIORITY #	DESCRIPTION	ESTIMATED COSTS L-Land PE-Planning, & Eng. Inceering C-Construction D-Other	COMPLETION DATE
	Planning, Engineering and Construction of Site Improvements	\$ 200,000	1985-1990

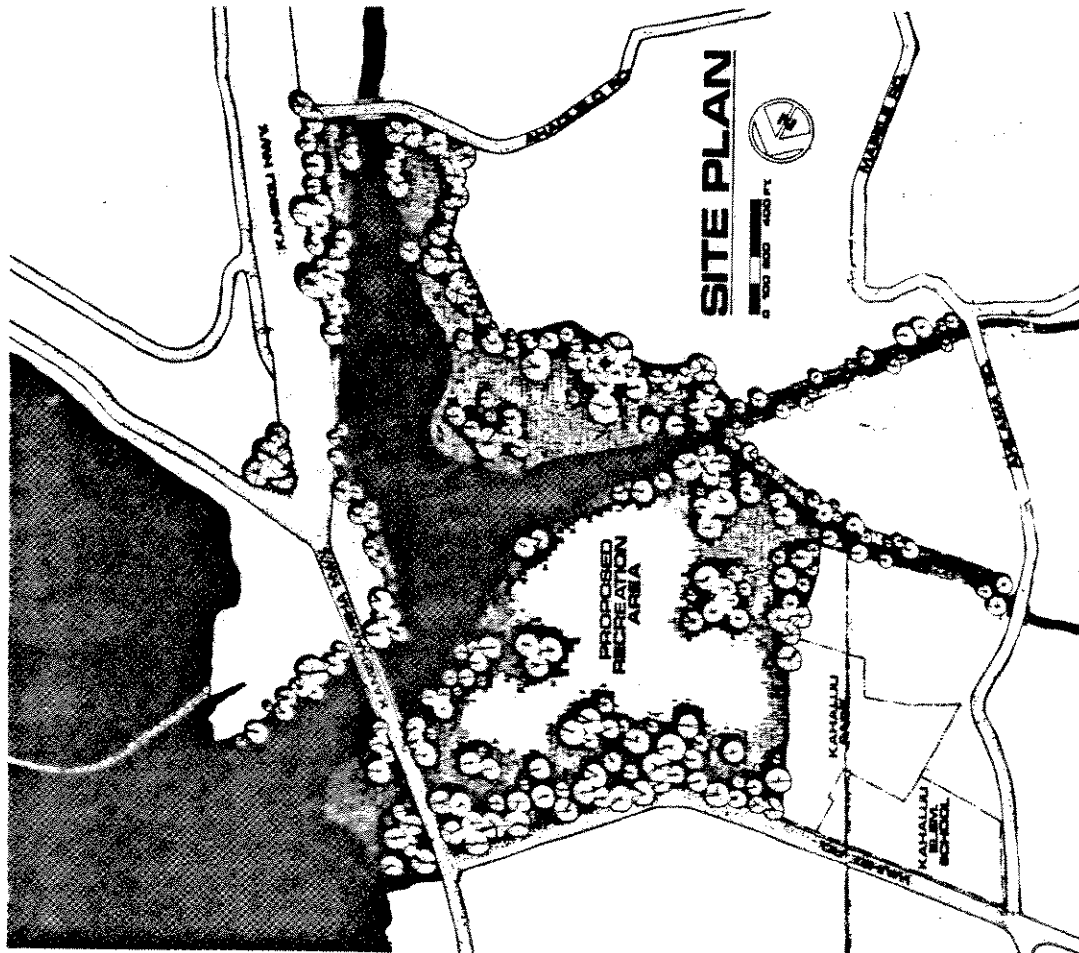


KAHALU'U REGIONAL PARK COMPLEX
 & COMMUNITY SERVICES CENTER
 NEIGHBORHOOD BOARD NO. 29 2-25-81

Project No.	100-100-100-100
Sheet No.	100-100-100-100
Date	100-100-100-100
Scale	100-100-100-100
Author	100-100-100-100
Checker	100-100-100-100
Appr. (City)	100-100-100-100
Appr. (County)	100-100-100-100
Appr. (State)	100-100-100-100



KA LAMA JANUARY 25, 1977 Lagoon Park Captures Imagination



KAPALU DISTRICT PARK can grow from the final water boundaries of the Kahalu'u Flood Control Project. This schematic map shows the widened channel under a new Kanehoeha Highway Bridge with Kanehoeha Bay and Kahouua (Kahalu'u) Fishpond at top center. The two forks of the Wahe'e Stream (which border a triangle of private leaf taro land) merge into the expanded lagoon at lower center. Ahaolele Road bridge has been relocated more to the 'Ahuimanu side to accommodate a larger channel for Kahalu'u and 'Ahuimanu Stream waters.

Watershed Work Plan
Kahalu'u Watershed
1969
(Excerpts)

The structural measures in the plan include 14,010 feet of concrete-lined channels, two debris basins, two energy-dissipating structures, and a 28-acre multi-purpose lagoon encircled by a 22-acre park with recreational facilities. (page 2)

The recreational plan is the result of a cooperative effort by the Honolulu Department of Parks and Recreation and the Soil Conservation Service. The plan will serve to meet the recreational development goals for the area, as set forth in the county's long range comprehensive parks and recreation program. The primary purpose of the recreational measures is to provide opportunities for water-based activities. Full consideration was given to community and county needs and to statewide plans for the orderly development of the recreation resources. (page 27)

The 28-acre lagoon will serve the multiple-purpose of flood prevention and water-based recreation. The lagoon will be excavated to a depth allowing tidal ebb and flow of the Kanehoeha Bay waters. Excavation at the mouth of the channel will be required to maximize water circulation and to minimize channel accretion during storm flows. A narrow channel will be excavated out to deep water to allow boat passage during low tides. The lagoon banks will be sloped at three-to-one and planted with a salt-tolerant grass. This will allow the full and safe use of the shoreline of the lagoon. Fencing for the protection and safety of the public will be installed on the energy dissipating structures and upstream channels in the proximity of the recreational development.

Recreational facilities will be installed in the 22 acres surrounding the lagoon. Designed by the City and County of Honolulu Department of Parks and Recreation, the facilities include trails, roads, parking areas, comfort stations, picnic sites and a boat ramp. Landscaping of the recreational area will be designed to maintain a tropical atmosphere and to blend with the nearby mountains and the adjacent ocean. (page 30)

(Proposed) Kahaluu District Park - 26+ acres

To be developed as part of Kahaluu Flood Control Project and Kahaluu Regional Park. To incorporate Kahaluu Community Park.

20+ acre Land Acquisition	\$1,500,000	1980-1985
Planning, Engineering and Construction of Site Improvements, Landscaping and Fields	500,000	1985-1990
Planning, Engineering and Construction of Play Courts and Swimming Pool	1,000,000	1990-2000

AHUIMANU - Population Estimates: 1978 - 5,965
1985 - 9,704+
2000 - 10,000+

Ahuimanu Neighborhood Park - 4.00 acres
(Expand to Community Park)

Construct Drainage Improvements Including Regrading	\$ 25,000	1980-1985
Construct Children's Play Area with Equipment	15,000	
Additional Land Acquisition Planning and Development including Recreation Building	100,000+	1985-1990
	500,000	

(District Park Facilities to be provided in Kahaluu.)

SEE REGIONAL PARKS: KAHALUU REGIONAL PARK

E-96

THE LONG RANGE PLAN

GENERAL SUMMARY REPORT

Department of Parks and Recreation
City and County of Honolulu

JUNE 1980

KAHALUU - PROJECT PRIORITY LIST
COMMUNITY-BASED PARKS AND FACILITIES

1980-1985

1. AHUIMANU NEIGHBORHOOD PARK
 Drainage Improvement and Regrading
 Children's Play Area
 \$ 25,000
 15,000
2. Land Acquisition
 \$ 100,000+
3. (PROPOSED) KAHALUU DISTRICT PARK
 20+-Land Acquisition
 \$1,500,000

1985-1990

1. AHUIMANU COMMUNITY PARK
 Planning and Development
 \$ 500,000
2. KAHALUU DISTRICT PARK
 Planning and Development
 \$ 500,000

3. VARIOUS IMPROVEMENTS AND RENOVATIONS

1990-2000

1. KAHALUU DISTRICT PARK
 Planning and Development of
 Play Courts and Swimming Pool
 \$1,000,000
2. VARIOUS IMPROVEMENTS AND RENOVATIONS

Kualoa Regional Park - 153.4 acres

Beach Erosion Control Improve-
 ments \$ 120,000 1980-1985
 Planning, Engineering and Con-
 struction for Site Improve-
 ments, Bathhouse, Parking
 Construction of Additional
 Site Improvements, Bathhouse
 Land Acquisition of Additional
 69 acres 2,000,000 1985-1990
 Additional Site Improvements
 Additional Site Improvements
 1,000,000 1990-2000

Hoomaluhia Park - 400+ acres

Development Repayment to Federal
 Government \$1,000,000+ 1980-1985
 Additional Site Improvements
 and Perimeter Fencing 200,000
 Development Repayment to Federal
 Government 1,500,000+ 1985-1990
 Additional Site Improvements
 Development Repayment to Federal
 Government 200,000
 Development Repayment to Federal
 Government 3,000,000 1990-2000
 Additional Site Improvements,
 Picnic Area, Camping Area, Trails
 Additional Replacement and Reno-
 vations 600,000
 100,000

Kahaluu Regional Park - 26+ acres
(includes Kahaluu District Park)

Planning, Engineering and Con-
 struction of Site Improvements
 \$ 200,000 1985-1990

STATE

Sand Island State Park - 140 acres

An additional 36 acres are recommended to be added from the
 Land Bank to provide for active recreation field needs for
 the Primary Urban Center

Development \$1,500,000 1980-1985
 500,000 1985-1990

Mahala State Freshwater Park

Development \$ 305,000 1980-1985
 Development 550,000 1985-1990

HAWAII CZM PROGRAM
ASSESSMENT FORMAT

KAHALUU NEIGHBORHOOD BOARD NO. 29
516 KAHALUU COMMUNITY CENTER
87 220 WAHINE ROAD
KAHALUU, HAWAII 96731
HESIA BEA KAHALUU WAHINE NEIGHBORHOOD BOARD NO. 29



DISCUSSION:

This project will provide watershed protection, flood prevention and recreational opportunities in the Kahaluu Watershed. Construction of the multi-purpose lagoon where the Ahuimanu, Kahaluu and Waiohee Streams come together before discharging into Kaneohe Bay will provide a water oriented recreational facility. There are plans to construct a recreational park along the multi-purpose lagoon and outlet channel. Several properties have already been acquired for construction of the park.

Construction of the lagoon will create an improved estuarine habitat which will permit fishing and crabbing.

The banks of the lagoon will be vegetated and will have a 3:1 side slope. It will outlet into Kaneohe Bay through a rock lined channel, 280 feet wide. The lagoon will be excavated to a depth that will permit tidal ebb and flow of the Kaneohe Bay water.

The multi-purpose park and lagoon development will help to meet the increasing demands for recreational facilities in the Kahaluu area.

The project will provide flood protection and an area conducive for the development of water oriented recreational activities.

Received from
Joan Yam January 27, 1981
DPED

Costal Zone Management Program

KAHALU'U WATERSHED
FLOOD CONTROL PROJECT
A-1 CHANNEL

"Let us not ever have
an unhappy minority"

March 23, 1981

Honorable Eileen Anderson, Mayor
City and County of Honolulu
City Hall
Honolulu, HI 96813

Subject: Water Resources Position Statement

Dear Mayor Anderson:

For many years the Kahalu'u community has become increasingly concerned over the approaching crisis situation in water resource management. To address this concern, Kahalu'u Neighborhood Board No. 29 has prepared and adopted the attached Water Resource Position Statement.

The first recommendation is made to conform with the intent of the Constitutional Convention to eliminate conflicting policies and directions in water resource management:

"That the State of Hawaii and the City and County of Honolulu, in cooperation with each other, establish an independent Oahu Water Authority which shall have jurisdiction over the management of all perched, dike impounded, and basal ground waters and all streams, sheet flow and ponded surface waters on the island of Oahu."

The other and equally important recommendations are made to implement an action program to correct immediate and prevent future problems brought about by water development and diversion.

We are forwarding this Position Statement with the hope that the background information and specific recommendations will enable you to assist us in solving our very real water resource problems.

Very truly yours,

Elwin Spray, Chairman
Neighborhood Board No. 29

cc: George Arycshi, Governor, State of Hawaii
Richard Wong, President, Hawaii State Senate
Henry Peters, Speaker, Hawaii State House of Representatives
Rudy Pacarro, Chairman, Honolulu City Council



"Let us not ever have
an unhappy minority"

WATER RESOURCES POSITION STATEMENT
March 11, 1981

The Kahaluu Neighborhood Board No. 29, which represents 8 Ahupua'a from Kualoa to He'eia, is seriously concerned about the availability to water for agriculture, aquaculture and stream and bay resources in this rural community and other communities along the entire windward coast.

For over 10 years the community has worked together to plan its future. The story of this effort is reported in A Planned Community: Steps on the Journey - Summary of Kualoa to He'eia Community Initiatives published by the Board in July, 1980. In September, 1979 the Board adopted the following Community Goals:

"The windward area from Kualoa to He'eia is distinctively rural in character, possesses great scenic beauty and serves as a critical buffer zone at the very edge of Honolulu's urbanization. The goals of the Development Plan shall insure that Kahalu'u:

- a) remains a community devoted to diversified agriculture and related activities.
- b) preserves its ocean (Kane'one Bay) and mountain (Ko'olau Range) beauty and its natural water and land resources.
- c) maintains its essentially rural life-style.

All efforts to preserve and develop the community's economic, natural and human resources shall be directed toward the accomplishment of these goals."

During the past 2 years the community and the Board have concentrated their attention on the preparation of proposed City and County Development Plans which will reinforce these goals.

Because of the importance of diversified agriculture and stream and bay resources to the future of this and other windward communities, the Board feels compelled to adopt this Water Policy and Resource Position Statement.

Importance of Water for Non-Urban Use

An adequate quantity and quality of fresh water is essential for diversified agriculture, taro farming, stream fishing and aquaculture. The proper quality of

of brackish water is required for fishponds, limu harvesting, bay fish breeding grounds and mariculture. Adequate quantity, quality and flow of water is essential for maintenance of the ecology of streams, wetlands, the shoreline and Kane'one Bay.

Importance of Non-Urban Lands

Agricultural lands are of vital importance to O'ahu. They provide a satisfying livelihood and lifestyle for many and as a source of food production they are now important, but will become essential as the need for island food and energy self-sufficiency increases. Agricultural lands together with conservation and other non-urban lands provide the considerable open space required for a high density island population, the vast areas required for watershed protection and the mountain, stream and shoreline areas required for outdoor recreation. Most of this non-urban land could not survive in a useful condition without an ample quantity of quality fresh water.

Water Development and Diversions

There is a history of developing water on the windward side and diverting it to other parts of the island. For many years the private Waiahole ditch and tunnel system has collected and diverted water to central O'ahu sugar lands currently at the rate of 25 mgd. More recently the Board of Water Supply has developed windward water which it increasingly diverts to urban Honolulu. By the year 2000 the Board of Water Supply estimates that it will produce windward water at the rate of 43 mgd of which it intends to transport 21 mgd to urban Honolulu.

Even now, the Board of Water Supply water development in the He'eia, Kahalu'u, and Waiehe watersheds has had serious adverse effects on stream flow. Planned water development would extend these adverse effects up and down the windward coast. Furthermore, water development in a particular watershed may reduce availability in other watersheds. For example, the Haiku Tunnel in He'eia has contributed dramatically to the reduction of Kahalu'u Stream flow. (see Exhibit I)

Water Rights

Board of Water Supply water development has already required Waiehe farmers to go to court to protect their traditional and constitutional reparatain and appurtenant rights to water. Additional development and diversion may well send many others to court.

Previous Board Positions and Statements

Since its inception the Board has consistently spoken out for a sensible water policy. A few examples follow:

Position on Water (9-25-77)--A comprehensive statement of concerns and proposals excerpt: "... that no growth or development be permitted on O'ahu until it is proven beyond a reasonable doubt that the potable freshwater resource of this island be not exceeded by a margin wide enough to assure fulfillment of the policy of the State of Hawaii to preserve and promote agriculture towards a large measure of self-sufficiency than we now have..."

Position Paper on the Waiehe Watershed (5-10-78) - a thorough review of problems and a proposal for interim development controls or special design

district and comprehensive watershed development plan.

Monitoring Stream Flows (11-3-80) to DLNR-discusses concern over reduction of stream flows essential to agriculture and requests flow monitoring-excerpts: "...windward water resource development consists principally of tunnels for impounded high level dike water and deep wells for underlying basal water... both types of development reduce stream flow by diversion of draw down... it is important that data be collected prior to construction of any additional test or production facilities... all streams on the windward side must be monitored because the hydrologic relationships between watersheds, dike complexes and basal waters have not been determined..."

Comments on Kahalu'u Well EIS (11-7-80) to BMS - discusses inadequacies, inaccuracies, and misrepresentations in the EIS - discusses probable stream flow reduction and subsequent effects.

Environmental Impact Assessments of Negative Declarations for a number of proposed test wells (2-14-81) to BMS and DLNR - excerpts: "...concerned over the apparent casualness with which exploratory wells are transposed into production facilities... an exploratory well with a bore size much less than that of a production well would be more in keeping with a negative declaration... Board recommends here reduction for exploratory wells or else an EIS."

Hui Malama Aina 'O Ko'olau - Water Policy Statement (8-22-80) - endorsement by the Board of Hui Malama's six policy statements.

Water Policy Statements

The Kahalu'u Neighborhood Board No. 29 advises and recommends that:

1. The State of Hawai'i and City and County of Honolulu, in cooperation with each other, establish an independent O'AHU WATER AUTHORITY which shall have jurisdiction over the management of all perched, dike impounded & basal ground waters and all stream, sheet flow & ponded surface waters on the island of O'ahu
2. the Department of Land and Natural Resources immediately establish interim stream flow standards for all windward streams.
3. development of any additional windward water resources be limited by interim or permanent stream flow standards and be reserved first for windward agricultural use and next for windward suburban use.
4. a moratorium be established on any additional diversion of windward water outside Ko'olopoko & Ko'olauloa until establishment of permanent stream flow standards that will assure fulfillment of the policy of the State of Hawai'i to achieve ever increasing agricultural self-sufficiency.
5. no water be taken from present agricultural users and that the appurtenant and riparian rights of water users be protected and defended to the fullest extent.

6. the Department of Land and Natural Resources immediately commence monitoring in-stream flows of all windward streams-gauging stations to be installed at appropriate strategic locations along each stream.

7. the Department of Land and Natural Resources initiate a comprehensive study of all windward water resources encompassing the sources and amounts of impounded high level dike water, underlying basal water, ground water, in-stream water, surface run-off & ground recharge and the hydrologic relationships of the various types of water resources and their further inter-relationships with watersheds, shoreline and Kane'ohu Bay.

8. water for urban growth be developed from conservation measures, re-use and desalinization.

Exhibit I - Stream Flow Data, Kahalu'u Stream
Exhibit II - Typical Hydrological Cross Section of Windward Ko'olau Range
Exhibit III - Description of Ahupua'a in Neighborhood Board No. 29 District
Exhibit IV - Water Resources Map for Neighborhood Board No. 29 District.

Water Resources Position Statement
approved unanimously (For-9, Opposed-0, Absent-5)
Kahalu'u Neighborhood Board No. 29
at Regular Meeting of March 11, 1981

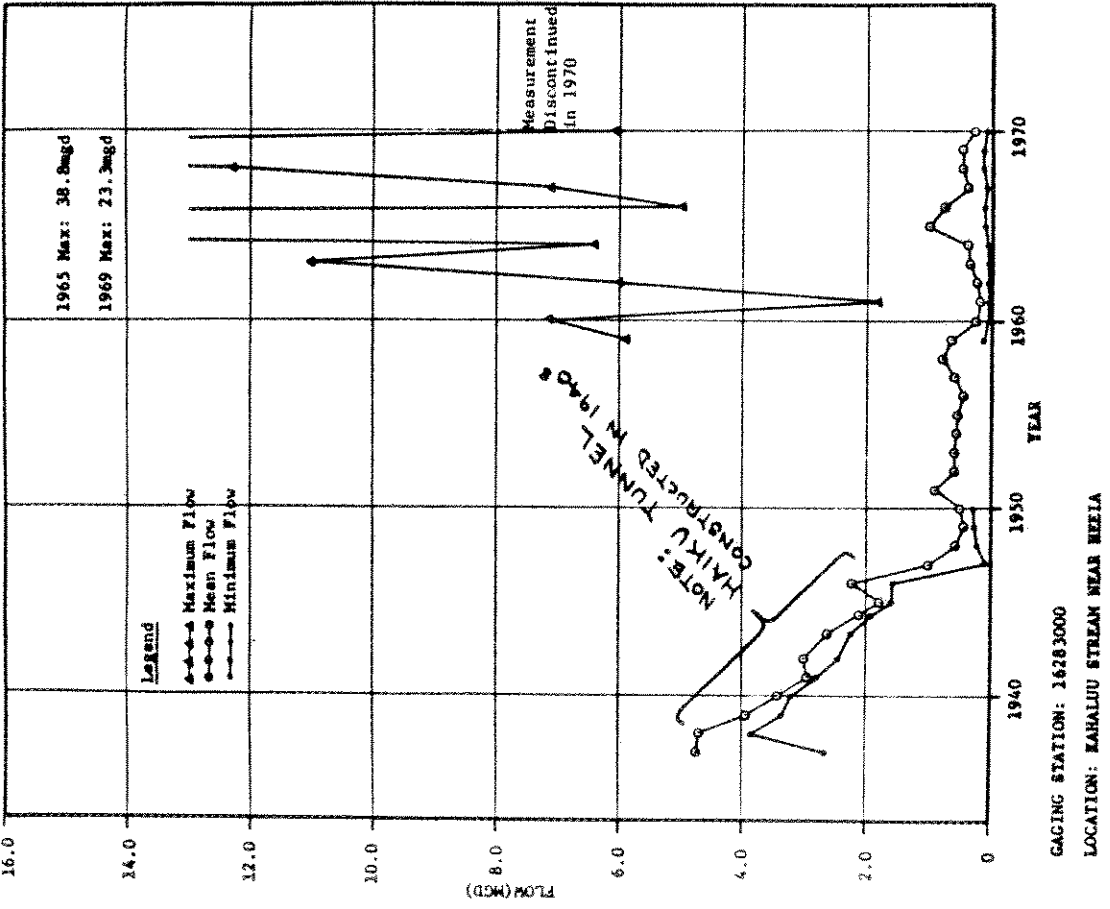


FIGURE 8
 STREAMFLOW DATA
 KAHALUU NEIGHBORHOOD BOARD # 29
 WATER RESOURCES POSITION STATEMENT
 EXHIBIT I

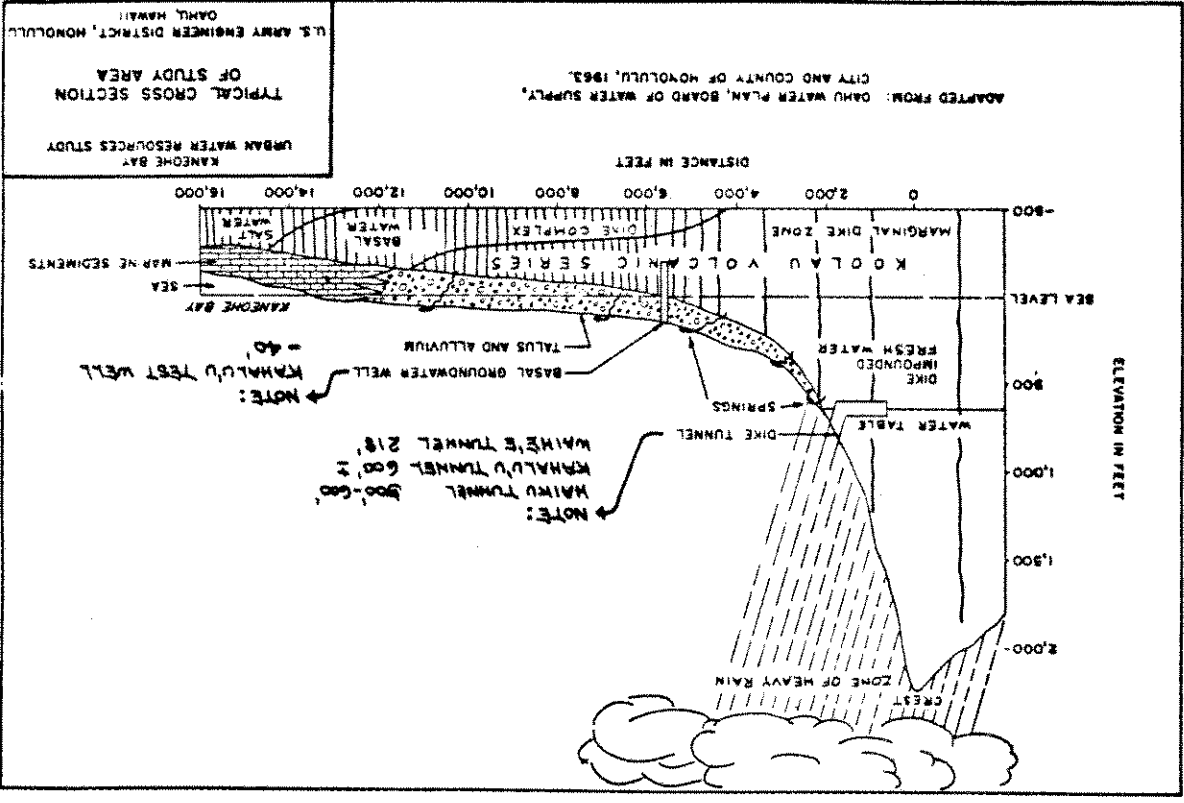


FIGURE 8-2

KAHALUU NEIGHBORHOOD BOARD NO. 29

60 KAHALUU COMMUNITY CENTER
47 232 WAIHEE ROAD
KANEHOE HAWAII 96744

MEMBERS: KAHALUU, WAIHEE, WAIHOLE, WAIKANE, HAKIPU, AND RURAL



"Let us not ever have
an unhappy minority"

**Water Resource Position Statement
Exhibit III-Abupua'a Descriptions**

Abupua'a of Kualoa

Agricultural and Recreational--no streams

Abupua'a of Hakipu'u

Agricultural and Rural

· Hakipu'u Stream--flows through agricultural lands and historic taro lo'i to Kane'ohu Bay.

Board of Water Supply water development: proposed deep wells--estimated production, .50 mgd. basal water.

Note: stream flow essential to existing aquaculture development at entrance to bay.

Abupua'a of Waikane

Agricultural and Rural

· Waikane Stream--flows through agricultural lands to wetland and Kane'ohu Bay.

Board of Water Supply water development: proposed deep wells--estimated production, .50 mgd basal water (see note 1)

Private water development: (see note 2)

· Waikane Stream'--flows through agricultural lands--major tributary to Waikane Stream.

Board of Water Supply water development: proposed deep wells--estimated production .50 mgd basal water (see note 1)

Private water development: (see note 2)

Abupua'a of Waihole

Agricultural and Rural

· Waihole Stream--flows through agricultural lands--tributary to Waianae Stream

Board of Water Supply water development: none.

Private water development: (see note 2).

Kahaluu Neighborhood Board No. 29
Water Resource Position Statement
Exhibit III
Page 2

· Waianae Stream--flows through agricultural lands--major tributary to Waihole Stream.

Board of Water Supply water development: proposed deep wells--estimated production, .50 mgd basal water (see note 1).

Private water development (see note 2).

· Waihole Stream--flows through agricultural lands to wetland and Kane'ohu Bay.

Board of Water Supply water development: proposed deep wells, estimated production, .50 mgd basal water (see note 1).

Private water development: (see note 2).

Abupua'a of Ka'alaea

Mostly Agricultural and Rural--some suburban

· Ka'alaea Stream--flows through agricultural lands to wetland and Kane'ohu Bay.

Board of Water Supply water development: none.

Abupua'a of Waihe'e

Mostly Agricultural and Rural--some suburban--parks, school, public and community facilities.

· Waihe'e Stream (North Waihe'e) Stream--minor stream in agricultural area--flows to wetland and Kane'ohu Bay.

Board of Water Supply water development: none.

· Waihe'e Stream--flows through agricultural land to flood control lagoon and Kane'ohu Bay.

Board of Water Supply water development: existing high level tunnel--1979 production 5.54 mgd dike water--existing inclined wells--1979 production .77 mgd dike water--existing high level wells--1979 production not published (see note).

Note: Water development has so reduced stream flow that a court order will not allow diversions to reduce stream flow below 2.70 mgd--this, however, is not an adequate flow to sustain extensive taro production downstream.

· Hanama Stream--Waihe'e tributary above water development.

· Kalia Stream--Waihe'e tributary below water development.

Ahupua'a of Kahalu'u

Partly Suburbanized-single family houses, townhouses, strip commercial area.

- Kalohaka Stream-minor stream in agricultural area-flows to Waihe'e Stream near flood control lagoon.

Board of Water Supply water development: none.

- Kahalu'u Stream-agriculture on Waihe'e side-houses crowding He'eia side may require channelizing lower portion-flows to channel and flood control lagoon.

Board of Water Supply water development: existing high level tunnel-1979 production, 1.89 mgd dike water-existing deep test well-estimated production-.50 mgd basal water (but may be nearer 1.5 mgd).

Note: tunnel diversion has contributed toward reduced stream flow. (see Exhibit I).

Ahupua'a of He'eia ('Ahuimanu and He'eia Kaa portions)

Partly suburbanized-single family houses, townhouses, shopping center and cemetery.

- 'Ahuimanu Stream-planned residential will protect upper part of stream (see note)-housing development has caused channelizing of lower part-flows to channel and flood control and Kane'one Bay.

Board of Water Supply water development: none.

Note: Planned residential on upper stream may develop private water production-developer to donate historic Kahalu'u Taro Lo'i site.

- Maioia Stream-upper part protected by cemetery-lower part channelized to handle increased pavement and roof run-off-flows to channel and flood control lagoon and Kane'one Bay.

Board of Water Supply water development: none.

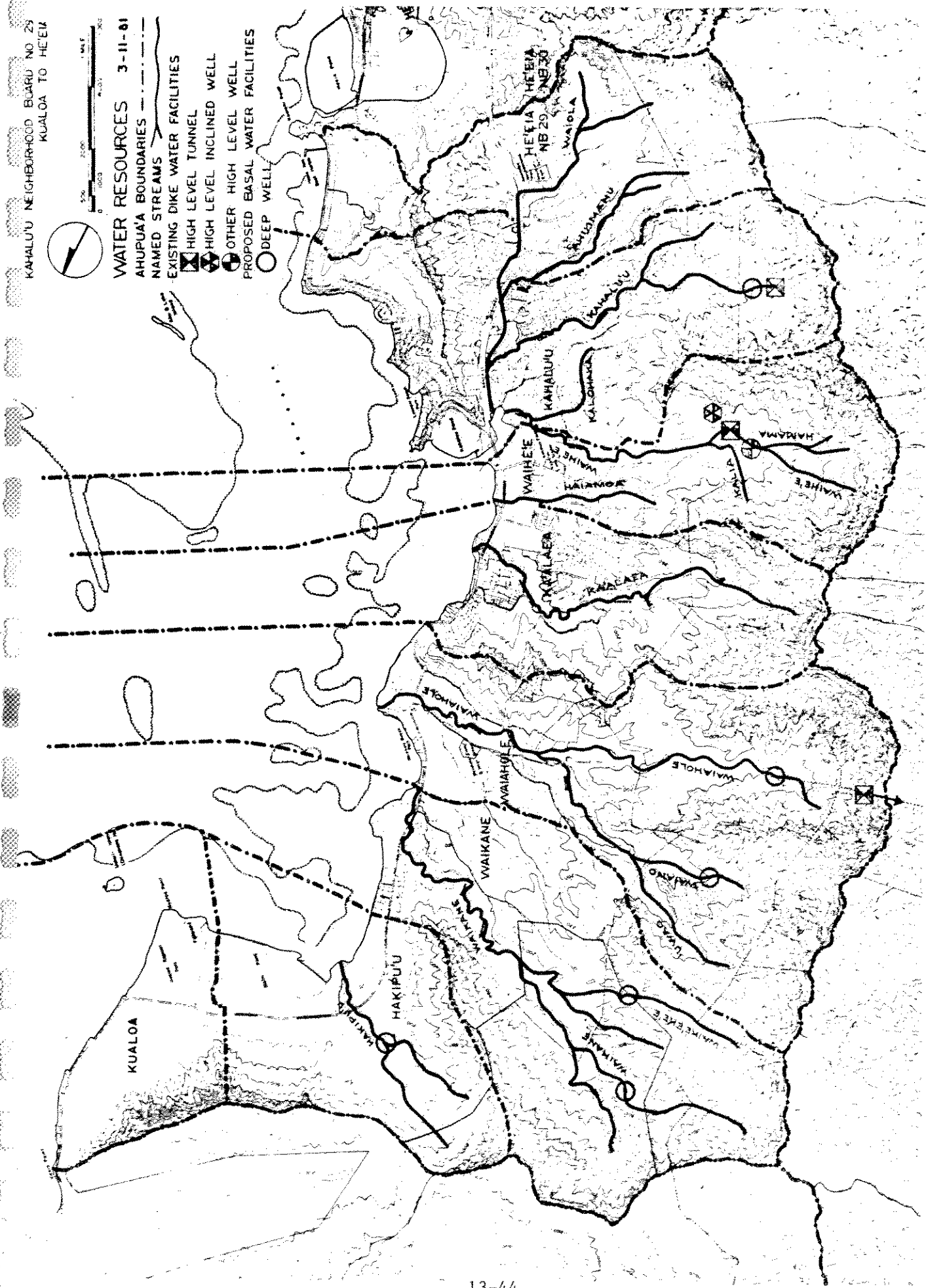
Note 1 Total estimated Board of Water Supply production for Waiahole and Waikane wells is 2.00 mgd-so, .5 mgd is allocated to each of four streams: Waikane, Waikae'ke'e, Maiano and Waiahole.

Note 2 Private development includes extensive Waiahole ditch and tunnel system which collects 25 mgd of dike water from Kahana, Waikane and Waiahole and diverts it to central O'ahu Sugar lands.



WATER RESOURCES 3-11-01

- AHUPUA'A BOUNDARIES
- NAMED STREAMS
- EXISTING DIKE WATER FACILITIES
- ⊗ HIGH LEVEL TUNNEL
- ⊗ HIGH LEVEL INCLINED WELL
- ⊗ OTHER HIGH LEVEL WELL
- ⊗ PROPOSED BASAL WATER FACILITIES
- DEEP WELL



ENVIRONMENTAL
COMMUNICATIONS
INC.

June 24, 1981

Mr. Edwin B. Stevens, Chairman
Kahalu'u Neighborhood Board No. 29
C/O Kahalu'u Community Center
47-232 Wahee Road
Kaneohe, Hawaii 96744

Dear Mr. Stevens,

SUBJECT: EIS Preparation Notice for the Proposed Kahalu'u
Commercial and Residential Development, Tax Map
Key: 47-12-12 and 27

We have received and reviewed your letter of June 17, 1981, commenting on the above mentioned EIS Preparation Notice. We find that you have very thoroughly addressed the major concerns of the proposed project. The documents and references enclosed with your letter support these issues and provide an excellent source of information on the position of the Kahalu'u Neighborhood Board.

Below, we have taken the opportunity to address each of your concerns. These discussions will also be included in the Draft EIS document.

General Community Impact

Presently the project site is zoned B-2, R-3, and R-6, while the General Plan and the proposed DP designates the site for rural uses. While the EIS will discuss this discrepancy, it should be pointed out that the existing zoning of the site prevails over the General Plan and the proposed DP for the area. The recent State Supreme Court decision (the Nuuanu Neighborhood Board and various individuals versus the Department of Land Utilization, City and County of Honolulu, Tyrone Kusso, Director of Land Utilization, and Dowsett Highlands Land Trust) identifies the priority of zoning over the broader plans such as the General Plan. Subsequently, the Court has interpreted the land use and zoning ordinances and laws to mean that land use plans provide guidance for land use decisions, but zoning prevails when actual land use is implemented. While this discrepancy is unfortunate, the developer has indicated that the project was pursued prior to the proposed DP, and that because of various expenditures and planning efforts, he has certain "vested rights" in the subject property.

The cumulative impact of various projects in the Kahalu'u area will result in population increase, higher densities, and a loss of agricultural lands. The area has witnessed significant growth in the last ten years with the development of major townhouse projects and residential subdivisions. It may be unrealistic to envision the area as an "agricultural" community when such developments indicate a trend

Kahalu'u Neighborhood Board No. 29
Kahalu'u Commercial and Residential Development
June 24, 1981
Page 2

toward urbanization. While this scenario may be undesirable, a review of the impacts of agricultural activities indicates that environmental impacts on the environment would likely be as significant as urbanization. (Reference: Hawaiian Environmental Simulation Laboratory, HESL, studies.)

The EIS document will review Chapter 205-A, HRS, in regards to how the proposed development relates to the proposed objectives and policies for the coastal management area. However, because the specific details (example: sewage treatment and disposal) have not been finalized, the review of Chapter 205-A will be preliminary and may not reflect the final engineering plans.

Relating to the implication that this project will generate further urbanization, we find that this statement is incorrect. Based on a marketing analysis prepared by John Child and Company, Inc., there is a demand for retail spaces. In their analysis, they indicate that by 1983 (the scheduled completion of the project) there will be sufficient retail expenditures in the Kahalu'u area to support an additional 180,000 square feet of retail floor area.

Impact on Community Recreational Requirements

Public access to the lagoon will be provided by a buffer strip between the development and the lagoon. Subsequently public access will not be restricted. Comments from the Department of Parks and Recreation (dated June 8, 1981) indicate their willingness to discuss and coordinate with the developer the details relating to this buffer area. The recreational uses of the lagoon should not be adversely affected by the proposed development.

Relating to your concern of flooding of the subject site, we note that the drainage report prepared by the engineering consultant has been accepted for the project site. The report satisfies the Comprehensive Zoning Code requirements for Zone A designated area.

Impact on Community Services and Facilities Requirements

As stated above, the marketing study by John Child and Company, Inc., has indicated that there will be "sufficient retail expenditures in the Kahalu'u Trade area to support an additional 180,000 square feet of retail floor area...". Their letter also states:

"There are no other significant additions of commercial retail space within the trade area planned for the foreseeable future. Consequently, the Kahalu'u Shopping Center will represent the only source of additional retail space to service the residents of the Kahalu'u to Kuloa communities within the near term."

Based upon the competitive position of the proposed development within the trade area, the Kahaluu Shopping Center is estimated to command significant support at the scheduled commencement of operation.

Impact on Community Housing Requirements

A total of 21 single-family lots will not result in a significant number of residential units. Data from this area indicates that 21 units would represent a small fraction of the total housing constructed within the Kahaluu area in a year's period. The lots will be sold at the competitive market price and it is conceivable that potential home purchasers in a moderate income bracket could buy the lot and at a later date, build a home on the site. Thus, it would be unfair to imply that the housing would be unaffordable by the present community residents.

Impact on Agricultural Lands

The project site is not suitable for agricultural crop production.

The soils are identified in the low productivity class and with water demand, irrigation water runoff, and present soil conditions, the use of this land for agriculture would likely create more adverse impact on the environment than the proposed development.

The proposed development will not likely act as a catalyst for further urban growth in the area. The prevailing zoning would likely be the direct contributor towards urbanization.

Impact on Water Resources

The total water demand for both the commercial center and the subdivision (when the homes are built and occupied) is estimated to be 32,810 gallons per day. This is a very small fraction of the total water usage in this district. Furthermore, the Board of Water Supply has provided the developer with no water commitments. Only when the developer is applying for the building permit will the Board determine if potable water is adequate and available to the project. Subsequently, the Board is working in the best interest of the community in determining the availability and adequacy of the potable water.

Flood Hazard Considerations

A drainage study has been prepared and portions of the study will be included in the EIS.

Sewage Disposal Considerations

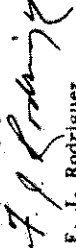
The engineering consultant is aware of the difficulties involved in the disposing of the sewage effluent. At this time, several methods of sewage treatment and disposal are being considered. These methods of treatment and disposal will be described in the EIS.

Traffic Considerations

The impact of traffic was one of the principal concerns during the preparation of the EIS. As a result of that concern, a traffic consultant was retained to prepare a traffic impact statement. The traffic statement will be included in the EIS so that reviewers can review the study. The conclusion of the traffic consultant was that the adjacent roadways (Waihee Road and Kamehameha Highway) have the additional capacity available to accommodate the traffic generated by the proposed development. The widening of Kamehameha Highway should provide additional capacity so that even the future estimated traffic (from various planned/proposed projects along the Highway) can be accommodated.

We appreciate your comments and concerns in these matters. The Draft EIS for this project should be available for review in the next few weeks. At that time, a copy of the Draft EIS will be provided to the Neighborhood Board for their review and comments.

Very truly yours,



F. J. Rodriguez

cc: Senator Hiram L. Fong, Sr.
Wong, Sueda, and Associates, Inc.
Department of Land Utilization
Austin, Tsutsumi, and Associates, Inc.



DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT

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

GEORGE R. ARYOSHI

HIDETO KONO

FRANK SKRIVANEK

F. J. RODRIGUEZ
PRESIDENT

ENVIRONMENTAL COMMUNICATIONS INC.

June 29, 1981

June 18, 1981

Ref. No. 3264

RECEIVED
JUN 23 1981

Mr. Ronald K. Awa
Wong, Sueda & Associates, Inc.
905 Makahiki Way - Mauka Suite
Honolulu, Hawaii 96826

Dear Mr. Awa:

SUBJECT: Kahalaau Development
TRK: 4-7-12:12, 27
EIS Preparation Notice

Thank you for giving us the opportunity to review the subject EIS Preparation Notice.

As you are aware, the Hawaii Coastal Zone Management (CZM) Program provides legislative objectives and policies relating to land and water uses within the coastal zone. While the subject Preparation Notice notes CZM concerns, we trust that they will be more fully assessed in the completed environmental impact statement.

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

Sincerely,
Hideto Kono
for Hideto Kono

cc: Mr. Michael M. McElroy
Department of Land Utilization

Mr. Harry Akagi
Office of Environmental Quality Control

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

Dear Mr. Kono,

SUBJECT: EIS Preparation Notice for the Proposed Kahalaau Commercial and Residential Development

Thank you for your letter of June 18, 1981 on the above mentioned EIS Preparation Notice. Your response was received on June 26, 1981, four days after the deadline date of June 22, 1981. Although it was received late, it is being included in the EIS document.

We have reviewed your comment on the need to review the objectives of the Hawaii Coastal Zone Management (CZM) Program. A preliminary evaluation of the proposed project with the objectives and policies of the CZM are provided in the EIS as Appendix E. We hope this evaluation (enclosed) provides the information requested.

Very truly yours,
F. J. Rodriguez
F. J. Rodriguez

Enclosure

cc: Senator Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda and Associates, Inc.

JUN 26 1981

14. ORGANIZATIONS AND PERSONS REVIEWING THE DRAFT EIS;
REPRODUCTION OF COMMENTS AND RESPONSES MADE DURING
THE DRAFT EIS REVIEW PERIOD

The Draft EIS review period was between July 8, 1981 and August 7, 1981. The distribution list for the Draft EIS is provided in Table 5.

A total of twenty seven (27) agencies responded to the Draft EIS. Nine (9) of these reviewing agencies had no comment to provide; subsequently, no disposition to their letters were necessary. Eighteen (18) letters with comments were received; responses to these letters were provided.

Comments and responses to the comments are reproduced in half-size reductions in this Section. Below, the agencies commenting are identified, along with the date of their letter, and the page on which their letter is reproduced. Where appropriate, a response follows the letter.

<u>Agency (date of letter)</u>	<u>Page</u>
* Department of Accounting and General Services, State of Hawaii (July 13, 1981)	14-6
* Building Department, City and County of Honolulu (July 21, 1981)	14-6
* Department of Parks and Recreation, City and County of Honolulu (July 21, 1981)	14-7
* Fish and Wildlife Service, U.S. Department of the Interior (July 23, 1981)	14-7
* Department of Social Services and Housing, State of Hawaii (July 27, 1981)	14-8
* Department of General Planning, City and County of Honolulu (July 29, 1981)	14-8
* Department of Hawaiian Home Lands, State of Hawaii (July 31, 1981)	14-9
* American Lung Association of Hawaii (August 6, 1981)	14-9
* Soil Conservation Service, U.S. Department of Agriculture (August 7, 1981)	14-10
* Indicates that the agency had no comments to offer; no response was necessary.	

<u>Agency (date of letter)</u>	<u>Page</u>
Department of Land and Natural Resources, State of Hawaii (July 16, 1981)	14-11
Police Department, City and County of Honolulu (July 23, 1981)	14-12
Board of Water Supply, City and County of Honolulu (July 24, 1981)	14-13
Department of Public Works, City and County of Honolulu (July 27, 1981)	14-14
Department of Housing and Community Development, City and County of Honolulu (July 27, 1981)	14-15
Department of Transportation Services, City and County of Honolulu (July 27, 1981)	14-16
Kahaluu Neighborhood Board No. 29 (July 28, 1981)	14-21
Department of Transportation, State of Hawaii (July 31, 1981)	14-24
Department of Planning and Economic Development, State of Hawaii (August 3, 1981)	14-30
Water Resources Research Center, University of Hawaii at Manoa (August 3, 1981)	14-32
Office of Environmental Quality Control, State of Hawaii (August 6, 1981)	14-33
Environmental Center, University of Hawaii at Manoa (August 6, 1981)	14-35
The Sierra Club, Hawaii Chapter (August 6, 1981)	14-38
Mr. and Mrs. Paul S. Reppun et al (August 6, 1981)	14-40
Department of Land Utilization, City and County of Honolulu (August 7, 1981)	14-42
Hui Malama Aina O 'Koolau (August 7, 1981)	14-45
Barry Property Management (August 10, 1981)	14-51
Department of Agriculture, State of Hawaii (August 13, 1981)	14-52

Topics of concern that were addressed in several of the comments received during the Draft EIS Review Period included:

- (1) Opposition in the use of the land for commercial purposes.
- (2) Requests that the agricultural use alternatives for the project site be evaluated in detail.
- (3) Traffic and transportation concerns.
- (4) Requests for detailed information on the sewage collection, treatment and disposal plans.
- (5) Comments on water quality and drainage impacts.
- (6) Comments on the recreational easements proposed.

TABLE 5
 RESPONSES TO DRAFT EIS FOR KAHALUU COMMERCIAL
 AND RESIDENTIAL DEVELOPMENT

DEADLINE DATE: August 7, 1981

	<u>Date Received</u>	<u>Date of Letter</u>	<u>Date Sent to DLU/FONG</u>
<u>City and County of Honolulu</u>			
Honolulu Fire Department			
Department of General Planning	<u>8/03/81</u>	<u>7/29/81</u>	<u>8/03/81</u>
Department of Parks & Recreation	<u>7/28/81</u>	<u>7/21/81</u>	<u>7/28/81</u>
Board of Water Supply	<u>7/30/81</u>	<u>7/24/81</u>	<u>7/30/81</u>
Police Department	<u>7/27/81</u>	<u>7/23/81</u>	<u>7/27/81</u>
Department of Public Works	<u>7/28/81</u>	<u>7/27/81</u>	<u>7/28/81</u>
Building Department	<u>7/27/81</u>	<u>7/21/81</u>	<u>7/27/81</u>
Department of Transportation Services	<u>7/30/81</u>	<u>7/27/81</u>	<u>7/30/81</u>
Department of Housing and Comm. Development	<u>7/31/81</u>	<u>7/27/81</u>	<u>7/31/81</u>
Department of Land Utilization	<u>8/10/81</u>	<u>8/07/81</u>	<u>8/10/81</u>
<u>State of Hawaii</u>			
Department of Transportation	<u>8/07/81</u>	<u>7/31/81</u>	<u>8/07/81</u>
Department of Planning & Economic Development	<u>8/06/81</u>	<u>8/03/81</u>	<u>8/06/81</u>
Department of Land & Natural Resources	<u>7/17/81</u>	<u>7/16/81</u>	<u>7/20/81</u>
Department of Health			
Office of Environmental Quality Control	<u>8/10/81</u>	<u>8/06/81</u>	<u>8/10/81</u>
Department of Agriculture	<u>8/17/81</u>	<u>8/13/81</u>	<u>8/17/81</u>
Environmental Center, University of Hawaii at Manoa	<u>8/10/81</u>	<u>8/06/81</u>	<u>8/10/81</u>
Water Resources Research Center, University of Hawaii at Manoa	<u>8/07/81</u>	<u>8/03/81</u>	<u>8/07/81</u>
State DAGS, Division of Public Works	<u>7/15/81</u>	<u>7/13/81</u>	<u>7/15/81</u>
Department of Social Services and Housing	<u>7/30/81</u>	<u>7/27/81</u>	<u>7/30/81</u>
Department of Hawaiian Home Lands	<u>7/31/81</u>	<u>7/31/81</u>	<u>7/31/81</u>

Responses to Draft EIS for Kahaluu
Commercial & Residential Development
Page 2

	<u>Date Received</u>	<u>Date of Letter</u>	<u>Date Sent to DLU/FONG</u>
<u>Federal</u>			
U.S. Army Corps of Engineers	_____	_____	_____
U.S. Fish & Wildlife Service	<u>7/24/81</u>	<u>7/23/81</u>	<u>7/24/81</u>
U.S. Department of Agriculture, Soil Conservation Service	<u>8/13/81</u>	<u>8/07/81</u>	<u>8/13/81</u>
<u>Community Organizations</u>			
Life of the Land	_____	_____	_____
Kaneohe Outdoor Circle	_____	_____	_____
American Lung Association of Hawaii	<u>8/07/81</u>	<u>8/06/81</u>	<u>8/07/81</u>
Kahaluu Neighborhood Board No. 29	<u>7/29/81</u>	<u>7/28/81</u>	<u>7/29/81</u>
Kaneohe Neighborhood Board No. 30	_____	_____	_____
Kaneohe Community Council	_____	_____	_____
Kaneohe Business Group	_____	_____	_____
Kaneohe Bay Community Association	_____	_____	_____
Hui Malama Aina O'Koolau	<u>8/10/81</u>	<u>8/15/81</u>	<u>8/10/81</u>
The Sierra Club, Hawaii Chapter	<u>8/07/81</u>	<u>8/06/81</u>	<u>8/07/81</u>
Individuals: M/M Paul S. Reppun Nani K. Sanderson Maggi Mench Hurd K. Mench Glenn D. Beachy Martha Beachy	<u>8/10/81</u>	<u>8/06/81</u>	<u>8/10/81</u>
Nancy Cathey, Temple Valley S.C.	<u>8/13/81</u>	<u>8/10/81</u>	<u>8/13/81</u>

GEORGE R. ARIYOSHI
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS
P. O. BOX 119 HONOLULU, HAWAII 96809

HIDEO MURAKAMI
COMPTROLLER
MIKE N. TOKUNAGA
DEPUTY COMPTROLLER

LETTER NO. (P)1571.1.1

JUL 13 1981

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

Gentlemen:

Subject: Draft Environmental Impact Statement
Kahaluu Commercial and Residential
Development

We have reviewed the subject draft EIS and have determined
that the project will not have an adverse environmental impact
on our facilities.

Very truly yours,

RIKIO NISHIORA
State Public Works Engineer

ES:jl

NO RESPONSE NECESSARY

JUL 16 1981

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING
150 SOUTH KING STREET
HONOLULU, HAWAII 96813



EILEEN R. ANDERSON
MAYOR

ROY H. TANJI
DIRECTOR AND BUILDING SUPERINTENDENT

PB 81-621

July 21, 1981

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

Dear Sir:

Subject: Draft Environmental Impact Statement
Kahaluu Commercial and Residential Development
Tax Map Key: 4-7-12:12, 27

We have reviewed the Draft Impact Statement and have
no comments to offer.

Very truly yours,

ROY H. TANJI
Director and Building Superintendent

AF:VK
cc: J. Harada

NO RESPONSE NECESSARY

JUL 27 1981

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



SILEEN R. ANDERSON
MAYOR

ROBERT K. MASUDA
DIRECTOR

July 21, 1981

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

Dear Mr. Rodriguez:

14-7

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT
PROPOSED KAHALOU COMMERCIAL AND
RESIDENTIAL DEVELOPMENT
TNK: 4-7-12: 12 & 27
PROJ. REF. NO. 81/SMA-24

Thank you for the opportunity to review the Draft Environmental Impact Statement for the Kahaluu Commercial and Residential Development.

Our comments to the proposed development as expressed in the Draft EIS report remains unchanged.

Sincerely yours,

ROBERT K. MASUDA, Director

RKM:vc

cc: DLU

NO RESPONSE NECESSARY

JUL 28 1981



Save Energy and You Serve America!



United States Department of the Interior

FISH AND WILDLIFE SERVICE
100 A.A. MOANA BOULEVARD
P. O. BOX 50187
HONOLULU, HAWAII 96850

IN REPLY REFER TO:
ES
Room 6307

July 23, 1981

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

Re: DEIS - Kahaluu Commercial
and Residential Develop-
ment, Oahu, Hawaii

We have reviewed the DEIS and visited the project site. We do not believe the project will have a significant impact on fish and wildlife resources in the area.

We appreciate this opportunity to comment.

Sincerely yours,

Ernest Kosaka
Project Leader
Office of Environmental Services

NO RESPONSE NECESSARY

JUL 24 1981

GEORGE P. ARIYOSHI
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING

July 27, 1981

Franklin Y. K. Sunn
DIRECTOR

DEPUTY DIRECTOR
RICHARD PAGLIANAWAN
DEPUTY DIRECTOR

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



EILEEN R. ANDERSON
MAYOR

WILLARD T. CHOW
CHIEF PLANNING OFFICER

DGP7/81-2298

July 29, 1981

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

Gentlemen:

Subject: Draft Environmental Impact Statement
Kahaluu Commercial and Residential Development

The Hawaii Housing Authority has reviewed the draft EIS on subject project and has no specific comments to offer relative to the proposed action.

Thank you for the opportunity to comment on this matter.

Sincerely,

Franklin Y. K. Sunn
FRANKLIN Y. K. SUNN
Director

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

Gentlemen:

Draft Environmental Impact Statement
Kahaluu Commercial and Residential Development

We have no further comments on the subject EIS. Our earlier Preparation Notice comments, i.e., the project's conflict with the objectives and policies of the adopted General Plan and the proposed development plan for the area, have been acknowledged by the developers and are discussed in the EIS.

Sincerely,

Ralph Kawamoto
RALPH KAWAMOTO
Planner

APPROVED:

Willard T. Chow
WILLARD T. CHOW

CC: DLU

NO RESPONSE NECESSARY

JUL 30 1981

AUG 03 1981



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

HONOLULU, HAWAII 96809
P. O. BOX 1870

July 31, 1981

GEORGE R. MIYOSHI
GOVERNOR OF HAWAII

PROJECT OFFICES

KAHUNA OFFICE
P. O. BOX 125
MAHELE, HAWAII 96742

KAUAI OFFICE
P. O. BOX 433
NIIHAU, HAWAII 96720

PROJECT OFFICES

MAUI OFFICE
P. O. BOX 22
KAHOOLA, MAUI 96730

MOLOKAI OFFICE
P. O. BOX 144
MOLOKAI, MOLOKAI 96729

KAUAI OFFICE
P. O. BOX 327
LIHUE, KAUAI 96741

AMERICAN  LUNG ASSOCIATION of Hawaii

August 6, 1981

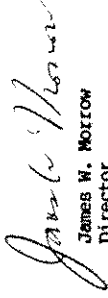
F. J. Rodrigues
Environmental Communications Inc.
P.O. Box 536
Honolulu, Hawaii 96809

Dear Mr. Rodrigues:

Subject: Draft EIS for the Proposed Kahaluu Commercial and Residential Development (DMK: 4-7-12: 12, 27)

We have reviewed the subject EIS with particular attention to those sections pertaining to air quality impact and are satisfied that the impacts have been adequately assessed. Thank you for providing a copy of the EIS for review.

Sincerely yours,


James W. Morrow
Director
Environmental Health

JWM:jm
CL/l19

cc: DLJ

NO RESPONSE NECESSARY

AUG 07 1981

Christmas Seals Fight TB, Asthma, Emphysema, Air Pollution

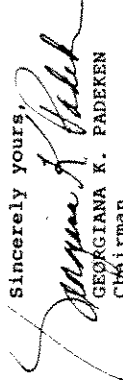
Environmental Communications, Inc.
P. O. Box 536
Honolulu, Hawaii 96809

Dear Sir:

SUBJECT: Draft Environmental Impact Statement
Kahaluu Commercial and Residential Development
Tax Map Key: 4-7-12:12, 27

The Department of Hawaiian Home Lands has reviewed the Draft Environmental Impact Statement for the subject project and has no comments.

Thank you for the opportunity to review and comment.

Sincerely yours,

GEORGIANA K. PADEKEN
Chairman

GKP:GW:kt

NO RESPONSE NECESSARY

JUL 31 1981



United States
Department of
Agriculture

Soil
Conservation
Service

P. O. Box 50004
Honolulu, Hawaii
96850

August 7, 1981

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

Dear Mr. Rodriguez:

Subject: Draft EIS for the Proposed Kahaluu Commercial and
Residential Development, Tax Map Key: 4-7-12: 12 & 27

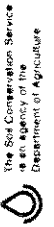
We have no further comments to make since your letter of June 24, 1981,
and the subject draft environmental impact statement address our
concerns.

Thank you for the opportunity to review this document.

Sincerely,

Jack P. Kanalz
JACK P. KANALZ
State Conservationist

NO RESPONSE NECESSARY



The Soil Conservation Service
is an agency of the
Department of Agriculture

SCS-AS-1
10-79

AUG 13 1981

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

July 20, 1981

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

Dear Mr. Ono:

Subject: Draft Environmental Impact Statement for Proposed
Kahaluu Commercial and Residential Development

Thank you for your comments, dated July 16, 1981, regarding
the Draft EIS for the Kahaluu Commercial and Residential Development.

We have reviewed your comments regarding the ingress/egress
closest to the bridge with the project engineer. He has informed us that
the project plans will be coordinated with, and must be approved by the
State Department of Transportation. Subsequently, your concern on the
ingress/egress will be addressed at that time.

We appreciate your concerns in this matter.

Very truly yours,



F. J. Rodriguez

cc: Senator Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.
(Attention: Ron Awa)
Austin, Tsutsumi, & Associates, Inc.
(Attention: Al Arakaki)

Your: 81/SWA-24(SW)

July 16, 1981

Honorable Michael N. McElroy
Director of Land Utilization
City & County of Honolulu
650 So. King Street
Honolulu, Hawaii 96813

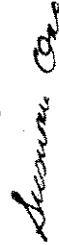
Dear Mr. McElroy:

Thank you for your letter of July 7, 1981, attaching copies of the
Draft Environmental Impact Statement (DEIS) for the Kahaluu shopping
center and residential subdivision.

Our views on this matter are reflected in our of letter of June 9, 1981,
which is contained on page 13-12 of the DEIS.

In addition, you may wish to review the desirability of establishing an
intersection close to the bridge. Inasmuch as the road grade has been elevated
at the crossing.

Sincerely,



SUSUMU ONO, Chairman
Board of Land and Natural Resources
and
State Historic Preservation Officer

✓cc: Environmental Communications

JUL 17 1981

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96814 AREA CODE (808) 968-5111

EILEEN R. ANDERSON
MAYOR



FRANCIS KEALA
CHIEF

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

August 5, 1981

OUR REFERENCE EPS:MJT

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

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

Dear Chief Keala:

Subject: Draft Environmental Impact Statement for Proposed
Kahala Commercial and Residential Development,
Tax Map Key: 4-7-12: 12, 27

Draft Environmental Impact Statement
Kahala Commercial and Residential Development
Tax Map Key: 4-7-12: 12, 27

July 23, 1981

1-4
1-2

Our review of the draft environmental impact statement leaves us with one major concern that there is a potential safety hazard in the location of the access road to Kamehameha Highway at the south end of the project site. According to the figures in the draft, this access would be within about 200 feet of the bridge over Kahala Stream. Cars turning left from Kamehameha Highway into this access road are likely to cause considerable congestion on the highway, especially if they have to compete with cars trying to turn left out of the access onto the highway. The congestion represents a hazard in itself, and it is made worse by the fact that it may not be clearly visible to Kahala-bound drivers until they reach the mid-point of the bridge.

We must request that some means of eliminating this potential safety hazard be found. Our first preference would be for complete elimination of the access onto Kamehameha Highway from the project site. This would force all traffic into Waiehe Road and help ensure that there would be traffic lights at the junction of that roadway and Kamehameha Highway. A possible alternative would be to ban left turns out of and into the access road, but this is less certain to eliminate the hazard. Relocation of the access to some point closer to Waiehe Road is not desirable because it would increase the competition between drivers at the two junctures for space on Kamehameha Highway.

Sincerely,
FRANCIS KEALA
Chief of Police
By: *[Signature]*
EARE THOMPSON
Assistant Chief
Administrative Bureau

We have received and reviewed your letter of July 23, 1981, on the above-mentioned project. Your concerns on the ingress/egress nearest the Kahala Bridge were carefully considered. This subject has also been discussed with the project's engineers and they have indicated that the location of the ingress/egress will be reconsidered. The project engineers have also indicated that the plans for access are in a preliminary stage and subsequently, need to be coordinated with and approved by the State Department of Transportation because Kamehameha Highway is under their jurisdiction. This information will be included in the Final EIS.

We appreciate your concerns in this matter.

Very truly yours,

[Signature]

F. J. Rodriguez

cc: Mr. Hiram L. Fong, Sr.
Wong, Sueda & Associates, Inc.
Austin, Tsutsumi & Associates, Inc.
Department of Land Utilization

FJR:CKT:pl

JUL 27 1981

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



EILEEN R. ANDERSON, Mayor
YOSHIE H. FUJINAKA, Chairman
Robert A. Souza, V-Chm.
MICHAEL J. CHUN
RYOKICHI HIGASHIONNA
DONNA M. HOWARD
Dat Quon Pang
CLAUDETTE YAMAMOTO
KAZU HAYASHIDA
Manager and Chief Engineer

July 24, 1981

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

Gentlemen:

Subject: Draft Environmental Impact Statement
for Kahaluu Commercial and Residential
Development, TMK: 4-7-12: 12, 27

We forward for your use a supplement to our comments of
June 12, 1981 to Mr. Ronald Awa (pg. 13-19).

Ground disposal of sewage in the vicinity of the project
will not be feasible because of the high water table.

If you have any questions, please contact Lawrence Whang
at 548-5221.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

ENVIRONMENTAL
COMMUNICATIONS
INC.

August 5, 1981

F. J. RODRIGUEZ
PRESIDENT

Mr. Kazu Hayashida, Manager
and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Hayashida:

Subject: Draft Environmental Impact Statement for Kahaluu
Commercial and Residential Development, Tax Map
Key: 4-7-12: 12, 27

Thank you for your comment on the Draft EIS for the proposed
Kahaluu Commercial and Residential Development. It is noted that your
comment in regards to the non-feasibility of ground disposal of sewage
(effluent) because of the high water table is indicated in the Draft EIS
on page 2-9.

We appreciate your concern in this matter.

Very truly yours,

F. J. Rodriguez

cc: Mr. Hiram L. Fong, Sr.
Wong, Sueda & Associates, Inc.
Austin, Tsutsumi & Associates, Inc.
Department of Land Utilization

FJR:CKT:pi

JUL 30 1981

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



BILLEN R. ANDERSON
MAYOR

MICHAEL J. CHUN, Ph.D.
DIRECTOR AND CHIEF ENGINEER

ENV 81-279

July 27, 1981

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

Gentlemen:

We have reviewed the Environmental Impact Statement for the Kahala Commercial and Residential Development and have the following comments.

1. The standard pavement width of City streets with a 44 feet right-of-way is 28 feet instead of 24 feet. Will standard curb and gutters be installed?
2. The responsibility for the operation and maintenance in the pump station and treatment plant alternative should be stated.
3. If the treatment plant option is selected, a certified operator should be retained to comply with Article 340 B-6 of the Hawaii Revised Statutes. A proposed financing scheme to support the proper operation of the plant should be disclosed as a matter of interest. Also, a sludge disposal plan should be given.

Me ke aloha pumehana,

William G. Bost
For
MICHAEL J. CHUN
Director and Chief Engineer

ENVIRONMENTAL
COMMUNICATIONS
INC.

August 19, 1981

Dr. Michael J. Chun, Director
and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Dr. Chun:

Subject: Draft Environmental Impact Statement for Proposed
Kahala Commercial and Residential Development

We have received and reviewed your letter of July 27, 1981 on the abovementioned Draft EIS. In response to your comments, we are providing the following dispositions:

- 1) The EIS will be corrected to identify the standard pavement width as 28 feet.
- 2) We are informed by the project engineers that the responsibility of the operation and maintenance of the pump station and treatment plant alternative will be the City's Department of Public Works. If this alternative is selected, the pump station and treatment plant alternative will be built to City standards and upon completion, dedicated to the City.
- 3) If the treatment plant option is selected, compliance with Article 340 B-6 of the HRS along with other detailed data will be submitted to the Department of Health and the Department of Public Works. At this time, these are not available because detailed plans have not been developed.

Thank you for your comments.

Very truly yours,

F. J. Rodriguez

F. J. Rodriguez

cc: Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.
Austin, Tsutsumi & Associates, Inc.

JUL 28 1981

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE 833-4161



GILEEN R. ANDERSON
MAYOR

JOSEPH K. CONANT
DIRECTOR

F. J. RODRIGUEZ
PRESIDENT

ENVIRONMENTAL
COMMUNICATIONS
INC.

August 5, 1981

Mr. Joseph K. Conant, Director
Department of Housing and
Community Development
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Conant:

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

Gentlemen:

Subject: Draft Environmental Impact Statement
Kahala Commercial and Residential
Development, Tax Map Key: 4-7-12:12, 27

We have reviewed the subject draft environmental impact
statement and have no comment.

However, should the developer wish to provide low- and
moderate-income housing, please have them contact Mr. James
Miyagi, Phone 523-4264.

Sincerely,

JOSEPH K. CONANT

Subject: Draft Environmental Impact Statement for the
Proposed Kahala Commercial and Residential
Development, Tax Map Key: 4-7-12: 12, 27

We have received and reviewed your letter of July 27, 1981, commenting
on the abovementioned Draft EIS.

As noted in the EIS, the developer does not plan to build any homes on
the residential lots to be provided. Subsequently, the developer would
not be involved in providing low- and moderate-income housing as part
of the proposed project.

We appreciate your concerns on this matter.

Very truly yours,

F. J. Rodriguez

cc: Mr. Hiram L. Fong, Sr.
Wong, Sueda & Associates, Inc.
Department of Land Utilization

FJR:CKT:pf

JUL 31 1981

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813



KILEEN R. ANDERSON
MAYOR

ROY A. PARKER
DIRECTOR

TE7/81-2045

Environmental Communications, Inc.
Page 2
July 27, 1981

July 27, 1981

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

Subject: Draft Environmental Impact Statement
Kaha'iu Commercial and Residential Development
TK: 4-7-12: 12, 27

14-16

We have the following comments on the Draft Environmental Impact Statement:

1. The traffic study does not address the concerns (items 1, 2 and 4) as stated in our letter of June 3, 1981 to the consultant (see attached copy).
2. Our review indicates that there may be a need for traffic signals at the intersection of Wa'hee Road and Kamehameha Highway. The traffic study should include a discussion on this need.
3. The report concludes that the future highway system with Kamehameha Highway improved to a four-lane divided highway will provide considerable excess capacity and further mitigate at a future time any undesirable traffic congestion. However, there is no mention of when these improvements will be implemented.
4. The report indicates that there was a large decrease in traffic in 1981 from that in 1979. The source for this data should be included in the report.
5. The roadway servicing the residential section must be designed with curb returns on both sides. The driveway servicing the back side of the proposed commercial area on Wa'hee Road should be located at least 15 feet from the point of curvature of curb return.
6. Consider curb return for driveway to main parking lot.

7. The report should clearly indicate the project's impact on City bus service, system capacity, expected additional ridership, impact on other communities served by the same route and possible mitigating problems.
8. The report should also address school bus service and para-transit systems such as Handi-Van.
9. Since Kamehameha Highway is under State jurisdiction, it should be forwarded to them for their requirements.

If you have any questions on this matter, please contact Kenneth Hirata of my staff at 523-4190.

Very truly yours,

ROY A. PARKER
ROY A. PARKER
Director

Attach.
cc: State Highway (Etich Tanaka)

JUL 30 1981

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

August 19, 1981

TES/81-155-
PL-3020-01

Mr. Roy Parker, Director
Department of Transportation Services
City and County of Honolulu
Honolulu Municipal Building
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Parker:

Subject: Draft Environmental Impact Statement for the Proposed
Kahala Commercial and Residential Development

We have reviewed your letter of July 27, 1981, commenting on the above-mentioned Draft EIS document. Your concerns and previous letter of June 3, 1981 were transmitted to Henry T. Au, the traffic consultant for the proposed project. Mr. Au has responded to each item of both letters. His responses are enclosed and provides detailed explanations on your concerns.

Very truly yours,

F. J. Rodriguez

Enclosures

cc: Mr. Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.
Austin, Tsutsumi & Associates, Inc.

June 3, 1981

Wong, Sueda & Associates, Inc.,
Maui Suite, 905 Makahiki Way
Honolulu, Hawaii 96826

Attention: Ronald K. Au

Gentlemen:

Subject: Kahala Development
THK: 4-7-12: 12, 27

We recommend that a traffic study be conducted and incorporated into the Environmental Impact Statement.

The traffic study should address the following concerns:

1. The traffic impact of the project on the surrounding streets. A capacity analysis of the Wahee Road-Kamehameha Highway intersection is necessary for the a.m. and p.m. peak hours.
2. The traffic impact of the project on the arterial system that will be affected, namely, Kamehameha Highway and Kahekahi Highway.
3. The adequacy of the off-street parking spaces that will be provided to support the proposed uses.
4. The need for street improvements to Wahee Road and Kamehameha Highway to support the proposed use.

If you have any questions on this matter, please contact Kenneth Hirata of my staff at 523-4190.

Very truly yours,

ROY K. PARKER
Director

cc: Dept. of Land Utilization

dy (Kenneth Hirata)

HENRY TUCK AU
Consulting Engineer
19 1/2 KING STREET, SUITE 507
HONOLULU, HAWAII 96813

Telephone: 3847217

August 6, 1981

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

Dear Mr. Rodriguez:

Subject: Comments On Draft Environmental Impact
Statement, Kahaluu Commercial And Residential
Development, Tax Map Key 4-7-12: 12 & 27

Submitted herewith are the responses to the comments by the
Department of Transportation Services relative to traffic with respect
to the above project (letter dated July 27, 1981, Ref: TE 7/81-2065).

cc COMMENT:

1. The traffic study does not address the concerns (items 1, 2 and 4) as stated in our letter of June 3, 1981 to the consultant (see attached copy).

1. The traffic impact of the project on the surrounding streets.
A capacity analysis of the Waihee Road-Kamehameha Highway intersection is necessary for the a.m. and p.m. peak hours.

RESPONSE:

The traffic impact of the project on the surrounding streets as well as the capacity analysis of the Waihee Road-Kamehameha Highway intersection are set forth in detail on pages A-13 and A-14 of the DEIS. On the basis of the capacity analysis, it was concluded that Kamehameha Highway under present conditions will have sufficient capacity to accommodate present as well as future vehicular demands to the year 1990. Waihee Road with a right of way width of 60 feet and pavement width of 40 feet will be adequate to meet not only present vehicular demands, but also future increases as well.

Mr. Fred Rodriguez

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August 6, 1981

COMMENT:

2. The traffic impact of the project on the arterial system that will be affected, namely, Kamehameha Highway and Kahekili Highway.

RESPONSE:

Of all the traffic generation characteristics, the most important is the peak hour traffic at different hours of the day and its effect on the highways at the time of the highway's peak loading conditions. As set forth in the Traffic Impact Statement, the peak hour time intervals on Waihee Road occur on different hours and do not conflict or overlap with the peak hour volumes of Kamehameha Highway and Kahekili Highway. Secondly, the traffic generated by the project will occur after the morning peak commuting hours and before the afternoon peak commuting hours for daytime shopping, and after both the morning and afternoon peak commuting hours for evening shopping.

These significant differences in peak hour characteristics result in and equalization and spacing of the traffic load on the highway system. The proposed project, therefore, will not add substantially to the traffic problems to create an adverse impact on Kamehameha Highway or Kahekili Highway.

4. The need for street improvements to Waihee Road and Kamehameha Highway to support the proposed use.

RESPONSE:

Except for the curb returns, there is no need for street improvements to Waihee Road and Kamehameha Highway. Waihee Road has already been improved to city and county standards with curbs, gutters, sidewalks, street lights, etc. Kamehameha Highway is a Federal-aid highway and should improvements be required by the State Department of Transportation, the improvements will comply with Federal highway standards.

COMMENT:

2. Our review indicates that there may be a need for traffic signals at the intersection of Waihee Road and Kamehameha Highway. The traffic study should include a discussion on this need.

RESPONSE:

The installation of a traffic signal is warranted only when abnormal vehicular or pedestrian delay is created by the physical inability of traffic to flow smoothly at an intersection. The safety aspect alone seldom is the decisive factor since accidents seldom are eliminated entirely with signal operation. Numerous traffic studies have shown that in many cases, there are increases in accident frequency following installation of traffic signals.

AUG 7 1981

Secondly, the installation of a traffic signal must conform to the warrant for Interruption of Continuous Traffic. This warrant is applied when operating conditions on a major street are such that the traffic volume is so heavy that traffic on a minor intersecting street suffers excessive delay or hazard in entering or crossing the major street. The warrant is satisfied when the vehicles per hour on the major street (total of both approaches) is 750 and the vehicles per hour on the minor street approach (one direction only) is 75. These volumes must be equalled or exceeded for each of any hours of an average day, and the signal installation must not seriously disrupt progressive traffic flow. The major street and minor street volumes are for the same 8 hours.

Analysis of the traffic volumes of the street system indicates that signalization is not warranted even for weekend traffic. Since signalization is not warranted, the discussion on signalization was omitted from the Traffic Impact Statement.

COMMENT:

14110

3. The report concludes that the future highway system with Kamehameha Highway improved to a four-lane divided highway will provide considerable excess capacity and further mitigate at a future time any undesirable traffic congestion. However, there is no mention of when these improvements will be implemented.

RESPONSE:

Kamehameha Highway is a Federal-aid highway and since government has the responsibility to plan, construct and improve these highways, it is not possible to definitely indicate when the improvements to Kamehameha Highway will be implemented, even if the alignment is set forth in the General Plan. Since the improvements will not be needed until sometime after 1990, there will be sufficient time to budget and to prepare the necessary plans for the improvement of Kamehameha Highway.

COMMENT:

4. The report indicates that there was a large decrease in traffic in 1981 from that in 1979. The source for this data should be included in the report.

RESPONSE:

The 1981 traffic volume count on Kamehameha Highway was collected by the Consultant during a 3-day weekend traffic volume and turning movement count conducted on June 5, 6 and 7, 1981 at the intersection of Kamehameha Highway.

Highway and Waihee Road. The 1981 traffic volume was then compared to the 1979 volume collected by the State Department of Transportation. The 1981 traffic count showed a large decrease in traffic from that in 1979.

COMMENT:

7. The report should clearly indicate the project's impact on City bus service, system capacity, expected additional ridership, impact on other communities served by the same route and possible mitigating problems.

RESPONSE:

The 30 minutes headway for the bus service to and from Kahala is so inconvenient for shopping that for all practical purposes, the project will have an extremely negligible impact on the City's bus service. Furthermore, surveys of shopping center characteristics indicate that the automobile is the only significant mode of travel for shoppers and that mass transportation tripmaking is negligible.

The negligible impact on the City's bus service also applies to the residential subdivision with the 21 lots. From surveys conducted in the United States, not more than 25% of the travel mode will be by mass transportation during the morning and afternoon peak hours. During off-peak hours, less than 3% of the travel mode will be by mass transportation. Thus, there is the concentration of rider demand only during the morning and afternoon peak hours. Using a factor of 4.1 persons per dwelling unit, an additional 21 riders may be using the City's bus system during the morning and afternoon peak hours.

A possible solution to the problem of the concentration of rider demand is to hire part-time drivers working split shifts to operate more buses during the peak hours. Labor agreements, however, call for a full day's wage even when less than a full eight-hour day is worked. Every attempt should be made to persuade the labor unions to approve the hiring of part-time drivers to provide adequate capacity and service during the peak hours, otherwise there will be a high and excessive cost if mass transportation is made to accommodate the passengers during these hours.

COMMENT:

8. The report should also address school bus service and para-transit systems such as Handi-Van.

Mr. Fred Rodriguez


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August 6, 1981

RESPONSE:

The proposed project will have no impact on public schools and, therefore, the project will have a negligible impact on school bus service and para-transit systems. The number of school-aged children (32) generated by the project can be absorbed into the existing schools serving the project area. Kahaluu Elementary School is in very close proximity, being located only several hundred feet mauka of the proposed residential subdivision. King Intermediate School is 4.1 miles in the Kaneohe direction and Castle High School is 6 miles from the project site in Kaneohe.

Sincerely,



Henry Tuck Au
Consulting Engineer

HTA:jmh

KAHALU NEIGHBORHOOD BOARD NO. 29

KAHALU COMMUNITY CENTER
47 232 WAHEE ROAD
KANEHOE, HAWAII 96744

HELEIA KEA, KAHALU; WAHIE E. MAIHOLE, MAIKANE, HARIPOU AND KUALOAI



"Let me not ever have
an unhappy minority"

July 28, 1981

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

Proposed Commercial and Residential Development
Kahalu'u (Waiehe'e), O'ahu, Hawaii, TRK 4-7-12; 12 & 27
Response to Draft Environmental Impact Statement

Dear Mr. Rodriguez:

The Kahalu'u Neighborhood Board has received your June 24th response to the detailed comments the Board made on June 17th relating to the preparation of the Draft EIS above mentioned. We thank you for your prompt reply. However, the Board feels that your response is not much more than a reiteration of the statements made in the EIS itself and that it does not address the questions asked.

Our position has been stated previously. Without repeating or expanding at great length, we take this opportunity to emphasize the following with particular reference to Ordinance 4529 (SMA):

Surface and Storm Drainage

If the area were in Agriculture, as proposed by the Development Plans, and planted to crops, the drainage into Kane'ohu Bay would be slow and "clean". Siltation would take place in the Flood Control Lagoon. Any earth particles of the lighter, smaller type going out into the Bay would be nutrient and not lethal; modern herbicides and insecticides are said to be rapidly biodegradable.

By contrast, the run-off from huge paved and roofed surfaces (parking areas, roads, driveways, buildings, etc.) through curbs, gutters & concrete storm drains would carry oil, grease and hydrocarbons that would float out into the Lagoon and the Bay and be quite lethal to plant and animal life. This run-off would be rapid and precipitous and it would carry much solid, non-biodegradable refuse along with it.

Public Access to the Lagoon

The intent of the Shoreline Management Act pertains equally to estuaries and lagoons as it does to ocean and bay shorelines in terms of setback and public access. Public access to the multi-purpose recreational and flood

JUL 29 1981

control Lagoon has not been addressed adequately. The Draft EIS suggests a setback of only 12'-25' from the Lagoon littoral, which is little more than an allowance for the City to have a road easement for maintenance purposes.

Integrated Park Complex

Recreation is emphasized as one of the goals of the Shoreline Management Act. The 1975 Final EIS for the Kahalu'u Watershed stresses the need for a full size park to serve the Kahalu'u Community. The Department of Parks and Recreation has projected a continuum of recreational space connecting the beach park at the mouth of the Lagoon and the park areas mauka of the proposed Kahalu'u Commercial and Residential Development. The suggested 12'-25' "easement" along the shore of the Lagoon can hardly be considered even as a "park strip".

The Draft EIS states: "Pragmatically, the high cost of the property (based on the zoning) would eliminate the use of the land for recreational purposes." This is an irresponsible statement to make for valuing a 15 acre property which was purchased for \$8,000/acre in 1966 and is assessed at \$16,000/acre in 1981.

The Kahalu'u Neighborhood Board reserves the right to make additional points, at appropriate times in the future, against granting this request or a Shoreline Management Area Permit.

Very truly yours,
Edwin B. Stevens
Edwin B. Stevens, Chairman
Kahalu'u Neighborhood Board No. 29

cc: Dept. of Land Utilization
Dept. of Parks and Recreation
Dept. of Public Works
Councilman Toraki Matsumoto
Councilman Andrew Poeopoe
Kahalu'u Neighborhood Board (2)
Neighborhood Commission
Kahalu'u Community Resource Center
Wong Sueda & Associates, Inc.

ENVIRONMENTAL
COMMUNICATIONS
INC.

August 20, 1981

Mr. Edwin B. Stevens, Chairman
Kahaluu Neighborhood Board No. 29
August 20, 1981
Page 2

Mr. Edwin B. Stevens, Chairman
Kahaluu Neighborhood Board No. 29
c/o Kahaluu Community Center
47-232 Waihee Road
Kaneohe, Hawaii 96744

Dear Mr. Stevens:

Subject: Draft Environmental Impact Statement for the Proposed
Kahaluu Commercial and Residential Development,
Kahaluu, Koolauapoko District, Oahu

We have received and reviewed your letter of July 28, 1981, on the
abovementioned project. Your concerns have been addressed and discussed
in the Draft EIS, specifically as follows:

Surface and Storm Drainage

Comment: "If the area were in Agriculture, as proposed by the
Development Plans, and planted to crops, the drainage into
Kaneohe Bay would be slow and 'clean'."

Response: This is incorrect. This statement fails to take into
account the biocides, pesticides, fertilizers, etc. normally used in
commercial agricultural operations. Also, the high water table under
the project site would allow little filtration to occur, subsequently,
'clean' water would not be the result.

Comment: "Situation would take place in the Flood Control Lagoon.
Any earth particles of the lighter, smaller type going out into the
Bay would be nutrient and not lethal; modern herbicides and insecti-
cides are said to be rapidly biodegradable."

Response: This is directly addressed in the Draft EIS; Dr. Dugan's
report, "Environmental Aspects of Storm Water Runoff, Kahaluu
Commercial and Residential Development, Kahaluu, Koolauapoko, Oahu,
Hawaii," is incorporated into the Draft EIS as Appendix C and pages
5-5, 5-6, state:

"In general the biocides presently in use tend to breakdown
more readily in comparison to the more lasting types of a
few years ago; consequently, except for agricultural runoff,
the types and concentrations are usually considered insignifi-
cant." (Underscored for emphasis.)

Dugan also states: "From most studies to date, Kaneohe Bay appears
to be more sensitive to nutrient and sediment contamination."

While you state that siltation of soil particles (from an agricultural use)
will occur in the Lagoon, even this siltation would be undetectable and
should be mitigated to maintain the water quality in the Lagoon.

Comment: "By contrast, the run-off from huge paved and roofed
surfaces (parking areas, roads, driveways, buildings, etc.) through
curbs, gutters & concrete storm drains would carry oil, grease and
hydrocarbons that would float out into the Lagoon and the Bay and
be quite lethal to plant and animal life."

Response: Dugan states: "No detectable impacts attributable to
heavy metals are expected."

Comment: "This run-off would be rapid and precipitous and it
would carry much solid, non-biodegradable refuse along with it."

Response: Dugan states: "The maximum peak discharge rate
shouldn't increase over 5 cfs, which is insignificant in comparison
to the 20,000 cfs flow the lagoon was designed for." Also, the
drainage system will be designed to prevent refuse from entering
the lagoon.

Public Access to the Lagoon

There is discussion on public access on pages 5-12, 5-13, and E-2 of
the Draft EIS. The 12- to 25-foot strip will be retained primarily for public
access to the Lagoon and only secondarily for the City as a road easement
for maintenance purposes. The easement (detailed decisions on width and
area, and maintenance) will be coordinated with the Department of Parks and
Recreation.

Mr. Edwin B. Stevens, Chairman
Kahaluu Neighborhood Board No. 29
August 20, 1981
Page 3

Integrated Park Complex

A value of \$16,000 per acre (in 1981) cited by your comment, is not consistent with recent appraisals of comparable and adjacent properties for loan purposes. The appraisals of comparable parcels that are appropriately zoned value the land (market value) at \$17.00 per square foot. It is the opinion of the developer that use of the project site for recreational purposes would not be feasible (by the developer) unless the City purchases the land uses it for public recreational purposes.

Thank you for your comments; we appreciate your concerns on this matter.

Very truly yours,



F. J. Rodriguez

cc: Hiram L. Fong, Sr.
Wong, Sueda & Associates, Inc.
Department of Land Utilization

FJR:CKT:pl

In the city of Newark, residents in western New Castle County, almost midway between New York City and Washington, D.C. Primarily because Newark is the home of the 18,000-student University of Delaware and because its proximity to Interstate-95 (the Delaware Turnpike) and other major thoroughfares, restaurant entrepreneurs have looked at the city as an excellent location for their businesses. Since 1970, fourteen eating establishments have opened in Newark and additional inquiries continue. Fast food restaurants have spearheaded this growth. In the past year and one-half, two new fast food restaurants were built in Newark—McDonald's on South College Avenue, an important north/south route, and Gino's on Main Street, one of the city's two principal westbound streets. These restaurants joined the recently established Gino's on South College Avenue, McDonald's at the Capitol Trail Circle, the gateway to the main commercial thoroughfare linking Newark and Wilmington; Burger King on Delaware Avenue, a primary eastbound route, and Howard Johnson's on South College Avenue.

While the growth in fast food restaurants is not unique in Newark, the city's residents face particularly difficult transportation problems since Newark's major arterials are either over-capacity or experiencing significant delays. A survey of Newark residents conducted in June, 1978 found only 39 percent of those interviewed satisfied with traffic control in the city—by far the lowest ranking of all governmental services surveyed.²

Growth in the food service sector and fast food restaurants in particular has contributed to traffic generation problems in the following ways:

1. Customers are drawn from traffic presently using adjacent roadways and ingress and egress of customers interrupts the flow of traffic on adjacent roadways, and
2. Customers are drawn specifically to the facility from homes, schools or places of business, bringing additional traffic to adjacent roads.

Fast food restaurants, which on high business volume and fast

generators. Unfortunately, the roads in Newark most likely to attract fast food facilities, those with lands zoned for central business district type uses and for general business, are experiencing the most serious traffic problems (i.e., South College, Delaware, and Cleveland Avenues, and Main Street).

In order to improve the city's capacity to evaluate fast food restaurant development proposals, the City Planning Department issued a report analyzing traffic generated by such facilities, which forms the basis for this article.³ Fortunately, the City Zoning Code requires that operators of fast food restaurants secure a special use permit from the city's elected Council before opening their facility. The Code states that:

"Special Use Permits may be issued . . . provided that the Council shall find . . . the applicant has demonstrated the conditional use will not:

- (A) Affect adversely the health or safety of persons residing or working in the neighborhood of the proposed use;
- (B) Be detrimental to the public welfare or injurious to property or improvements in the neighborhood; and
- (C) Be in conflict with the purposes of the Comprehensive Development Plan (1969) of the City."⁴

This special use permit criteria provides an appropriate legal tool for regulating fast food restaurants by directly linking the issuance of permits for these businesses to the health, safety and public welfare of the community, rather than through considerations of aesthetics or taste. Certainly, if it can be demonstrated that a fast food restaurant will have a negative impact on the well-being of a neighborhood by generating significant amounts of new traffic then the denial of permission to build has the legal foundation traditionally required under zoning law.⁵ In order to measure the impact on the health and safety of the community, this article summarizes previously issued data on fast food restaurant traffic generation, and focuses more specifically on the question of traffic drawn to fast food restaurant sites, rather than "captured" from existing traffic flow.

DEFINITION OF TERMS

The terminology used below is defined as follows:

Average Daily Traffic Volume (ADT). The average daily one way vehicle movements in both directions for a particular roadway.

Fast Food Restaurant. Any restaurant with more than twenty-five seats serving the majority of its food in disposable containers, packages, or other similar wrapping, for consumption on or off the premises (Newark Zoning Code definition).

Gross Floor Area (GFA). The total building floor area on a particular site, including basement and upper levels.

Peak Hour Volume. Number of trips recorded during the hour of most activity. Fast food restaurant peak hour is generally noon to 1:00 p.m.; Trip. A one-way vehicle movement with either the origin or destination inside the study site. Therefore, each vehicle which arrives at and departs from a facility constitutes two trips.

Trip Generation. Total number of trips crossing a counting station within a given time period. Measurements of fast food restaurant trip generation generally rely on a mechanical counter placed in the entrance and exit driveways; and

Trip Rate. Total 24-hour count of trips to and from a study site measured by parameters like acre, employee, or Gross Floor Area. The most commonly used measures for commercial facilities are trips per 1,000 square feet of GFA or per acre.

TOTAL FAST FOOD RESTAURANT TRIP GENERATION

The volume of traffic that a facility will generate is dependent upon many factors including, but not limited to: land use type, location, surrounding land uses, socioeconomic characteristics of area residents, traffic volumes on adjacent roadways, and business volume. By using various studies conducted across the nation, however, a probable range of trip generation can be derived which serves as a starting point in evaluating the impact of an individual facility.

The most extensive trip generation study to date was prepared by the Maricopa Association of Governments (Maricopa County, Arizona) in 1974 and updated in 1979.⁶ Other significant trip generation studies include the Institute of Transportation

Fast Food Restaurant Trip Generation: Another Look

By Roy Haywood Lopata and Stuart J. Jaffe

BURGER KING
SEAFOOD SKOPPE
WENDELL'S HANGOVERS
JACK IN THE BOX
PIZZA HUT
FISH CHIPS
McDONALD'S OVERSEAS SERVICE

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References

1. Alfa M. Voorhees & Associates, Inc., "Metro Transportation Study for Newark, New Jersey," October, 1977.
2. Newark Planning Department, "Analysis of Newark Restaurants," 1978.
3. Roy H. Lipkin and Susan J. Jaffe, "Fast Food Facility Trip Generation, Newark Planning Department, Newark, Delaware, May, 1979.
4. City of Newark Zoning Code Section 32-1.6.
5. See Theodor M. Anderson, "American Law of Zoning," Vol. 1, Section 7.09, San Francisco: Bancroft Whittier, 1968.
6. National Association of Governments, Trip Generation, 1978.
7. Institute of Transportation Engineers, Trip Generation, 1978 Ohio Edition, "Trip Generation Data."
8. March, 1974, Delaware Department of Transportation, "Traffic counts of two fast food facilities in Dover, and Robert Shaw, "Traffic Engineering," March 1974.
9. Institute of Transportation Engineers, Trip Generation, 1976.
10. Ibid.
11. Zoning Code, Section 32-7.8.

facilities generate 769 trips daily per 1,000 square feet of gross floor area, including 110 trips per 1,000 square feet during peak hour operation. A fast food restaurant of 2,500 square feet GFA would generate approximately 1,923 trips per day, of which 275 are generated during the peak hour of operation. Beyond that, the Newark Planning Department's traffic survey corresponds to the data generated by McDonald's indicating that a considerable portion (about 40 percent) of the vehicles that enter fast food restaurants are drawn specifically to the facility and do not come from existing traffic.

Because the majority of locations suitably zoned for fast-food restaurants (i.e., Cleveland, Delaware, and South College Avenues, and Main Street) already experience traffic problems, the traffic impact of a new fast food restaurant should be carefully evaluated in the context of whether the facility will adversely affect the health or safety of persons residing or working in the neighborhood of the proposed use, as specified in the city's Zoning Code regulations for special use permits.¹⁰ Since it is highly unlikely that prospective fast food restaurant operations would propose such facilities on streets with low traffic volume, the amount of new traffic generated ought to be carefully evaluated by other communities, especially in light of the findings described above concerning the significant percentage of additional traffic drawn to fast-food restaurants.

Collection of information on trip generation for specific land uses has been one of the major achievements in recent years. The Newark Planning Department's 1979 study was the first to include information on trip generation for fast-food restaurants. The institute encourages transportation professionals to conduct studies similar to the one described here and to share the results with the profession.

percent level of confidence, allowing an error margin of ± 7 percentage points. Moreover, it is reassuring to assume the results are generalizable to other fast food restaurants in similar locations in light of the comparable findings of a nationwide study by McDonald's.⁶

The Planning Department survey revealed that approximately 39 percent of those interviewed, 56 of 143, came specifically to the fast food facility to eat and returned directly to their place of origin. As Tables 2 & 3 illustrate, of the customers making single-purpose trips, 46 percent came from work, 30 percent from home, and 23 percent from school. McDonald's reported similar findings in a nationwide study of forty of their facilities—approximately 45 percent of their customers made single-purpose trips.⁶

Thus, between 35 and 50 percent of fast food restaurant's patrons are drawn from home, school or work locations to eat and return to their place of origin. In Newark, on roadways such as Cleveland, South College and Delaware Avenues, and Main Street, this additional volume can add substantially to an already congested and hazardous traffic situation.

CONCLUSIONS

As documented above, fast food restaurants have considerable impact

such facilities capture a large percentage of business from existing traffic, rather than by drawing vehicles directly to the restaurant from home or work.

Little research has been conducted, however, which breaks down proportions of trips generated specifically by a particular land use. The Institute of Transportation Engineers notes that:

"It is essential that emphasis be focused on defining how much of the total generated traffic would be attracted from the passing adjacent street traffic to fill building and to more accurately define the traffic impact of the street system caused by development of a site."⁶

In an effort to better ascertain the nature of fast food trip generation, the

percent level of confidence, allowing an error margin of ± 7 percentage points. Moreover, it is reassuring to assume the results are generalizable to other fast food restaurants in similar locations in light of the comparable findings of a nationwide study by McDonald's.⁶

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ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 19, 1981

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

Dear Mr. Higashionna:

Subject: Draft Environmental Impact Statement for the Proposed
Kahala Commercial and Residential Development

We have reviewed your letter of July 31, 1981, commenting on the
abovementioned Draft EIS document. Your comments were transmitted to
Mr. Henry T. Au, the traffic consultant for the proposed project; his
responses are enclosed and provides detailed explanations on your
concerns.

14-27

Very truly yours,



F. J. Rodriguez

Enclosures

cc: Mr. Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.
Austin, Tsutsumi & Associates, Inc.

HENRY TUCK AU

Consulting Engineer
19 S. KING STREET, SUITE 207
HONOLULU, HAWAII 96813
Telephone 538-7237

August 11, 1981

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

Dear Mr. Rodriguez:

Subject: Comments On Draft Environmental
Impact Statement, Kahala Commercial
And Residential Development, Tax Map Key
4-7-12: 12 & 27

Submitted herewith are the responses to the comments by the
State Department of Transportation relative to traffic with respect to
the above project (letter dated July 31, 1981. Ref: STP 8.7500).

COMMENT:

P 5-13, 5, 7

Since there are no proposals at present to improve Kamehameha
Highway, the EIS should not imply that any undesirable traffic congestion
will be mitigated by the future highway system.

RESPONSE:

The capacity of Kamehameha Highway is explained in detail on
Page A-14 of the DEIS, and on the basis of capacity analysis, it was
concluded that no improvements are necessary on Kamehameha Highway until
the year 1990. Beyond 1990 the future highway system will require the
improvement of Kamehameha Highway to a 4-lane divided highway. The 4-lane
divided highway will have considerable excess capacity and any undesirable
traffic congestion that may occur beyond 1990 will be mitigated by the
future highway system.

AUG 12 1981

intervals indicate that the significant differences in peak hour characteristics will result in an equalization and spacing of the traffic load on Kamehameha Highway and thus, further support the statement that Kamehameha Highway will have sufficient capacity to the year 1990.

COMMENT:

P 5-16

In our judgment, the proposed project will create an adverse traffic impact. Also, as stated previously, there are no plans to improve Kamehameha Highway to a 4-lane facility. Therefore, we cannot agree with the conclusion of the traffic impact statement.

RESPONSE:

Since highways must be designed to meet peak hour commuting demands and the peak hour volumes generated by the project will occur after the morning peak commuting hours and before the afternoon peak commuting hours for daytime shopping, and after both the morning and afternoon peak commuting hours for evening shopping, the project will not create an adverse impact.

The statement that there are no plans to improve Kamehameha Highway to a 4-lane facility is inconsistent and contrary to the 35 foot setback requested by the State Department of Transportation for highway expansion. The improvement to Kamehameha Highway will not be needed until sometime after 1990 and there will be sufficient time to budget and to prepare the necessary plans for the improvement of Kamehameha Highway.

COMMENT:

1. The proposed access to Kamehameha Highway is too close to Kahaluu Stream Bridge and has a dangerous sight-distance problem. We strongly recommend that access be provided via Waihee Road.

RESPONSE:

To facilitate traffic movement and to minimize traffic congestion it was planned that entrances and exits be located at both Kamehameha Highway and Waihee Road so as to distribute the traffic and not concentrate the traffic at the Waihee Road-Kamehameha Highway intersection. The location of the entrances and exits to Waihee Road will concentrate all of the traffic at the intersection and congest Kamehameha Highway.

The access on Kamehameha Highway is located more than 300 feet from the Kahaluu Stream Bridge and will not present a dangerous sight distance problem. Rather than provide the access via Waihee Road, it would be much more feasible and practical to move the access slightly towards the Kaaawa direction.

COMMENT:

P 5-13

Station 31-K should be corrected to read Station 31-V.

RESPONSE:

As requested, Station 31-K will be corrected to read Station 31-V.

COMMENT:

P 5-14

The source of traffic volumes (including the 1981 volumes) should be added to the report.

RESPONSE:

The source of the traffic volumes has already been included on page A-7 of the DEIS.

COMMENT:

P 5-15

We disagree with the statement that Kamehameha Highway under present conditions will have sufficient capacity to accommodate present as well as future traffic demands to the year 1990. Kamehameha Highway is already congested on weekends.

RESPONSE:

As already stated above, the capacity of Kamehameha Highway is explained in detail on page A-14 of the DEIS, and on the basis of the capacity analysis, it was concluded that Kamehameha Highway under present conditions will have sufficient capacity to accommodate present as well as future traffic demands to the year 1990.

Also, since critical traffic conditions occur on weekends, the consultant conducted traffic volume and turning movement counts at the intersection of Kamehameha Highway and Waihee Road for a 3 day weekend on June 5, 6 and 7, 1981 to determine the characteristics and variations in traffic flow on a Friday, Saturday and Sunday (page A-12 of the DEIS). The weekend traffic volumes and the proper spacing of the peak hour time

Mr. Fred Rodriguez

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August 11, 1981

COMMENT:

2. Traffic impact statement failed to consider intersection capacity at Waihee Road-Kamehameha Highway intersection and at the various intersection of access roads with the surrounding roadways.

RESPONSE:

The traffic impact of the project on the surrounding streets as well as the capacity analysis of the Waihee Road-Kamehameha Highway intersection are set forth in detail on pages A-13 and A-14 of the DEIS. On the basis of the capacity analysis, it was concluded that Kamehameha Highway under present conditions will have sufficient capacity to accommodate present as well as future vehicular demands to the year 1990. Waihee Road with a right of way width of 60 feet and pavement width of 40 feet will be adequate to meet not only present vehicular demands, but also future increases as well.

COMMENT:

3. The development must provide left-turn storage lanes at Waihee Road and at various access points to prevent additional congestion.

RESPONSE:

Unless there is excess pavement width, it is not practical and in fact, is extremely hazardous to provide a left turn storage lane in only one particular location and nowhere else along the entire length of roadway. The hazard is more pronounced during the evening hours when it is not only difficult to see the storage lane but is also unexpected by the motorist, especially on a highway with inadequate street lighting.

From a traffic standpoint, a roadway such as Waihee Road or Kamehameha Highway is safer without a storage lane. Furthermore, Waihee Road has a pavement width of 40 feet, sufficient for two lanes in each direction. The traffic volume is very light and a left turn storage lane is not necessary.

COMMENT:

4. The trip generation rates used in the report may have been greatly understated. The attached recent publication on this same matter may be helpful in your re-evaluation of trips rates.

Mr. Fred Rodriguez

-5-

August 11, 1981

RESPONSE:

A closer examination of the publication will show that the trip generation rate for a shopping center is only 443 trips per acre, considerably lower than the 600 trips per acre used in the traffic impact statement.

It should be pointed out that the fast food restaurant is only one of the establishments in the shopping complex and since the 600 trips per acre is applied to the entire shopping complex, the trip generation rate of 600 trips per acre is the highest for the shopping complex and is not greatly understated.

Sincerely yours,



Henry Tuck Au
Consulting Engineer

HTA:jmh



DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT

Kamamahu Building, 240 South King St. Honolulu, Hawaii - Mailing Address P.O. Box 2958 Honolulu, Hawaii 96804

GEORGE R. ARIYOSHI

HIDE TO KONO, Director

FRANK SRIVANNEK, Deputy Director

Environmental Communications, Inc.

Page 2

August 3, 1981

August 3, 1981

Ref. No. 3427

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

Dear Sir:

Subject: Draft Environmental Impact Statement Kahaluu
Commercial and Residential Development
TMK: 4-7-12:12 & 27

We have reviewed the subject draft EIS with respect to the objectives and policies of the Hawaii Coastal Zone Management Program and have the following comments to offer.

Scenic and Open Space Resources: Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

The proposed development site is currently an open space area somewhat unattractive because of its present use as a storage area for fill material. Although the proposed project would alter the site from an open space area to an urbanized area, architectural and design techniques can be applied to mitigate adverse visual impacts to some degree. The 115-foot buffer strip between the shopping center and the highway (pages 2-6, 2-7) will provide some mitigation of visual impacts as well.

Coastal Ecosystems: Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems.

The draft EIS is deficient in addressing impacts of sewage disposal and storm runoff in terms of coastal ecosystems, although it discusses the impacts with respect to water quality. In order to properly assess impacts on coastal ecosystems, an analysis of the marine life of the lagoon and Waiehe Stream should be included, and storm runoff and sewage disposal impacts should be discussed from a marine biology standpoint. This may involve retaining the services of a marine biology consultant to properly assess impacts on coastal ecosystems relative to the objectives and policies of the Hawaii Coastal Zone Management Program.

Other Concern

In the discussions of alternatives to the proposed action (pages 7-1 and 7-2) the primary reasons provided for ruling out alternatives relate to private profitability. We note that for the agricultural use alternative, discussion is limited to crop growing. This represents an incomplete treatment of this alternative since livestock and poultry production or aquaculture are generally included in the agriculture category. The final EIS should more fully address the agricultural use alternative particularly since agricultural uses are called for in the General Plan and the proposed development plans for this area.

We appreciate the opportunity to comment on this matter.

Sincerely,

Hideto Kono

AUG 06 1981

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 19, 1981

Mr. Hideto Kono, Director
Department of Planning and
Economic Development
August 19, 1981
Page 2

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

Dear Mr. Kono:

Subject: Draft Environmental Impact State for the Proposed
Kahaluu Commercial and Residential Development

We have received and reviewed your letter of August 3, 1981, on
the abovementioned Draft EIS. Below are dispositions to your comments:

14-31

Scenic and Open Space Resources. We concur with your comments.

Coastal Ecosystems. Impact on the water quality is expected to be
negligible; subsequently, impact on marine life in the stream and lagoon
should not be affected. A detailed analyses of marine life in the lagoon
and stream would prove too costly and lengthy for this EIS review.
Therefore, a review of water quality impact was undertaken and is felt
to sufficiently respond to the concerns on impact to the coastal ecosystems.

Wetlands. Based on the U.S. Army Corps of Engineers' documents, see
Reference 14 and 15, this area is not a swamp or wetland.

Other Concern. Agricultural alternatives such as livestock, poultry, and
aquaculture are not economically viable considering the market value of this
property. Other reasons why these agricultural alternatives are not viable
are:

- (1) the agricultural use of the site would conflict with the
surrounding residential and commercial uses;

- (2) aquaculture would place heavy demand on water required
to maintain such operations;
- (3) poultry and livestock operations will produce odors which
may be objectionable to surrounding residents.

We appreciate your comments and concern in these matters.

Very truly yours,



F. J. Rodriguez

cc: Mr. Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.
Austin, Tautoum & Associates, Inc.



University of Hawaii at Manoa

Water Resources Research Center
Holmes Hall 283 • 2540 Dole Street
Honolulu, Hawaii 96822

3 August 1981

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

Gentlemen:

Subject: Draft EIS Kahaluu Commercial and Residential Development, TRK: 4-7-12; 12, 27

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

1. P. 5-11, para 5.6.5 "...it is anticipated that the effluent's quality will be higher than the (Waihee) stream's water quality." This statement should be documented by analysis of Waihee stream water quality for comparison with anticipated on-site STP effluent quality.

2. Is this area subject to tsunami inundation?

This material was reviewed by WRRC personnel. Thank you for the opportunity to comment.

ETH:jm

cc: H. Gee
Y.S. Pok
P. Ekern

Sincerely,

Edwin T. Murabayashi

Edwin T. Murabayashi
EIS Coordinator

ENVIRONMENTAL
COMMUNICATIONS
INC.

August 19, 1981

F. J. RODRIGUEZ
PRESIDENT

Mr. Edwin T. Murabayashi, EIS Coordinator
Water Resources Research Center,
University of Hawaii at Manoa
Holmes Hall 283
2540 Dole Street
Honolulu, Hawaii 96822

Dear Mr. Murabayashi:

Subject: Draft Environmental Impact Statement for the Proposed
Kahaluu Commercial and Residential Development

We have received and reviewed your letter of August 3, 1981 on the abovementioned Draft EIS. The following responses are provided in regards to your comments:

1. Tertiary treatment provides sewage effluent of high water quality, even to the point of meeting drinking water standards. This being the case, the statement on page 5-11, "...it is anticipated that the effluent's quality will be higher than the (Waihee) stream's water quality." The quality of Waihee Stream was not tested but is assumed to be similar to the water quality within the lagoon.
2. Relating to tsunami inundation, the proposed project site is approximately 10 to 20+ feet above mean sea level. The tsunami inundation line is 4 feet above mean sea level; subsequently, the project site is not within a tsunami inundation zone.

Thank you for your comments and concern in this matter.

Very truly yours,

F. J. Rodriguez

F. J. Rodriguez

cc: Mr. Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.
Austin, Teutsumj & Associates, Inc.



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

800 HALEKUAHILA ST.
ROOM 201
HONOLULU, HAWAII 96813

August 6, 1981

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

Dear Mr. Rodriguez:

Subject: Environmental Impact Statement for the proposed
Kahaluu Commercial and Residential Development
TMK.4-7-12:12,27

We have reviewed the subject statement prepared under
the requirements of City and County Ordinance #4529 and offer
the following comments:

P. 2-8.

The source of fill material off-site that is necessary
to raise the site's elevation should be disclosed. The makeup
of this material should consider the potential for water
quality impacts on the lagoon and Kaneohe Bay.

P. 2-11.

Historic prospective should read historic perspective.

P. 3-1.

Existing land uses and zoning of the surrounding area
should be shown on a figure.

P. 5-18.

There should be a discussion on the site's potential
for aquaculture. This potential has been indicated by its
inclusion in the report, DPED "Aquaculture Development in
Hawaii."

P. 6-1.

Noise generated by the shopping center may affect the

F. J. Rodriguez
August 6, 1981
Page 2

proposed residential lots. There should be a discussion on
this topic.

P. E-6.

The preparation and review of this statement would fall
under item 3, since its primary purpose is to discuss potential
environmental effects of the project.

P. E-9.

A discussion of how a fast-food establishment is coastal
dependent is warranted. There is obvious disagreement, as
voiced by the Kahalu'u community about the suitability of
placing a commercial center at this location.

We would appreciate receiving two copies of the revised
statement for inclusion in the EIS Bibliographic Data Base
and our loaner library of EIS's.

Thank you for the opportunity to review this statement.

Sincerely,

Melvin Koizumi
Melvin Koizumi
Deputy Director

cc: Department of Land Utilization

AUG 10 1981

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

Mr. Melvin Kozumi, Deputy Director
Office of Environmental Quality Control
August 19, 1981
Page 2

August 19, 1981

Mr. Melvin Kozumi, Deputy Director
Office of Environmental Quality Control
Department of Health, State of Hawaii
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Mr. Kozumi:

Subject: Draft Environmental Impact Statement for the Proposed
Kahala Commercial and Residential Development

We have received your letter of August 6, 1981, commenting on the
abovementioned Draft EIS. Below, each of your comments are addressed.

P. 2-8 relating to off-site fill material. The off-site fill material will
likely be the material presently stockpiled on the project site. This
material was originally dredged from the bottom and sides of the lagoon.

P. 2-11. The term "historic prospective" will be corrected.

P. 3-1. The existing land uses and zoning are described and a figure
including this same information was found to be unnecessary.

P. 5-18. The site's potential for aquaculture will be discussed in the
alternative section.

P. 6-1. Noise from the shopping center, primarily vehicular noise,
should not be a significant or adverse problem, because:

- (1) the residential area is located away from the parking lot;
- (2) the building will act as a buffer from vehicular noises.

P. E-6. This will be noted in the Final EIS.

P. E-9. As indicated, the business zoning allows for such uses. While
the project is not dependent on a coastal environment, it is dependent on
the zoning to dictate the future uses. Consequently, it is felt that State
and County government must adjust land use policies and zoning so that
the policies are enforced through zoning. In this particular situation, the
overall policy conflicts with the site's present zoning.

We appreciate your comments and concerns in these matters.

Very truly yours,

F. J. Rodriguez
F. J. Rodriguez

cc: Mr. Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.
Austin, Teatsum & Associates, Inc.



University of Hawaii at Manoa

Environmental Center
Crawford 317 • 2650 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7361

Office of the Director

August 6, 1981

RE:0336

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

Dear Sir:

Draft Environmental Impact Statement
Kahaluu Commercial and Residential Development
Kahaluu, Oahu

The Environmental Center review of the above cited Draft EIS has been conducted by Donald Bell, Real Estate; Ken Lowry, Urban and Regional Planning; Jacquelin Miller, Garret Kawamura, and Robert Rowland, Environmental Center. We offer the following comments on this statement.

The Environmental Impact Statement Regulations of the State of Hawaii, Sub-Part E, 11-62c, state "Proposing agencies and applicants shall also identify, where appropriate, population and growth characteristics of the affected area and any population and growth assumptions used to justify the action and determine secondary population and growth impacts resulting from the proposed action and its alternatives." Sub-Part E, 11-62c is applicable to the proposed development and as such the subject has not been adequately addressed in the Draft EIS.

The maps included in the Draft EIS do not make possible an adequate review of the relationship of the property to other businesses, the lagoon, the fish pond, and the neighborhood. The residential subdivision map shows a 13,200 square feet park that is also referred to in Sec. 2.2(b). Who will own this park and who will maintain it? What other possible locations have been considered? Could it be swapped for a lot closer to the lagoon to lessen the possibility of residential flood damage? What additional costs will be incurred by purchasers of residential lots in the 100-year floodplain with regard to flood insurance or flood related structure design?

Could the proposed recreational easement/buffer strip location be defined and located on a map? What mitigating measures are under consideration with regard to the traffic flow problem referred to by Chief Keala in the letters section of the draft EIS? Various traffic flow designs for ingress/egress at the project site need to be included in the alternatives section of the revised EIS.

AN EQUAL OPPORTUNITY EMPLOYER

AUG 10 1981

Environmental Communications Inc.

August 6, 1981

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Section 4.3: General Plan etc.

The draft EIS mentions the discrepancy between the General Plan and the zoning for the site and cites the Supreme Court Decision in the Nuuanu sub-division case. Certainly a discussion of the seriousness of the requested change in the General Plan and its permanent, long-term effect on the Kahaluu community is highly appropriate. The discussion of the legal question of liability in downzoning which is "speculative" both in if it will occur and if there is a "loss" sustained by the Courts seems inappropriate in the Environmental Impact Statement. The Nuuanu case may be significantly different from the situation of the proposed Kahaluu development.

Section 2.3, Sub-section 6b: Proposed Infrastructure Improvements -- Sewage Treatment and Disposal

Where would the tertiary treatment plant be located? Where would the holding pond be located? Why has no allowance been made for this facility in the proposed site plans? If it is a viable alternative for sewage treatment and disposal then the necessary site plans and potential environmental effects on Waihee Stream need to be addressed in the revised EIS.

Section 2.5: Statement of Objectives

The fifth sentence in this section states "The applicants marketing analysis of the area indicated that there is a need for such a commercial center with the nearest comparable development (Temple Valley Shopping Center) located two miles away."

Is there a need for this commercial development in a predominantly rural area with Temple Valley only two miles away? The marketing analysis cited above for the commercial development or a sufficiently detailed summary of its findings, should be included as an appendix in the final EIS to provide the necessary documentation to support the stated "need for such a commercial center."

Section 5.1.1: Soils

Impacts on the wildlife and vegetation in and surrounding the lagoon should be addressed in a separate section. They are not appropriately covered under "soils". The proposed projects location in a Special Management Area indicates that such biological impacts deserve investigation and discussion in more depth.

Section 5.6.3: Drainage Impacts

If the parking area drainage system discharges into the lagoon, will the runoff of the accumulated motor oil deposits from 284 parking stalls have any effect on the water quality of the lagoon, after a rainfall?

Section 5.8: Socioeconomic Impacts

The second paragraph on p. 5-17 contains the statement - "The impact of the commercial development on the population is felt to be beneficial." What is the source of this statement and how is it justified?

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

August 19, 1981

Professor Diane C. Drigot, Acting Director
Environmental Center, University of Hawaii
2550 Campus Road, Crawford 317
Honolulu, Hawaii 96822

Dear Professor Drigot:

Subject: Draft Environmental Impact Statement for the Proposed
Kahala Commercial and Residential Project

Thank you for your letter of August 6, 1981, on the abovementioned
Draft EIS. Your comments have been reviewed and disposition to each
comment is provided below.

Population and growth characteristics. This subject is addressed on
page 5-15 of the Draft EIS. While it is not an in depth study, we find
that the general growth and population characteristics are identified in
this subsection.

The relationship of the property to other uses and the subdivision
park, flood insurance. The relationship of the property to the surrounding
land uses are shown in Figure 2, Site Analysis Map. The 13,200 square
foot park is being set aside to meet the Park Ordinance requirement.
It could possibly be swapped for a lot closer to the lagoon; this depends
on coordination with the Department of Parks and Recreation. No additional
costs because of flood insurance is foreseen; the flood study concludes
that flooding conditions will likely be alleviated for the proposed project
area (commercial and residential properties).

Proposed recreational easement, traffic flow problem. The details
of the recreational easement are yet to be delineated and drawn into the
project plans. The project architect has advised us that the easement
will be worked out between the developer, the Department of Parks and
Recreation, and other governmental agencies so that an easement will be
provided. The ingress/egress locations will be coordinated with the State
Department of Transportation, Highways Division. The traffic flow
concerns of the Police Department will be considered and it is possible
that the ingress/egress along Kamehameha Highway near the bridge
will be eliminated. There are not many other alternatives for the
traffic flow. Subsequently, the final design of the ingress/egress
locations will depend on coordination and approval by the appropriate
governmental agencies.

August 6, 1981

-3-

The fourth paragraph on p. 5-17 contains the statement "It is estimated that 173
jobs (75 percent of which will be full-time) will be created." How many of these jobs
are expected to be filled by local residents? If employees from other parts of Oahu will
be required, what demand for housing and services can be expected?

We appreciate the opportunity to provide these comments and look forward to your
response.

Sincerely,

Diane C. Drigot
Diane C. Drigot, Ph.D.
Acting Director

cc: OEQC
Donald Bell
Kern Lowry
Jacquelin Miller
Garret Kawamura
Robert Rowland

Professor Diane C. Drigot
Environmental Center, University of Hawaii
August 19, 1981
Page 2

Section 4.3: General Plan etc. It was felt that the Waianu case did provide a precedent in determining the significance of zoning versus the General Plan. Also, the importance of the zoning over the General Plan and draft Development Plans is relevant in this situation.

Section 2.3. Subsection 6b: Proposed Infrastructure Improvements-- Sewage Treatment and Disposal. At this time, the Alternate (a) has been selected for sewage collection and disposal. Had Alternate (b) been selected, the location of the tertiary treatment plant and holding pond would have been sited on the corner lot, at the intersection of Wahee Road and the subdivision access road.

Section 2.5: Statement of Objectives. The marketing analysis is a confidential document provided to the developer by the marketing company. A full disclosure of such a document in the EIS would be inappropriate. However, the compendium letter summarizing the findings will be included in the Final EIS document.

Section 5.1.1: Soils. Page 3-1 indicates that the site is cleared and sparsely covered with vegetation. Also, there is little fauna on the project site except for mice, rats, or mongoose. Subsequently, we would disagree with your comment that "biological impacts deserve investigation and discussion in more depth."

Section 5.6.3: Drainage Impacts. The drainage impacts are addressed in Gordon Dugan's report of storm water runoff in Appendix C of the EIS. Grease traps and other traps for larger wastes will be included in the drainage system to be provided as part of the proposed project.

Section 5.8: Socioeconomic Impacts. As stated two sentences below that statement: "The development will serve the present residential population." That is, the proposed commercial area will be closer to the existing residential community and lessen shopping trips, and provide a variety of consumer goods and services.

Professor Diane C. Drigot
Environmental Center, University of Hawaii
August 19, 1981
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Jobs. At this time, the location of the future employees cannot be predicted. However, it is logical to assume that many of the employees (over 60 percent) would likely be located in close proximity of their employment. Studies have shown that travel time and distance are important factors in employment location.

We appreciate your comments and concerns in these matters.

Very truly yours,



F. J. Rodriguez

cc: Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.
Austin, Tsutsumi & Associates, Inc.

The Sierra Club, Hawaii Chapter

Post Office Box 22897, Honolulu, HI 96822

Telephone: (808) 946-8494

August 6, 1981

Environmental Communications, Inc. AUG 07 1981

P.O. Box 536

Honolulu 96809

Dear Mr. Rodriguez:

The Hawaii Chapter of the Sierra Club wishes to comment *Miunuu Puli*, by Fuquar, on the Environmental Impact Statement of the Kahaluu Commercial and Residential Development.

In line with established club policies, the Sierra Club is particularly concerned about:

1. a commitment of 21,090 gallons of water per day (p.2-7) to a commercial development that is not needed by the community (Kahaluu N.B. comment). We feel that the State should have its Water Policy in place, including standards for minimum stream flow, before such a commitment is even considered. Decision on the Wahee Water Case is still pending in which farmers in the same area are trying to obtain sufficient water.

2. Run-off into the lagoon and subsequently into Kaneohe Bay. A tremendous amount of planning, work and money have gone into the lagoon and into cleaning up Kaneohe Bay. Run-off from black-top from auto pollution can be particularly hazardous, and would seem to be counter to the Hawaii Coastal Zone Management program.

3. the flood zone problem. This development plan proposes to solve the flood problem for the site only. There seems to be no studies done, nor solutions to the effect on surrounding areas during flooding. Such large developed and black-topped areas always affect water run-off in surrounding areas.

4. solution to the sewage problem. Inasmuch as the State Board of Health is presently proposing that the counties must be responsible for maintaining sewage facilities, this development may add to the tax burden of everyone. Proper sewage disposal is still unresolved for many present residents of Kahaluu. Shore-line sewage run-off is a problem. Proposed systems have not been properly tested and proven.

The analysis of the impact on the physical environment (p.1-2) as being "not significant or adverse" seems to be a narrow interpretation confined to the immediate site without consideration of the surrounding area.

Mabelo
Lola M. Mench, Regis. Chairman

ENVIRONMENTAL
COMMUNICATIONS
INC.

August 19, 1981

Ms. Lola M. Mench
Legislature Chairman
The Sierra Club, Hawaii Chapter
P. O. Box 22897
Honolulu, Hawaii 96822

Dear Ms. Mench:

Subject: Draft Environmental Impact Statement for the Proposed
Kahaluu Commercial and Residential Development

We have received and reviewed your letter of August 6, 1981 on the above-mentioned Draft EIS. The following responses are provided in regards to your comments:

1. Commitment of Potable Water. There is no potable water commitment to the proposed project (see page 5-8, subsection 5.6.1 in the Draft EIS). The final decision to provide potable water will be based on those concerns identified on page 13-19.
2. Run-off into the Lagoon. The impacts on the runoff into the lagoon are discussed in subsection 5.4 and Appendix C in the Draft EIS. The water runoff consultant, Gordon L. Dugan, has concluded:
"In general no significant storm water increases are expected from the development of the 15.3 acre project. Likewise, the slight increases in the nutrients, nitrogen and phosphorus, are considered insignificant. The suspended solids load should decrease as a result of the project. In terms of heavy metals, lead is the only constituent that apparently exceeds the limits that were established or recommended for drinking water. Lead should be steadily decreasing as more and more vehicles begin and continue to use unleaded gasoline. Biocides in present use are broken down in a relatively short period of time."

3. Flooding Impact on Surrounding Lands. There should be no adverse impact on the flooding of adjacent areas. As stated on page D-3 (conclusion of Flood Study):

Ms. Lola N. Mench, Legislature Chairman
The Sierra Club, Hawaii Chapter
August 19, 1981
Page 2

"The findings of this study show that the filling of the area within the 100-year flood limit (Exhibit B) will not adversely affect the floodway nor adversely increase the regulatory flood elevation; and therefore, should be defined to be within the flood fringe district. It is also proposed that all other areas of the development outside of the flood limit be graded such that they will be higher than the roadway of Walhee Road, the roadway of Kamehameha Highway, and the top bank of the lagoon to avoid unnecessary flooding."

4. Sewage Problems. No shoreline sewage effluent discharge is anticipated.

Thank you for your comments and concerns on this matter.

Very truly yours,



F. J. Rodriguez

cc: Mr. Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.
Austin, Teutsumi & Associates, Inc.

Glenn D. Beachy
47-410 Lulani Street
Kaneohe, Hawaii 96744

August 6, 1981

Mr. Rodrigues
Environmental Communications, Inc.
P.O. Box 536
Honolulu 96809

Dear Mr. Rodrigues:

This is in response to the Environmental Impact Statement on the proposed Kahalu'u Commercial and Residential Development. Reference is to the listing of probable environmental impacts. (p. 1-2)

We feel that the analysis of the impact on the physical environment as being "not significant or adverse" is a narrow interpretation confined to the immediate site without consideration of the surrounding area. Since the proposed commercial development represents a complete change of character for the area, there is a potential cumulative impact that will significantly affect the whole area. The "urban" zoning was accomplished over twenty years ago, without community input.

Legally the zoning takes precedence, but up-to-date planning and the wishes of the community should not be ignored. A commercial development is certainly not needed and indeed is being planned with an anticipation of growth. Housing is needed, but only affordable housing that is in keeping with the rural setting. This development will commit the whole area to an "urban" use, and as the EIS states will "foreclose the entire site for recreational uses". The community is short on recreational sites and facilities and had planned an expansion of the lagoon park. The land in question has a tax evaluation of \$400,000, and is presently assessed at 60% of that amount. Any other "intrinsic" value should not be recognized.

A decision in the Waiehe Water Case is still pending, in which farmers in the same area are trying to obtain sufficient water. Therefore, it makes no sense to commit 21,090 gallons of water per day (p.2-7) to an unneeded and unwanted commercial development.

We are also concerned with the solutions to the sewage problem which will be created. Sewage and sewage run-off into Kaneohe Bay are problems which have never

been completely solved. New proposed systems are untried.

Those of us who live in Kahalu'u are well aware of the flooding problems and object to this Development which proposed to solve the site problem only, while it will no doubt intensify the problem for the surrounding areas. Waiehe's Road was beginning to flood on the evening of August 4, after only a minor storm.

Thank you for your attention,

Miss. Paul D. Rappun

Marie F. Blackburn

Maggi Murch

Wendy K. Murch

Sharon Beachy

Martha Beachy

Martha Beachy

APP 101004

ENVIRONMENTAL
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F. J. RODRIGUEZ,
PRESIDENT

Mr. Glenn Beachy, et al
Kahaluu Commercial and Residential Project
August 19, 1981
Page 2

August 19, 1981

Mr. Glenn Beachy et al
47-410 Lulani Street
Kaneohe, Hawaii 96744

Dear Mr. Beachy:

Subject: Draft Environmental Impact Statement for the Proposed
Kahaluu Commercial and Residential Project

We have received and reviewed your letter of August 6, 1981, on the abovementioned Draft EIS. Because we have been unable to locate the addresses of the other signers of the August 6 letter, we hope that there will be an opportunity for you to have them also review this response.

Below, each of your concerns/comments have been addressed.

Narrow interpretation of impact on the physical environment.
We find that your comments in this paragraph identifies opposition to the project by certain members of the community. The EIS document has indicated that there is an economic analysis showing that a shopping center is viable for the area. The zoning is appropriate and the immediate surrounding uses along Kamehameha Highway are commercial. Finally, the appraisals of comparable parcels that are appropriately zoned (commercial) value the land (market value) at \$17.00 per square feet.

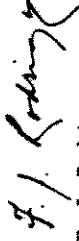
Commitment of potable water. The Board of Water Supply has not yet committed potable water to the proposed project. See page 13-19 in the Draft EIS.

Sewage concerns. At this time, the developer's engineering consultant has determined that the sewage generated by the proposed project should be transported to the Ahulmanu Sewage Treatment Plant for treatment and disposal. The Ahulmanu STP should have sufficient capacity to accept this additional amount of sewage. Appropriate approvals for the transmission line, the connection, and use of the STP will be obtained.

Flooding concerns. As indicated in the flood study, no flooding problems will be created by this project. (See pages D-1 through D-3 in the Draft EIS.) The flood control report has been accepted for the project by the Department of Public Works, City and County of Honolulu.

We appreciate your concerns on this matter.

Very truly yours,



F. J. Rodriguez

cc: Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates
Austin, Tsutsumi & Associates

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
850 SOUTH KING STREET
HONOLULU, HAWAII 96813-1001 (808) 523-4411



EILEEN R. ANDERSON
MANAGER

MICHAEL M. McELROY
DIRECTOR

81/SMA-24 (SM)

August 7, 1981

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

Dear Mr. Rodriguez:

Draft Environmental Impact Statement (EIS)
Proposed Kahaluu Commercial and Residential Development
Kahaluu, Koolauopoko, Oahu, Hawaii
Tax Map Keys: 4-7, 12, 12, 27

We have reviewed the above and offer the following comments:

1. Reference: Page 2-9.

Comment: Is the projected date of completion of the proposed City and County gravity sewer main along Wahee Road correct? Or should the statement read "the gravity sewer main along Wahee Road was recently completed"?

The narrative description and maps of how the site would tie into the public sewer system are unclear. Where would the sewer pump station be located? Once the wastewater is collected on-site and tied into the proposed gravity line, where would the force mains from the site to the Ahulimanu Sewage Treatment Plant be located? This is important, since the location of the lines would give an indication of what undeveloped urban lands might also benefit from installation of such a line. Is this plan in consonance with the Department of Public Works' (DPW) plans for the region?

2. Reference: Page 4-1.

Comment: The Detailed Land Use Map designations should be mentioned and shown in this section. In addition to commercial and residential designations, it should be noted that a portion of the site is designated for a sewage treatment plant. Additionally, we note that the DPW's preliminary engineering report for the Kahaluu Wastewater Treatment and Disposal System shows a portion of the site as a proposed wastewater treatment plant site. Has DPW indicated that this site is no longer needed for that purpose?

Mr. Fred J. Rodriguez
81/SMA-14
Page 2

This section should also note that the proposed Development Plan for Koolauopoko designates this site for agricultural use. The use is reflective of the 1977 General Plan Objectives and Policies for the area. Development of this site for commercial and residential use is in direct conflict with this land use policy.

The proposed Development Plans are a coordinated effort of the City Administration and residents in the area. These plans have been reviewed by the Planning Commission and are currently pending before the City Council, with an anticipated adoption date of October, 1981.

3. Reference: Page 5-9.

Comment: At the time the application for a Special Management Area Use Permit (SMP) is submitted for the project, a preliminary drainage plan must be submitted, delineating the drainage pattern, points-of-discharge and estimated quantities of runoff for the 100-year flood at the points of discharge.

4. Reference: Page 5-10.

Comment: At the time the SMP application is submitted, the exact alternative for sewage treatment and disposal must be specified, including preliminary plans which show the location and infrastructure of the system. If a sewage transmission line to the Ahulimanu Sewage Treatment Plant is constructed, would properties makai and mauka of the project site be allowed to connect to this line? Cumulative impacts of development could occur, as a result of this line. This should be discussed relative to the 1977 General Plan Objectives and Policies and Special Management Area Guidelines.

5. Reference: Page 5-13.

Comment: At the time the application is submitted for the SMP, all traffic and transportation system improvements must be specified, including any improvements to Kamehameha Highway or Wahee Road, such as additional lanes for turning movements.

AUG 10 1981

Mr. Fred J. Rodriguez
81/SMA-24
Page 3

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 19, 1981

6. Reference: Page 5-19.

Comment: The portion of the "Kahaluu Watershed, City and County of Honolulu, Hawaii, Final Environmental Impact Statement," April 1975, which shows how the archaeological reconnaissance study conducted by the Bishop Museum for that project relates to this proposed project site, must be appended to the Revised EIS document. This should be accompanied by a plan, which shows the location of the survey.

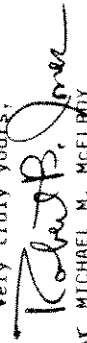
7. Reference: Page 13-11.

Comment: The Department of Parks and Recreation indicates that they have plans to utilize the banks of the lagoon which include parts of the parcel proposed for development. Page 5-12 of the Draft EIS indicates that "the major issue of providing a recreation easement has been resolved. How?

There is no indication as to how recreational easement would tie into the residential subdivision. The overall regional park plan should be included. This will permit the reader to relate the project to the overall park concept.

If you have any questions regarding the above, please contact Sampson Mar of our staff at 523-4077.

Very truly yours,


MICHAEL M. McELROY

Director of Land Utilization

MMM:sl

Subject: Draft Environmental Impact Statement for the Proposed Kahaluu Commercial and Residential Project

We have received and reviewed your letter of August 7, 1981, commenting on the abovementioned Draft EIS. Dispositions to each of your concerns are provided below.

1. Reference: Page 2-9. According to the Division of Wastewater Management, Department of Public Works, City and County of Honolulu, the proposed 8" gravity sewer line along Wahee Road will not be constructed until completion of the force mains and sewage pump stations (SPS #1 and #3) along Kamehameha Highway and Kahelkii Highway. (Refer to the Facility Plan for the Kahaluu Wastewater Treatment and Disposal System", by R. M. Towill Corp., January 1980, Fig. VI-7.) SPS #3, located near the Kamehameha Highway-Kahelkii Highway junction is expected to be in operation by January 1984, while SPS #1, along Kamehameha Highway is scheduled to be in operation by 1987. At that time, all sewage from the Kahaluu area will be pumped to the Ahulmanu Sewage Treatment Plant.

The sewage pump station for Alternate (a) will be located on the corner lot, at the intersection of Wahee Road and the subdivision access road. The applicant's force main will run along Kamehameha Highway and Kahelkii Highway within the State right-of way and carry sewage from the site to the Ahulmanu STP. (See Figure 4 attached.) Once the proposed City and County sewerage system for the area is completed and the 8-inch sewer line along Wahee Road constructed, the onsite gravity system will be connected directly into the 8-inch sewer line. At this time, the onsite sewage pump station could be removed and salvaged, and the force main could either be incorporated into the overall sewerage system or abandoned in place.

2. Reference: Page 4-1. According to the Department of Public Works, the proposed wastewater treatment plant next to the Kahaluu Elementary School and Community Center as designated on the detailed land use map has been deleted. The proposed sewerage system under the "Facility Plan" for the Kahaluu area will be implemented.

Mr. Michael M. McElroy, Director
Department of Land Utilization
August 19, 1981
Page 2

3. Reference: Page 5-9. Refer to the "Proposed Kahaluu Shopping Center Flood Study and Preliminary Drainage Report" by Austin, Tautoumi & Associates, Inc., April, 1981. This report has been accepted by the Department of Public Works and will be submitted to the City Council at the time of application for the Shoreline Management Area permit. It is noted that only a portion of the report has been included as Appendix D in the Draft EIS.

4. Reference: Page 5-10. The applicant's force main will be sized to handle sewage flow from the proposed shopping center and residential development, and will be dedicated to the City and County of Honolulu upon completion. The Department of Public Works would have to decide, at that time, whether other properties would be allowed to connect to this line.

5. Reference: Page 5-13. We concur with your comment that: "At the time the application is submitted for the SMP, all traffic and transportation system improvements must be specified, including any improvements to Kamehameha Highway or Wahee Road, such as additional lanes for turning movements."

6. Reference: Page 5-19. The archaeological study prepared for the Kahaluu Watershed will be wholly or partly appended to the Final EIS document. If possible the plan showing the location of the surveyed area will also be included.

7. Reference: Page 13-11. The statement that the issue was resolved is based on the developer's position that if the project is implemented a recreational easement will be provided. However, the actual details of the recreational easement is yet to be delineated and drawn into the project plans. The project architect has advised us that the easement will be worked out between the developer, the Department of Parks and Recreation, and other governmental agencies so that an easement will be provided. This being the case, the overall regional park plan in the EIS document would not appear to be necessary.

Very truly yours,



F. J. Rodriguez

Enclosure

cc: Hiram L. Fong, Sr.
Wong, Sueda & Associates, Inc.
Austin, Tautoumi & Associates, Inc.

HUI MALAMA AINA O 'KOOLAU

August 7, 1981
Page 2

August 15, 1981

(NOTE: The date is incorrect; the letter should have the correct date of August 7, 1981)

Mr. Michael M. McElroy, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

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

Re: Kahalu'u Commercial and Residential Development
Tax Map Key: 4-7-12-12, 27
Comments on Draft Environmental Impact Statement

Dear Sirs:

Hui Malama Aina O Ko'olau asked that it be a consulted party in the preparation of the Environmental Impact Statement. Our letter is included at page 13-4 of the Draft EIS. In spite of that request, Hui Malama Aina O Ko'olau has never been consulted regarding this project. Thus, Table 4 on page 13-3 of the EIS is in error where it lists Hui Malama Aina O Ko'olau as a consulted organization. Nevertheless, we are submitting our comments regarding the inadequacy of the Draft EIS by this letter.

FAILURE TO ADDRESS SOCIO-ECONOMIC IMPACTS

The Environmental Impact Statement Regulations adopted by the Environmental Quality Commission require at 1:31 that the EIS address several significance criteria. The regulation requires as follows:

In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, and expected consequence, either primary or secondary or the cumulative as well as the short or long-term effect of the action. All agencies should bear in mind that in most instances the following factors of an action, although not limited to same, may constitute a significant effect on the environment when the action:

4. substantially affects the economic or social welfare of the community or state;
5. substantially affects economic or sociological activities; 6. involves substantial secondary impacts, such as population changes or effects on public facilities;

* * *

8. is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.

* * *

11. affects an environmentally sensitive area such as a flood plain, erosion-prone area, fresh water, or coastal waters.

These factors indicate that the social and economic impacts, or secondary impacts, of a project must be considered. The EIS is completely defective in analyzing the impact on this community as a result of the Market City Project.

The EIS acknowledges that the land values of neighboring properties will increase. However, it fails to determine whether or not the neighboring residents will be adversely affected by an increase in property taxes or an increase in rents. Furthermore, the EIS fails to address the question of whether the increase in land values will make housing more expensive in the area and less affordable for local residents.

The EIS states at page 1-2 that "the growth of the Kahalu'u area has been significant in the past ten years and further growth is anticipated as the number of residential units continue (sic) to increase in the area." The EIS acknowledges that the project is inconsistent with the General Plan and proposed Development Plans which call for maintaining the area in a rural and/or agricultural setting. The Oahu General Plan calls for very limited population growth in this part of Windward Oahu; further urbanization is inconsistent with the goal of limiting such growth. The fact that growth has been significant in the past ten years makes it even more important that projects of this type not be permitted in the Special Management Area when they will disrupt the planning goals of the County. This conflict is not addressed in the EIS in an adequate manner.

* * *

AUG 10 1981

At page 13-21 of the Draft EIS, a letter from the Department of Agriculture pointed out that:

"The EIS should address any potential impacts the project might have on the taro farms and other agricultural activities located in the area. Specifically, consideration should be given to increased property values, nuisances, and increased pressure to urbanize lands which are currently being used or potentially could be used for agriculture. This should not be limited to just the land adjacent to the subject parcels, but should include lands further mauka which could be affected by spinoff or subsequent urbanization."

Nowhere in the final EIS are the potential impacts on the agriculture of the area addressed. This is a fatal oversight.

In a letter from the Department of Public Works, included at page 13-14 of the Draft EIS, a suggestion is made that if an onsite collector system is used, provision should be made to tie the system into the proposed gravity sewer located beneath Waiehe Road. If the sewer line located in Waiehe Road becomes operable by connection to the Ahuimanu Sewage Treatment Plant, then all of the land adjacent to Waiehe Road will be subject to residential development due to the availability of sewage disposal facilities. The growth impact of extending the sewer system into this area has not even been mentioned in the Draft EIS. The stimulus that this action would provide for additional housing in the area must be analyzed as a part of the cumulative impact of this project.

FAILURE TO ADEQUATELY ADDRESS CONSISTENCY WITH LAND USE PLANNING

The EQC regulations for the preparation of an EIS require at 1:42d as follows:

The relationship of the proposed action to land use plans, policies and controls for the affected areas. Discussion of how the proposed action may conform or conflict with objectives and specific terms of approved or proposed land use plans, policies, and controls, if any, for the area affected shall be included. Where a conflict or inconsistency exists, the statement shall describe the extent to which the agency or applicant has reconciled its proposed action with the plan, policy or control, and the reasons why the agency

or applicant has decided to proceed, notwithstanding the absence of full reconciliation.

The EIS fails to satisfy this requirement because it does not even attempt to describe the extent to which the applicant has reconciled its proposed action with the General Plan and the proposed Development Plan for the area. Neither has the applicant stated its reasons why it has decided to proceed notwithstanding the absence of full reconciliation. Without meeting these requirements, the EIS is legally inadequate.

FAILURE TO ADEQUATELY ASSESS TRAFFIC IMPACTS

The analysis on the traffic impacts of the project is also defective. The study done on the traffic impact concludes that there has been a decline in automobile traffic adjacent to the site on Kamehameha Highway of more than 20% between 1976 and 1981. The report attributes this decline in travel to the rising cost of transportation and the decline in tourist travel. However, the conclusion that traffic levels have actually declined is based on a study which was conducted for a period of only three days. In fact, the figure used by the consultant is the traffic total for only one day out of the year. From a statistical analysis point of view, a sampling of two or three consecutive days cannot be used to extrapolate from that sampling to determine the average or peak traffic volumes for an entire year. We are not told whether the days sampled were unusual compared to the rest of the year, what the weather conditions were on that day, or any other unusual events which might have affected traffic flow.

Additionally, given that the goal of the General Plan and the Development Plans is to allow only very limited population growth on the windward side, it is not reasonable to assume that traffic along Kamehameha Highway will increase to a level which will require a widening of Kamehameha Highway to four lanes by 1990. In fact, the study on which the Draft EIS relies was prepared in 1972 prior to the adoption of the General Plan in 1977 and prior to the 1978 revision downward in the projected population for Oahu by the year 2000. The Draft EIS completely fails to take into account these planning devices and population projections. Thus, the traffic impact of this project and its impact on existing traffic service on Kamehameha Highway has not been adequately evaluated. It is not rational to assume that the Kamehameha Highway will be widened in 1990, given current growth and planning objectives for the windward side.

The traffic study is also inadequate because it fails to adequately address the traffic hazards associated with the Market

City Project. One of the entrances to the project is proposed to be located on Kamehameha Highway on the Kaneohe side. This would mean that cars would be turning onto or off of Kamehameha Highway adjacent to the recently completed bridge over the Flood Control Lagoon. No discussion is given as to the hazards of cars pulling out into traffic or stopping on the highway where visibility is obscured by those coming over the bridge until they reach the top of the bridge. Furthermore, there is no left turn lane for traffic to turn left from Kamehameha Highway onto Waihe'e Road, nor is there any traffic light to control that intersection. These hazards and mitigation options are not addressed at any point in the Draft EIS.

Also, the traffic studies fail to indicate whether or not the existing bridge across the lagoon which was just completed is adequate to handle four lanes of traffic safely if the highway is widened. At present, the bridge is designed only for two lanes of traffic plus bicycle and pedestrian use. No analysis of the impact of the widening of Kamehameha Highway or the traffic increase on the bridge design is included.

THE EIS IS PREMATURE

At page 4-3, the Draft EIS indicates that details regarding sewage treatment and disposal and the public recreational uses of the buffer area will not be finalized until after the EIS process is completed. This is simply not adequate. The purpose of an environmental impact statement is to inform decision makers about the impacts of proposed actions. It is impossible for the City Council to determine whether or not there will be any significant adverse environmental or ecological effects of the proposed action regarding sewage treatment and public recreational uses until they are informed as to the developer's plans. Without such a determination, a special management area use permit cannot be granted under the requirements of Hawaii Revised Statutes § 205A-26(2). Section 205A-26(2) requires that the City Council make a finding as to whether the project will have significant environmental impacts. Accordingly, the EIS cannot be finalized until details of sewage treatment and recreational use in the buffer area are addressed in the EIS.

THE EIS FAILS TO ADEQUATELY ASSESS THE ALTERNATIVES

The EOC regulations for the preparation of an EIS also require that the applicant discuss the alternatives to the proposed action. Regulation 1: 42g sets out this requirement and includes the following:

A rigorous exploration and objective evaluation of the environmental impacts of all reasonable alternative actions, particularly those that might enhance environmental quality or avoid or reduce some or all of the adverse environmental benefits, costs and risks shall be included in the agency review process in order not to prematurely foreclose options which might enhance environmental quality or have less detrimental effects. In each case, the analysis shall be sufficiently detailed to allow the comparative evaluation of the environmental benefits, costs, and risks of the proposed action and each reasonable alternative.

The EIS discussion of the alternatives to the proposed action is contained at pages 7-1 and 7-2. This discussion includes one paragraph on recreational use and one short paragraph on agricultural use. The conclusory statements made in these paragraphs fall far short of the required "rigorous exploration and objective evaluation" and the requirement that the "analysis shall be sufficiently detailed to allow the comparative evaluation" of the alternatives.

The discussion of the recreational use alternative does not even mention the environmental impacts of such a use or discuss the beneficial effects on the environment as compared to the commercial and residential developments proposed. Thus, the discussion of the recreational use alternative fails to meet the requirements of the EOC regulations.

Similarly, the only discussion of the environmental effects of agricultural use is the "probability of heavy erosion and irrigation runoff from agriculture activities." Absolutely no data is set forth nor is any analysis provided which would lead to the conclusion that there would be heavy erosion or runoff problems. Indeed, this site is presently vacant except for large piles of dredged material which has been stored on the site for many months. No discussion of the property in its undeveloped state is included which would lead to any conclusion that there is a serious erosion problem on this site. Furthermore, there is no discussion of agricultural management practices used by good farmers which would prevent any kind of erosion or runoff problem.

The only reasons given in the Draft EIS for rejecting park use or agricultural use of the property are that the developer would not be taking advantage of the zoning of the property and

August 7, 1981
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that the developer could get a higher rate of return from a commercial and residential development. The Draft EIS consistently refers to the high cost of the land rendering the alternative uses unfeasible. However, no actual data is given as to the cost of the land paid by the current owners, or of its market value. In fact, materials submitted by the Kahalu'u Neighborhood Board indicate that the property was purchased at the price of \$8,000 per acre and that under the current tax assessment valuations, the property is worth \$16,000 per acre. These costs and values would indicate that the property value is not so high that it is not usable for agriculture or that the land could not be acquired by the City for park purposes at a reasonable price. Certainly the owners would not take any loss on their investment in the property under either of these alternatives. Yet, there is absolutely no discussion of the economics of the park or agricultural use alternatives.

CONCLUSION

The EIS in its present form is totally inadequate to meet the requirements of the Environmental Quality Commission regulations. It fails to discuss the secondary social impacts of this project as a growth generator in the Kahalu'u area, it fails to adequately address the traffic impact of the project, and it fails to even begin to consider the alternatives to this proposal. As such, the EIS is inadequate and cannot be accepted as final.

Sincerely,



John Reppun, Vice President
HUI MALAMA AINA O KO'OLAU

ENVIRONMENTAL
COMMUNICATIONS
INC.

August 19, 1981

Hui Malama Aina O 'Koolau
c/o Mr. Melvin D. Kalahiki, President
45-422 Koa Kahiko
Kaneohe, Hawaii 96744
Dear Mr. Kalahiki:

Subject: Draft Environmental Impact Statement for the Proposed
Kahaluu Commercial and Residential Project

On August 10, 1981, we received a letter signed by John Reppun of your organization commenting on the above-mentioned Draft EIS. Since we have no other address for your organization, we are providing you with the response for your organization's review.

We regret that the Hui Malama Aina O 'Koolau was not provided a copy of the Draft EIS. Normally, we, as the preparers of the EIS document, advise the Department of Land Utilization to send out the copies of the Draft EIS to those organizations that requested consulting party status.

Failure to address socio-economic impacts. The section quoted relates the significance criteria for determining if an action is significant. (Subsequently an EIS would be required.) In this case, the determination was made that the action was significant and an EIS was required. The amount of increase in property value and increase in rents is not predictable. There is no exact method of determining the amount of impact on land values and rents on adjacent properties. Many other factors such as zoning, land use, and overall island land values, appear to be the important factors to this aspect. Because such information is very difficult if not impossible to prepare, we know of no other EIS which quantifies the impact of a project on surrounding land values and rent increases. Your letter states that "projects of this type (will) not be permitted in the Special Management Area when they will disrupt the planning goals of the County...". We find that this statement is incorrect. If the project had no change of obtaining the SMA permit, the developer would not have retained consultants to prepare plans and documents for the proposed action. Your letter states: "Nowhere in the final EIS are the potential impacts on the agriculture of the area addressed. This is a fatal oversight." First, it should be noted that the document is a Draft EIS, not a final EIS, secondly, pages 5-18, 5-19, 7-2, and 13-21, discuss the project's potential impact on agriculture.

Hui Malama Aina O 'Koolau
c/o Mr. Melvin D. Kalahiki
August 19, 1981
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At this time, the alternative to transport the project's sewage, via a transmission line, to Ahumahu Sewage Treatment Plant (STP), has been selected. The developer intends to install that line in accordance with the Department of Public Works' plans. It is not the intent of the developer to provide a sewer line to adjacent properties; however, the Department of Public Works may stipulate hook-ups (other than the proposed project) to the transmission line.

Failure to adequately address consistency with land use planning. The applicant is proceeding with the proposed project because the project site is zoned for commercial uses. This will be so stated in Section 4. Because the draft Development Plan for the area is in conflict with the site's zoning, a "full reconciliation" of the continuance of the project with the draft Development Plan and the zoning, is impossible. That is, the project conforms with the zoning, but is not consistent with the draft Development Plan. This is so noted in Section 4.

Failure to adequately assess traffic impacts. (Your comments on traffic were reviewed and evaluated by the traffic consultant, Henry I. Au. The traffic consultant's responses to your comments are provided below.) Continuous counting stations are maintained by the State Department of Transportation and from the traffic volume counts obtained at these stations taken for several or more years, time variations in traffic flow such as seasonal, weekly and daily time patterns of traffic flow, are measured and established, making it possible to conduct traffic volume counts at any time of the year and still be able to convert these traffic volumes to average daily traffic and peak hour volumes.

The measurements taken at these counting stations for several years indicate that traffic on Oahu is so consistent throughout the year that variations in traffic flow are minor and insignificant. Thus, traffic may be sampled at any time of the year and still be accurate in determining the average or peak traffic volumes for an entire year.

It should be emphasized that public goals change over time and there can also be marked changes with a political administration change. Since highway facilities are more permanent than land uses, traffic projections should be high for sound planning so that the highway system will be able to accommodate changing requirements and unpredictable future land uses. There is, therefore, the necessity to plan for the 4-lane highway beyond 1990, taking into consideration social and economic consequences, vacant land in the area and growth in the resort industry.

Hui Malama Aina O Koolau
c/o Mr. Melvin D. Kalahiki
August 19, 1981
Page 3

The potential traffic hazards associated with the project, the location of the entrance on Kanehameha Highway on the Kaneohe side, the provision of left turn storage lanes and signalization of the intersections have all been taken into consideration in the planning and design of the project.

The entrance on Kanehameha Highway on the Kaneohe side is located more than 300 feet from the bridge and will not present a serious hazard or sight distance. As for storage lanes, unless there is excess pavement width, it is not practical and in fact, is extremely hazardous to provide a left turn storage lane in only one particular location and nowhere else along the entire length of the roadway. The hazard is more pronounced during evening hours when it is not only difficult to see the storage lane but is also unexpected by the motorist, especially on a highway with inadequate street lighting.

Analysis of the traffic volumes on the street system indicates that signalization is not warranted even for weekend traffic. Since signalization is not warranted, the discussion on signalization was omitted from the Traffic Impact Statement.

The existing bridge across the lagoon was designed only for two lanes of traffic and should Kanehameha Highway be widened, another 2 lane bridge parallel and adjoining the existing bridge will be constructed so as not to disrupt the traffic on the existing bridge.

The EIS is premature. Your comments are incorrect. The EIS document specifically contains a section (Section 10) in which unresolved issues can be discussed along with how these issues will be resolved. At this time, the plans call for the sewage to be transmitted to the Ahulimanu Sewage Treatment Plant for treatment and disposal. The final disposition of the sewage collection and disposal and the recreational buffer area will be resolved prior to the Shoreline Management Area Permit being granted. This will be noted in the Final EIS.

The EIS fails to adequately assess the alternatives. Because of the economic non-viability of the identified actions, these alternatives, for the most part, were not considered "reasonable" as stated in the EIS Regulations. A lengthy discussion on such alternatives is unnecessary especially since the developer does not find these alternatives feasible.

The severe erosion problem caused by agricultural crop use is well-documented in various references and texts. Specifically, the Hawaii Environmental Simulation Laboratory (HESL) conducted several scenario alternatives for the Kaneohe Bay area. The agricultural scenario proved to be the most detrimental on the Bay's water quality.

Hui Malama Aina O Koolau
c/o Mr. Melvin D. Kalahiki
August 19, 1981
Page 4

The present appraisals of comparable parcels that are appropriately zoned (commercial) value the land (market value) at \$17.00 per square foot. The developer would indeed be taking a considerable loss if the property is used for other than the commercial/residential use identified in the EIS.

While your organization concludes that the EIS is inadequate, we find that all your concerns have been discussed in the EIS document. We appreciate your comments and concern on this matter.

Very truly yours,



F. J. Rodrigues

cc: Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.
Austin, Tsutsumi & Associates, Inc.

BARRY PROPERTY MANAGEMENT

TEMPLE VALLEY
47-388 HUI IWA STREET
KANEOHE HAWAII 96744
TELEPHONE (808) 739-9268

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ
PRESIDENT

August 19, 1981

August 10, 1981

Ms. Nancy Cathey, Manager
Temple Valley Shopping Center
Barry Property Management
47-388 Hui Iwa Street
Kaneohe, Hawaii 96744

Dear Ms. Cathey:

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

Subject: Draft Environmental Impact Statement for the Proposed
Kahaluu Commercial and Residential Project

Dear Ms. Toyama:

As a representative of the owners of Temple Valley Shopping
Center in Kahaluu, I have studied your EIS and the comments
included in the packet.

I wish to go on record as supporting the position taken by
the Kahaluu Neighborhood Board.

Thank you for your effort in putting together this report.

Best regards,

Nancy Cathey
Nancy Cathey, Manager
Temple Valley Shopping Center

NC:js

Enclosure

cc: Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.

Thank you for your letter of August 10, 1981, on the abovementioned
Draft EIS. Because you supported the position of the Kahaluu Neighbor-
hood Board, we felt that you should receive a copy of our response to
their comments.

We appreciate your concern in this matter.

Very truly yours,

F. J. Rodriguez
F. J. Rodriguez

AUG 13 1981

GEORGE A. RITOSH
GOVERNOR



JACK K. SUMA
CHAIRMAN, BOARD OF AGRICULTURE

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

August 13, 1981

MEMORANDUM

To: Environmental Communications, Inc.
Subject: Draft Environmental Impact Statement
Kahaluu Commercial and Residential Development
THK: 4-7-12: 12, 27 Kahaluu, Oahu

The Department of Agriculture has reviewed the subject draft and offers the following comments.

We question your statement #3 (page 13-21) in response to our comments of June 15, 1981. While the site itself is presently unused and there are no agricultural activities, except perhaps occasional grazing, adjacent to the site, there are agricultural activities approximately 200-300 feet mauka between the branch in Wahee Stream and Ahilama road. These activities consist of taro farming and some grazing. Many other activities exist further mauka of Ahilama Road as alluded to in your response to Life of the Land on page 13-9.

While the zoning has been urban for several years, it has not yet resulted in the urban center once envisioned. The City and County of Honolulu and the residents of Kahaluu are attempting to maintain a rural-agricultural environment for the area as evidenced by the General Plan and the proposed Development Plans. If a number of landowners decide to "beat the clock", the option for a rural-agricultural environment will be precluded.

We note that the EIS uses the zoning designation as justification for the inappropriateness of other alternative, the high cost of the land, and the lack of impacts on existing agricultural activities in the area. The contention that "the urbanization of properties is based on the zoning" and that "subsequently, it is the zoning which is the primary cause for urbanization" (statement #4 page 13-21) is debatable. The applicant's choice not to take advantage of the existing zone before now is an indication that much more is involved (market demand and conditions, land value, etc.). In areas which are zoned for urban activity, that activity has not always occurred, and conversely, in areas where

Environmental Communications, Inc.
Page - 2 -
August 13, 1981

urban type zoning does not exist, urbanization has not been precluded since zoning changes are possible.

The report states (pages 1-2 and 5-17) that "the value of the surrounding properties will likely increase because of the commercial/residential use of the project site." While the property value is already higher for a residential and/or commercial zoned parcel of land than for an agricultural parcel, the realization of the parcel's highest potential (as currently zoned) will result in further increases in the property values of surrounding lands. This will result in intensified pressures to urbanize the surrounding lands due to increased property taxes, increased lease and sale values, and desires by other landowners not to "miss out" if zoning changes do result from the General Plan and proposed Development Plans' agricultural designation for the area.

Such a development may also result in pressures from new residents to eliminate nuisances (odors, flies, noises, etc.) caused by agricultural activities in the area. Farmers could also suffer from increased theft and vandalism.

We believe these concerns should be addressed in the EIS.

Thank you for the opportunity to comment.

Jack K. Suma
Jack K. SUMA, Chairman
Board of Agriculture

cc: DLU

ENVIRONMENTAL
COMMUNICATIONS
INC.

F. J. RODRIGUEZ,
PRESIDENT

August 19, 1981

Mr. Jack K. Suwa, Chairman
Board of Agriculture
1428 South King Street
Honolulu, Hawaii 96814

Dear Mr. Suwa:

Subject: Draft Environmental Impact Statement for the Proposed
Kahaluu Commercial and Residential Project

We have received and reviewed your letter of August 13, 1981 on the abovementioned Draft EIS. We note that your letter was received on the 17th of August, 10 days after the deadline for comments. However, we feel that your comments are important and should be responded to and incorporated into the Final EIS.

Many of your comments are position statements of the Department of Agriculture. These statements will be included in the text of the EIS. However, because they are position statements, no dispositions to paragraphs 2, 3, 4, and 6 are necessary.

Relating to land values increasing in the surrounding areas, we note that there is no exact method of determining the amount of impact on land values and rents on adjacent properties. Many other factors such as zoning, land use, and overall island land values, appear to be the important factors leading to increase/decrease in property values.

We appreciate your comments and concerns on this matter.

Very truly yours,



F. J. Rodriguez

cc: Hiram L. Fong, Sr.
Department of Land Utilization
Wong, Sueda & Associates, Inc.



15. REFERENCES

1. U.S. Army Corps of Engineers, Pacific Ocean Division, Environmental Factors of Kaneohe Bay Region, (prepared by Fowler, Bergman and Associates, Inc.), June 1973.
2. Department of Geography, University of Hawaii, Atlas of Hawaii, 1973.
3. Department of Planning and Economic Development, State of Hawaii, The State of Hawaii Data Book 1980; A Statistical Abstract, November, 1980.
4. City and County of Honolulu, General Plan; Objectives and Policies, Exhibit A Resolution No. 238, January 18, 1977.
5. City and County of Honolulu, Draft Development Plan for the Koolaupoko District.
6. Department of Land and Natural Resources, State of Hawaii, (Draft) State Recreation Plan, September, 1980.
7. Department of Land and Natural Resources, State of Hawaii, (Draft) State Water Resources Development Plan and Technical Document, September, 1980.
8. Various State agencies, State Functional Plans (Drafts).
9. State of Hawaii, Hawaii State Plan.
10. Land Study Bureau, University of Hawaii, Detailed Land Classification - Island of Oahu, December, 1972.
11. U.S. Department of Agriculture, Soil Conservation Service, 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, August 1972.
12. U.S. Department of Agriculture, Soil Conservation Service, "Kahaluu Watershed, City and County of Honolulu, Hawaii; Final Environmental Impact Statement," April, 1975.
13. Department of Planning and Economic Development, State of Hawaii, State Comprehensive Outdoor Recreation Plan, Technical Report, (prepared by Aotani & Hartwell Associates, Inc.), December, 1975.
14. U.S. Army, Engineer District, Honolulu, "An Ornithological Survey of Hawaiian Wetlands," (prepared by Ahuimanu Productions), December, 1977.

15. U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, "Wetlands and Wetland Vegetation of Hawaii," (prepared by Margaret E. Elliott and Erin Marie Hall), September, 1977.
16. Research and Economic Analysis Division, Department of Planning and Economic Development, State of Hawaii, "The Population of Hawaii, 1980: Final Census Results," Statistical Report 143, March 18, 1981.
17. John Child & Company, Inc., "Compendium Letter Covering the Proposed Kahaluu Shopping Center (A Proposed 96,000 square feet Neighborhood Shopping Center)," May 22, 1981.
18. Austin, Tsutsumi & Associates, Inc., "Proposed Kahaluu Shopping Center Flood Study and Preliminary Drainage Report, Kahaluu, Koolaupoko, Oahu, Hawaii," April, 1981.
19. Hawaii Revised Statutes, Chapter 205-A.
20. Root, Barry D., "Air Quality Study for the Proposed Kahaluu Commercial and Residential Development," June, 1981.
21. Devaney, Dennis M. et al, Kaneohe: A History of Change (1778-1950), Department of Anthropology, Bernice P. Bishop Museum, September, 1976.
22. Au, Henry T., "Traffic Impact Statement for Kahaluu Commercial Project," June, 1981.
23. Dugan, Gordon L., "Environmental Aspects of Storm Water Runoff, Kahaluu Commercial and Residential Development," June, 1981.
24. Department of Land and Natural Resources, State of Hawaii, The Hawaii Register of Historic Places, 1974, 1974.
25. Sterling, Elspeth P. and Catherine C. Summers, Sites of Oahu, Department of Anthropology, Bernice P. Bishop Museum, Honolulu, 1978.

APPENDIX A

TRAFFIC IMPACT STATEMENT
FOR
KAHALUU COMMERCIAL PROJECT
KAHALUU, OAHU, HAWAII
TAX MAP KEY: 4-7-12; 12 & 27

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Prepared By
HENRY TUCK AU, Consulting Engineer
33 S. King Street
Suite 507
Honolulu, Hawaii 96813

June 1981

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SUMMARY

1. The proposed Kahaluu Commercial & Residential Project is located in Kahaluu, Oahu on approximately 15.3 acres of land at the intersection of Waihee Road and Kamehameha Highway and is identified by Tax Map Key 4-7-12: 12 and 27.
2. The tentative proposal for the project is to construct a commercial retail complex of 4 single story buildings with street level parking on the B-2 Community Business District portion of the site and a 21-lot single family residential subdivision on the mauka Residential District portion of the site.
3. Kahekl1 Highway merges with Kamehameha Highway approximately 1,400 feet south of Waihee Road and consequently, is the only major arterial serving the project under the existing highway system.
4. Kamehameha Highway will remain as the only major arterial serving the project site under both the existing and future highway systems, except that Kamehameha Highway must be improved to higher standards and designs for future traffic volumes. The future highway system will mitigate at a future time any possible undesirable traffic congestion.
5. In 1976, the traffic volume on Kamehameha Highway at Station 31-K was 12,294 vehicles. By 1979, the traffic volume increased to 15,123 vehicles. However, in 1981, the traffic volume showed a considerable reduction from the 1979 volume of 15,123 vehicles to 11,965 in 1981, a decrease of 3,158 vehicles or 20.88 per cent. The reduction in traffic volume may be attributed to the rising cost of transportation and to the decline in tourist travel.
6. For the weekend traffic on Kamehameha Highway at Waihee Road, the 12 hour volume from 6:00 a.m. to 6:00 p.m. is the highest on a Saturday and the lowest on a Friday, whereas on Waihee Road, the 12 hour volume is the highest on a Friday (a weekday) and the lowest on a Sunday.
7. The peak hour time intervals for the weekend traffic on Kamehameha Highway and Waihee Road occur on different hours of the day and there is not the conflict or overlap of peak hour volumes with those of either Waihee Road or Kamehameha Highway. The significant differences in peak hour characteristics result in an equalization and spacing of the traffic load on Kamehameha Highway and thus, will not substantially affect the capacity of Kamehameha Highway.
8. Waihee Road is a secondary street with a right of way width of 60 feet and pavement width of 40 feet. For a secondary street with a right of way width of 60 feet with no parking and at grade intersection, the capacity is approximately 850 vehicles per hour in one direction and 1,275 for both directions of travel at Level of Service C.

9. The highest peak hour volume on Waihee Road, the Friday peak hour volume from 7:00 a.m. to 8:00 a.m. is only 352 vehicles for both directions of travel, with 183 vehicles leaving and 169 vehicles entering the roadway. Waihee Road is adequate to meet not only present vehicular demands, but also future increases as well.
10. The traffic volumes generated by the proposed project have already been included into the projected future traffic volumes on Kamehameha Highway and need not again be counted. The inclusion is on the basis of the projections of future traffic volumes wherein it was assumed that there will be continuation of a high level of activity and growth in the Kahaluu District and that other projects in the Kahaluu District will take place which will maintain the high level of increase in traffic volumes on Kamehameha Highway. Furthermore, all factors were considered in the projections of future traffic volumes along Kamehameha Highway, including vacant and agricultural land in the area and growth in the resort industry.
11. Kamehameha Highway under present conditions will have sufficient capacity to accommodate present as well as future vehicular demands to the year 1990. Beyond 1990, the future highway system will require the improvement of Kamehameha Highway to a 4-lane divided highway. This improved 4-lane divided highway should have a capacity ranging from 2,892 to 4,958 vehicles per hour for both directions of travel and be able to accommodate an average daily traffic volume within the range of 35,758 to 45,000 vehicles. The future highway system not only will be adequate but will have considerable excess capacity and mitigate at a future time any possible undesirable traffic congestion.
12. The 21 dwelling units of the residential subdivision will generate a 24 hour volume of 168 trips and a peak hour volume of 14 trips. The peak hour volume of 14 trips is at the rate of 1 trip per 4.29 minutes and is so negligible that its impact on the highway system will be disregarded.
13. Using the highest values of regional shopping center characteristics at 600 trips per acre, the traffic generated by the proposed commercial-retail complex will result in 4,214 trips per day. The peak hour volumes generated by the complex will occur either before or after the peak commuting hours of the highway system. Since highways must be designed to meet peak hour commuting demands, the roadway system will be able to accommodate the traffic generated by the proposed commercial-retail complex at an acceptable level of service.
14. No reliance was made on public mass transportation to reduce the traffic impact of the project. 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.

15. Approximately 284 parking spaces will be provided for the commercial-retail complex, compared to 265 parking spaces required by the Comprehensive Zoning Code. To facilitate traffic movement and to minimize traffic congestion, entrances and exits will be located at both Kamehameha Highway and Waihee Road.

16. Analyzing the various factors, it may be concluded the proposed project will not add substantially to the traffic problems to create an adverse impact. Although Kamehameha Highway under present conditions will have sufficient capacity to accommodate present as well as future traffic demands to the year 1990, the future highway system with Kamehameha Highway improved to a 4-lane divided highway will provide considerable excess capacity and further mitigate at a future time any possible undesirable traffic congestion.

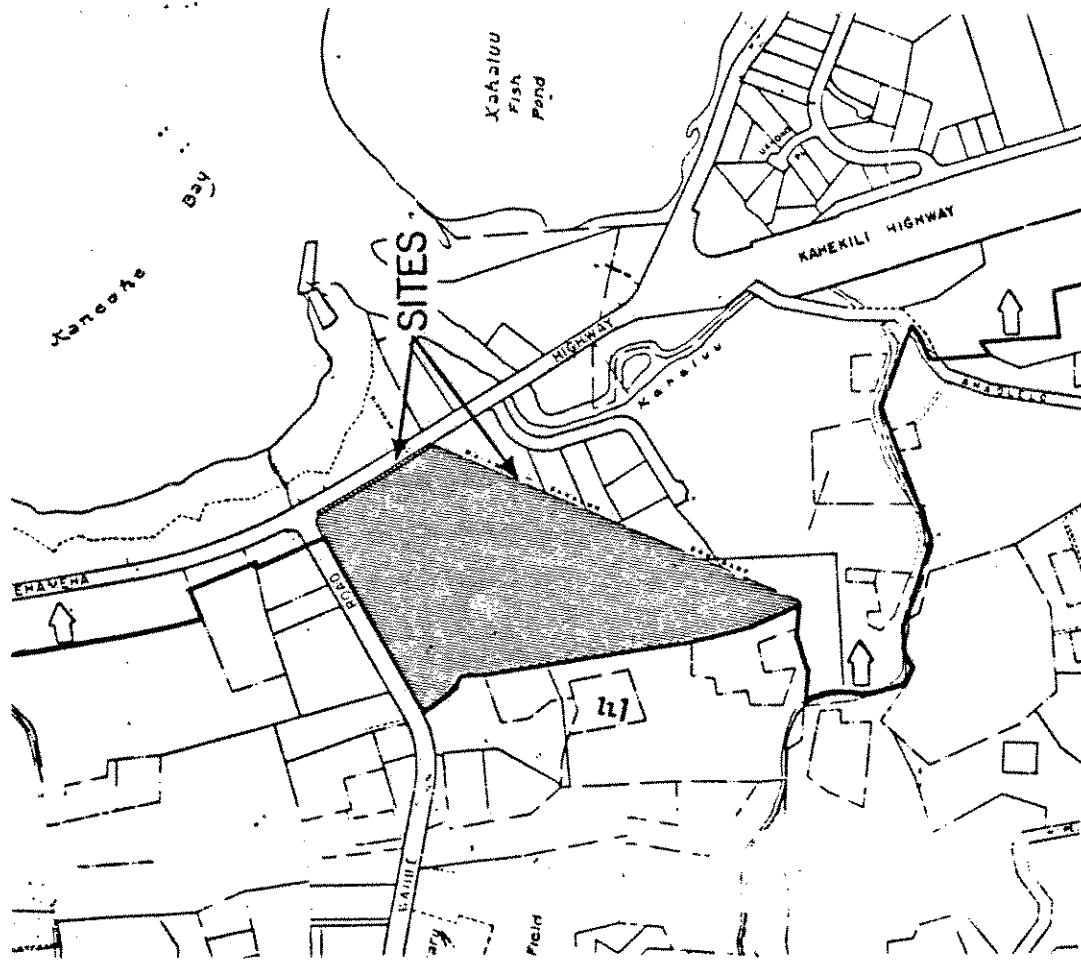


Plate 1
VICINITY MAP
SCALE 1" = 400'

LEGEND
SMA BOUNDARY LINE

TAX MAP KEYS: 4-7-12:12, 27

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T-4

DESCRIPTION OF PROJECT

The proposed Kahaluu Commercial & Residential Project is located in Kahaluu, Oahu on approximately 15.3 acres of land at the intersection of Waiehe Road and Kamehameha Highway and is identified by Tax Map Key 4-7-12: 12 and 27. Within the project site, there are three zoning designations: B-2 Community Business District (7.023 acres), R-3 Residential District (5.580 acres), and R-6 Residential District (2.675 acres). The project location map, Plate 1, outlines its relationship to the highway system and the neighborhood.

The tentative proposal for the project is to construct a commercial retail complex of 4 single story buildings with parking on the B-2 Community Business District portion of the site and a 21 lot single family residential subdivision on the mauka Residential District portion of the site.

The commercial-retail complex will provide a total building area of approximately 96,000 square feet, to include a food market, restaurants, general commercial and retail establishments. All four of the proposed buildings will be one-story in height and each will contain from approximately 5,000 square feet to 40,000 square feet of floor space. Three of the buildings will be located towards the mauka side of the B-2 Community Business District portion of the site and be grouped together to create a pedestrian arcade for shoppers. The fourth detached building will be constructed along the Kamehameha Highway and Waiehe Road intersection and contain a fast food service establishment with drive through service.

To accommodate these uses, the complex will have street level parking for 284 automobiles. To facilitate traffic movement and to minimize traffic congestion, entrances and exits will be located at both Kamehameha Highway and Waiehe Road. A separate driveway for service vehicles and employee parking is proposed with access from Waiehe Road, away from the major highway, Kamehameha Highway.

Although the minimum lot size for a subdivision in an R-6 Residential District is only 5,000 square feet, all of the 21 single family residential lots will have a minimum lot area of 10,000 square feet and be sold in fee. As required by Park Dedication Rules and Regulations, one additional lot of approximately 13,200 square feet will be created and set aside for park and playground facilities for the subdivision. Waiehe Road will serve as access to the subdivision and will be improved to subdivision standards for dedication to the City and County of Honolulu.

To provide for the possibility of the future widening of Kamehameha Highway, a buffer strip using the residential zoned portion of the site adjacent to Kamehameha Highway will be landscaped and maintained between the proposed development and the highway. The depth of this buffer strip will be approximately 115 feet from the highway, considerably more than the 35 foot setback requested by the State Department of Transportation for highway widening.

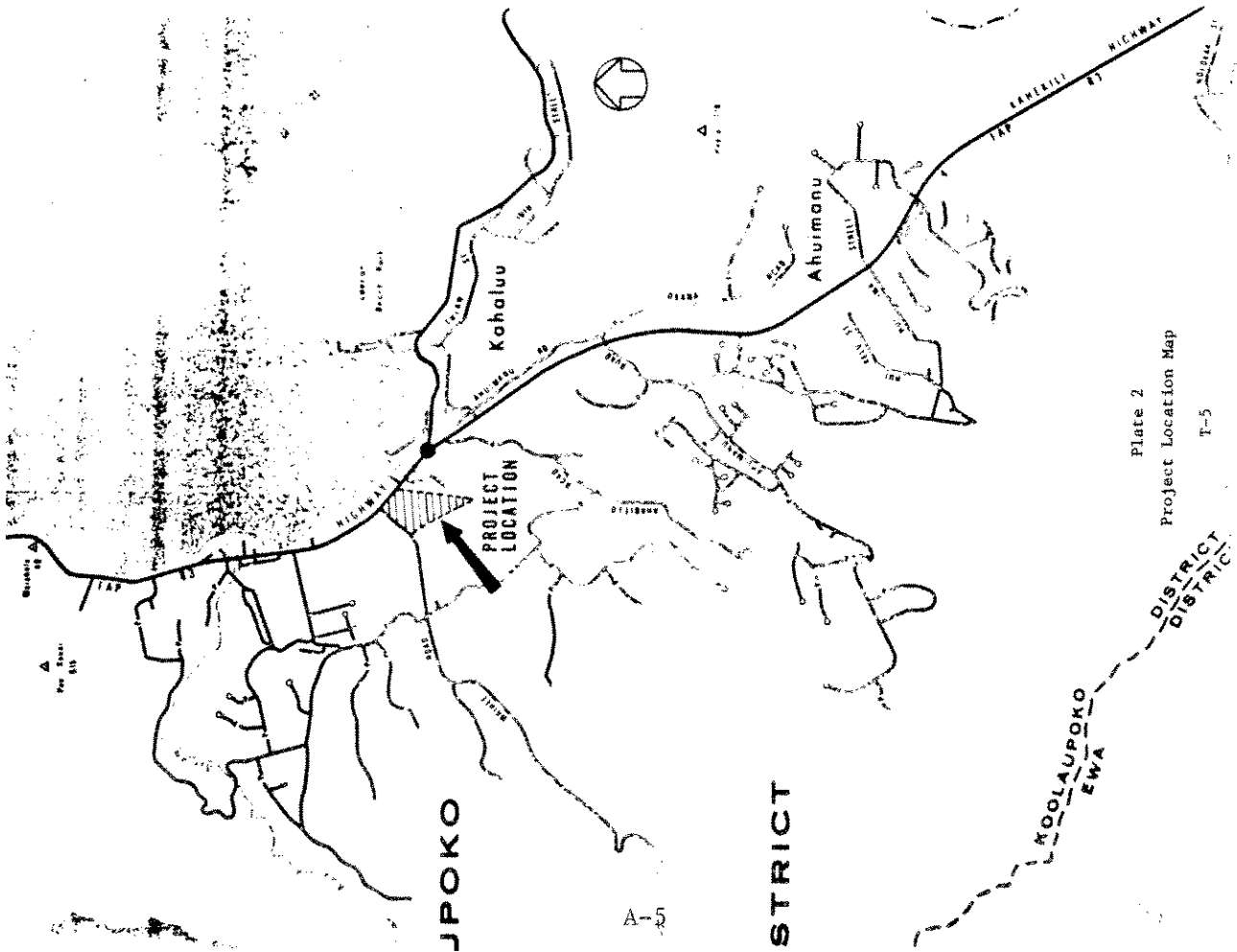


Plate 2

Project Location Map

The project site is designated for highway right-of-way, commercial, low-density residential, and sewage treatment plant uses. However, the proposed "Development Plan for Koolaupoko" delineates the project site for agricultural use. The entire site is also located within the Special Management Area (SMA).

INTRODUCTION

Any plan for community development must have sound social and economic objectives. Social, aesthetic and other values play a role in the pattern of development and the physical growth of a community must include improvements to the aesthetic, the general environment and to the social and economic welfare of the area affected by the project.

The impact of traffic on the environment can be severe and is one of the most controversial issues. However, appropriate land use and development patterns make it possible to minimize adverse environmental and traffic effects. With the aid of well-conceived plans, based on sound economic principles and with a high social purpose, a development can be made to enhance the aesthetic, environmental 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.

EXISTING HIGHWAY SYSTEM

The existing highway system serving the project site is shown on Plate 3. The streets in light lines are local streets primarily for access to abutting properties and are intended for local traffic. The local streets have been included to relate its effect on the major highway system and its impact at the local level.

As shown on the plan, Kamehikili Highway merges with Kamehameha Highway approximately 1,400 feet south of Waitee Road. Consequently, Kamehameha Highway is the only major arterial serving the project. Kamehameha Highway is designated on the Federal-aid Primary System and will have an important role to accommodate large volumes of traffic.

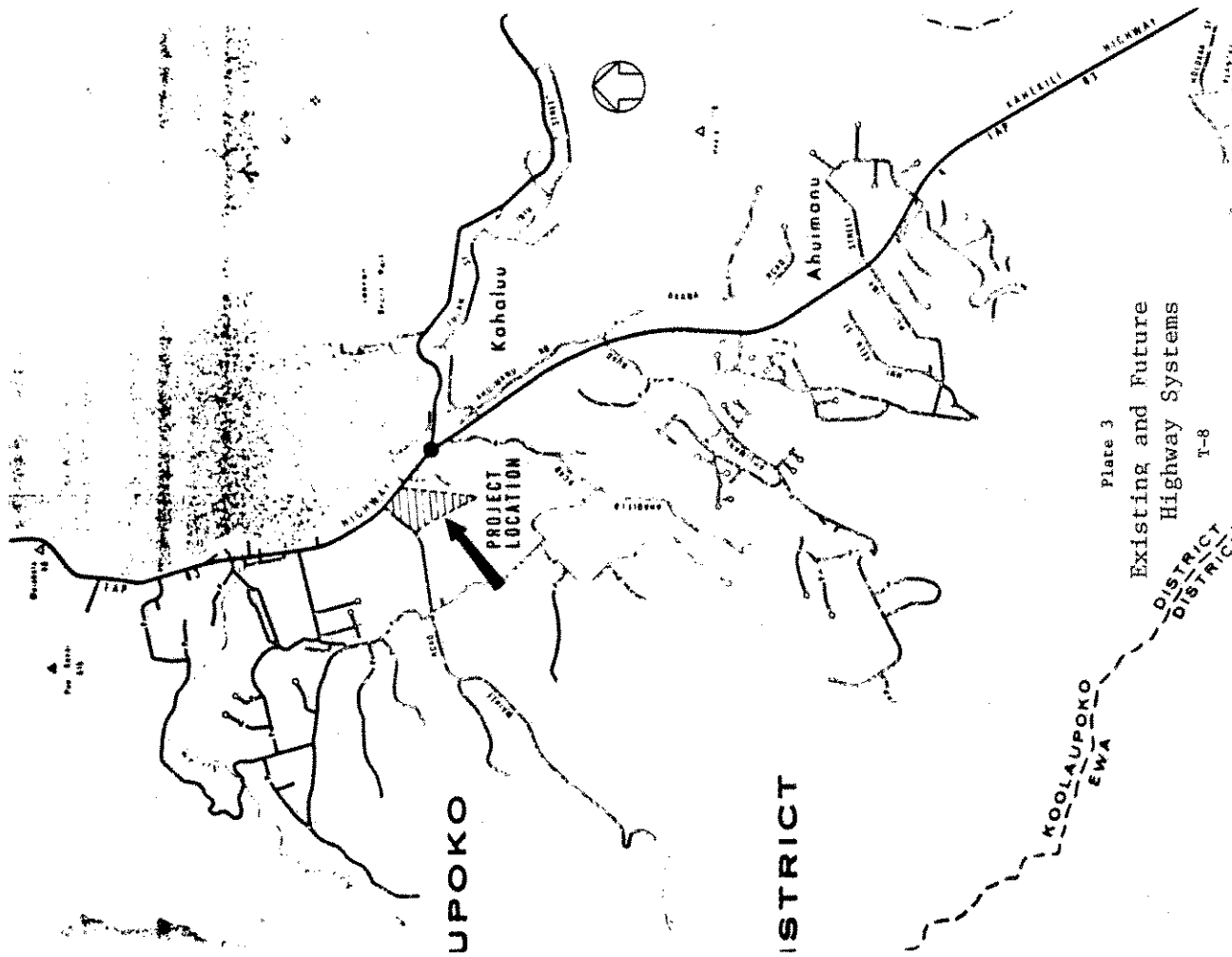


Table 1

Average Daily Traffic & Peak Hour Volumes
Station 31-K
Kahekihi Highway At Kamehameha Highway & Ahaolelo Road

Under the existing General Plan of the City and County of Honolulu, the future highway system designates Kahekihi Highway and its extension at Kamehameha Highway as a major highway and proposes the improvement of many streets and the extension or construction of additional new facilities to serve the Kahaluu District. However, the proposed "Development Plan for Koolauapoko" redesignates much of the Kahaluu District for agricultural use and the future highway system has not yet been developed.

Inasmuch as Kamehameha Highway is on the Federal-aid Primary System, Kamehameha Highway will remain as the only major arterial serving the project site under both the existing and future highway systems, except that Kamehameha Highway must be improved to higher standards and designs for future traffic volumes. The future highway system, therefore, will mitigate at a future time any possible undesirable traffic congestion.

TRAFFIC VOLUMES

Traffic volume information and data were obtained from the report "Traffic Summary, Island of Oahu, 1973" of the State Department of Transportation, from the latest traffic volume counts collected by the Department and from traffic volume counts collected by the Consultant at the intersection of Kamehameha Highway and Waiehe Road.

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** Projected Volumes

Peak Hour Volumes

Year	Kamehameha Highway East Leg	Kamehameha Highway North Leg	Ahaolelo Road	Kahekihi Highway
2000		35,548**		
1990		25,821**		
1981		17,067**		
1980		11,965		
1979	3,195	15,123	490	13,996
1978	4,717	14,285	674	12,380
1977				13,460
1976	2,878	12,204	583	10,997
1975				11,061
1974				11,863
1973				11,448
1972*				9,828

* Construction of last portion of Kahekihi Highway completed May, 1972.

1981

A.M. Peak 790
P.M. Peak 961

1978

A.M. Peak 266
P.M. Peak 243

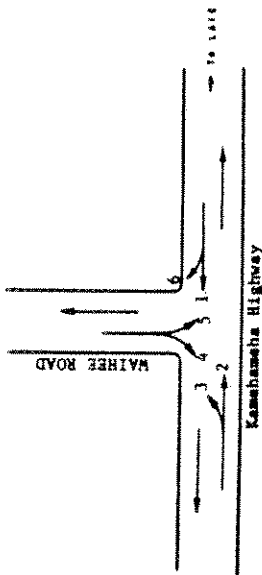
49 791
63 1,034

Table 1 shows the past and present traffic volumes on Kamehameha Highway and Kahekihi Highway at Station 31-K which is in close proximity to the project site and Waiehe Road. Station 31-K is located at the junction of Kamehameha Highway and Kahekihi Highway and is approximately 1400 feet from the project site. The junction was created when the last portion of Kahekihi Highway was completed in 1972.

In 1976, the traffic volume on Kamehameha Highway was 12,204. By 1979, the traffic volume increased to 15,123. However, in 1981, the traffic volume showed a considerable reduction from the 1979 volume of 15,123 to 11,965 in 1981, a decrease of 3,158 vehicles or 20.88 per cent. The reduction in traffic volume may be attributed to the rising cost of transportation and to the decline in tourist travel.

Kamehameha Highway experienced a higher rate of growth of traffic between the years 1976 to 1979. As already stated, traffic increased from 12,204 in 1976 to 15,123 in 1979 or 7.97 per cent per year. For the one year

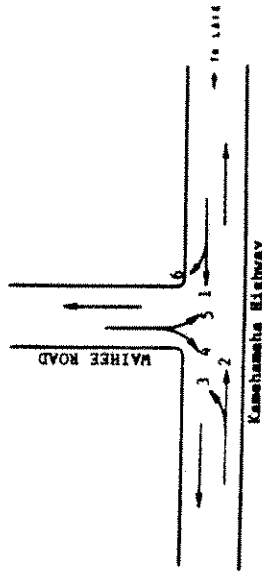
Table 2
Weekend Traffic Volumes - June 5, 6 & 7, 1981
Kanehameha Highway At Waihee Road



Time	Number of Vehicles Movements 1 & 4		Number of Vehicles Movements 2 & 3		Total - South Leg Movements-1 & 4, 2 & 3		% of 12 Hour Volume
	Fri.	Sat.	Fri.	Sat.	Fri.	Sat.	
4:00 - 5:00 A.M.							
5:00 - 6:00 A.M.							
6:00 - 7:00 A.M.	178	122	147	178	325	266	3.63
7:00 - 8:00 A.M.	359	269	292	186	628	510	5.20
8:00 - 9:00 A.M.	348	242	323	365	608	597	7.53
9:00 - 10:00 A.M.	318	282	294	410	612	747	7.62
10:00 - 11:00 A.M.	329	297	354	453	683	830	8.47
11:00 - 12:00 N.	337	324	405	592	742	926	10.00
12:00 - 1:00 P.M.	366	367	424	533	790	920	9.38
1:00 - 2:00 P.M.	350	471	415	591	765	1022	10.82
2:00 - 3:00 P.M.	438	588	410	530	848	1108	11.30
3:00 - 4:00 P.M.	453	572	454	428	927	949	9.58
4:00 - 5:00 P.M.	474	560	507	373	927	872	8.84
5:00 - 6:00 P.M.	410	437	451	320	761	725	7.90
6:00 - 7:00 P.M.							
7:00 - 8:00 P.M.							
8:00 - 9:00 P.M.							
9:00 - 10:00 P.M.							
10:00 - 11:00 P.M.							
11:00 - 12:00 N.Y.							
12:00 - 1:00 A.M.							
1:00 - 2:00 A.M.							
2:00 - 3:00 A.M.							
3:00 - 4:00 A.M.							
12 Hour Volume	4490	4492	4404	5053	8974	9803	9.17
24 Hour Volume					11,205	13,429	12.04

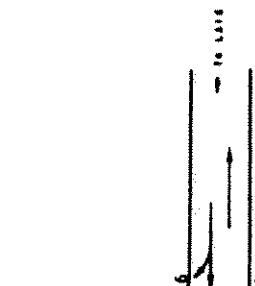
* Peak Hour Volume

Table 3
Traffic Volume & Turning Movement Counts
Friday, June 5, 1981
Kanehameha Highway At Waihee Road



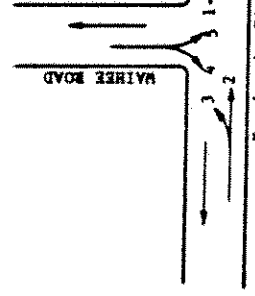
Time	Number of Vehicles Movement				Total	Number of Vehicles Movement			Total - South Leg Movements-1 & 4, 2 & 3	% of 12 Hour Volume
	1	4	2	3		1	2	3		
4:00 - 5:00 A.M.										
5:00 - 6:00 A.M.										
6:00 - 7:00 A.M.	262	106	368	111	847	35	147	315	5.74	
7:00 - 8:00 A.M.	198	161	359	224	942	145	269	628	6.99	
8:00 - 9:00 A.M.	243	105	348	197	893	197	254	602	6.71	
9:00 - 10:00 A.M.	247	71	318	241	867	241	294	672	6.82	
10:00 - 11:00 A.M.	335	74	339	294	1042	60	354	683	7.61	
11:00 - 12:00 N.	268	69	337	344	1018	67	405	742	8.27	
1:00 - 2:00 P.M.	304	62	366	346	1078	68	424	790	8.80	
2:00 - 3:00 P.M.	281	69	350	340	1020	75	415	765	8.53	
3:00 - 4:00 P.M.	377	121	438	305	1241	105	410	848	9.45	
4:00 - 5:00 P.M.	357	96	453	352	1258	102	454	907	10.11	
5:00 - 6:00 P.M.	343	101	474	320	1238	117	507	921	10.26	
6:00 - 7:00 P.M.	338	72	470	423	1203	129	551	951	10.71	
7:00 - 8:00 P.M.										
8:00 - 9:00 P.M.										
9:00 - 10:00 P.M.										
10:00 - 11:00 P.M.										
11:00 - 12:00 N.Y.										
12:00 - 1:00 A.M.										
1:00 - 2:00 A.M.										
2:00 - 3:00 A.M.										
3:00 - 4:00 A.M.										
12 Hour Volume	3283	1107	4490	3476	12056	1008	4484	8974		
24 Hour Volume										

Table 4
 Traffic Volume & Turning Movement Counts
 Saturday, June 6, 1981
 Kamehameha Highway At Waihee Road



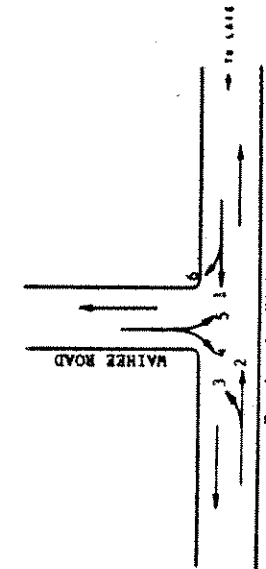
Time Period	Number of Vehicles Movement				Total - South Leg Movements-1 & 4, 2 & 3	% of 12 Hour Volume
	Movement		Total			
	1	4	2	3		
6:00 - 7:00 A.M.	131	47	178	37	178	3.63
7:00 - 8:00 A.M.	149	69	218	31	249	5.20
8:00 - 9:00 A.M.	289	84	373	87	365	7.83
9:00 - 10:00 A.M.	249	88	337	92	347	7.62
10:00 - 11:00 A.M.	251	126	377	118	453	9.87
11:00 - 12:00 P.M.	299	84	383	94	392	8.66
12:00 - 1:00 P.M.	301	66	367	79	353	7.89
1:00 - 2:00 P.M.	377	54	431	62	429	9.39
2:00 - 3:00 P.M.	499	89	588	84	557	12.22
3:00 - 4:00 P.M.	413	99	512	86	520	11.30
4:00 - 5:00 P.M.	401	93	494	58	428	9.39
5:00 - 6:00 P.M.	345	92	437	63	339	7.45
6:00 - 7:00 P.M.						
7:00 - 8:00 P.M.						
8:00 - 9:00 P.M.						
9:00 - 10:00 P.M.						
10:00 - 11:00 P.M.						
11:00 - 12:00 A.M.						
12:00 - 1:00 A.M.						
1:00 - 2:00 A.M.						
2:00 - 3:00 A.M.						
3:00 - 4:00 A.M.						
12 Hour Volume	3686	806	4492	382	3822	85.3
24 Hour Volume						9117

Table 5
 Traffic Volume & Turning Movement Counts
 Sunday, June 7, 1981
 Kamehameha Highway At Waihee Road



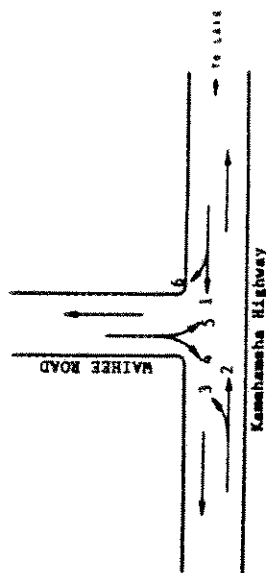
Time Period	Number of Vehicles Movement				Total - South Leg Movements-1 & 4, 2 & 3	% of 12 Hour Volume
	Movement		Total			
	1	4	2	3		
6:00 - 7:00 A.M.						
7:00 - 8:00 A.M.						
8:00 - 9:00 A.M.						
9:00 - 10:00 A.M.						
10:00 - 11:00 A.M.						
11:00 - 12:00 P.M.						
12:00 - 1:00 P.M.						
1:00 - 2:00 P.M.						
2:00 - 3:00 P.M.						
3:00 - 4:00 P.M.						
4:00 - 5:00 P.M.						
5:00 - 6:00 P.M.						
6:00 - 7:00 P.M.						
7:00 - 8:00 P.M.						
8:00 - 9:00 P.M.						
9:00 - 10:00 P.M.						
10:00 - 11:00 P.M.						
11:00 - 12:00 A.M.						
12:00 - 1:00 A.M.						
1:00 - 2:00 A.M.						
2:00 - 3:00 A.M.						
3:00 - 4:00 A.M.						
12 Hour Volume	3686	806	4492	382	3822	85.3
24 Hour Volume						9117

Table 6
Weekend Traffic Volumes - June 5, 6 & 7, 1981
Waihee Road At Kanehameha Highway



Time	Number of Vehicles Movements 4 & 5			Number of Vehicles Movements 3 & 6			Total-Both Directions Movements-4 & 5, 3 & 6			% of 12 Hour Volume Fri.
	Fri.	Sat.	Sun.	Fri.	Sat.	Sun.	Fri.	Sat.	Sun.	
4:00 - 5:00 A.M.										
5:00 - 6:00 A.M.	113	52	39	48	45	29	161	97	68	6.52
6:00 - 7:00 A.M.	183	85	40	169	68	50	353	453	90	14.32
7:00 - 8:00 A.M.	124	98	59	77	104	45	201	202	104	8.4
8:00 - 9:00 A.M.	85	110	79	65	115	92	150	235	171	6.08
9:00 - 10:00 A.M.	83	142	93	67	142	83	150	284	176	6.08
10:00 - 11:00 A.M.	80	123	89	68	108	92	148	237	181	6.02
11:00 - 12:00 P.M.	73	76	80	81	91	83	154	167	163	6.24
1:00 - 2:00 P.M.	78	110	96	83	107	96	190	217	192	6.48
2:00 - 3:00 P.M.	141	116	76	131	98	89	273	274	165	11.02
3:00 - 4:00 P.M.	120	117	73	140	75	78	250	192	151	9.72
4:00 - 5:00 P.M.	112	109	104	135	78	91	257	187	155	10.61
5:00 - 6:00 P.M.	94	104	89	139	74	104	233	178	143	9.44
6:00 - 7:00 P.M.										
7:00 - 8:00 P.M.										
8:00 - 9:00 P.M.										
9:00 - 10:00 P.M.										
10:00 - 11:00 P.M.										
11:00 - 12:00 M.N.										
12:00 - 1:00 A.M.										
1:00 - 2:00 A.M.										
2:00 - 3:00 A.M.										
3:00 - 4:00 A.M.										
12 Hour Volume	1,286	1,242	917	1,182	1,105	932	2,468	2,347	1,849	
24 Hour Volume										

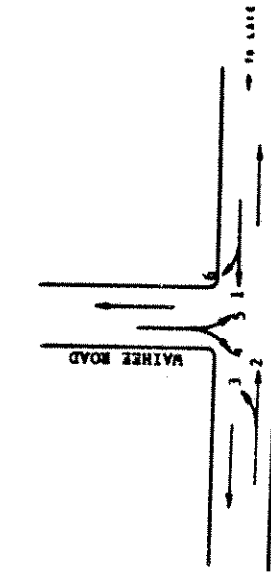
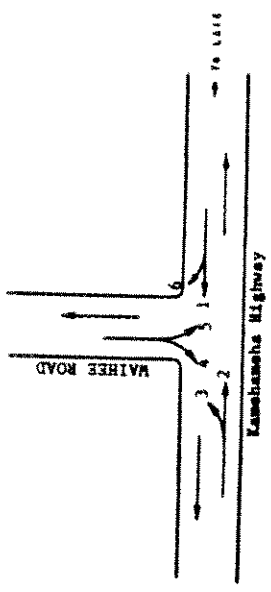
Table 7
Traffic Volume & Turning Movement Counts
Friday, June 5, 1981
Waihee Road At Kanehameha Highway



Time	Number of Vehicles Movements						Total-Both Directions Movements 4 & 5, 3 & 6	% of 12 Hour Volume
	4	5	3	6	Total	Total		
4:00 - 5:00 A.M.								
5:00 - 6:00 A.M.								
6:00 - 7:00 A.M.	106	7	113	36	12	48	161	6.52
7:00 - 8:00 A.M.	161	22	183	145	24	169	352	14.26
8:00 - 9:00 A.M.	105	19	124	57	20	77	201	8.4
9:00 - 10:00 A.M.	71	14	85	33	12	65	150	6.08
10:00 - 11:00 A.M.	74	9	83	60	7	67	180	6.08
11:00 - 12:00 P.M.	69	11	80	68	7	68	148	6.02
12:00 - 1:00 P.M.	63	11	73	68	13	81	154	6.24
1:00 - 2:00 P.M.	64	9	78	75	7	82	169	6.48
2:00 - 3:00 P.M.	131	20	141	105	26	131	272	11.02
3:00 - 4:00 P.M.	96	24	120	102	18	120	240	9.72
4:00 - 5:00 P.M.	101	11	112	117	18	135	237	10.01
5:00 - 6:00 P.M.	72	22	94	129	10	139	233	9.44
6:00 - 7:00 P.M.								
7:00 - 8:00 P.M.								
8:00 - 9:00 P.M.								
9:00 - 10:00 P.M.								
10:00 - 11:00 P.M.								
11:00 - 12:00 M.N.								
12:00 - 1:00 A.M.								
1:00 - 2:00 A.M.								
2:00 - 3:00 A.M.								
3:00 - 4:00 A.M.								
12 Hour Volume	1,027	179	1,206	1,003	174	1,182	2,468	
24 Hour Volume								

Table 8
Traffic Volume & Turning Movement Counts
Saturday, June 6, 1981
Waihee Road At Kanehaneha Highway

Table 9
Traffic Volume & Turning Movement Counts
Sunday, June 7, 1981
Waihee Road At Kanehaneha Highway



Time Period	Number of Vehicles Movements						Total-Both Directions Movements 4 & 5, 3 & 6	X of 12 Hour Volume
	4	5	3	6	Total			
4:00 - 5:00 A.M.								
5:00 - 6:00 A.M.								
6:00 - 7:00 A.M.	47	5	37	8	45	97	4.23	
7:00 - 8:00 A.M.	69	16	85	15	68	153	6.33	
8:00 - 9:00 A.M.	84	14	98	17	104	202	8.61	
9:00 - 10:00 A.M.	88	22	110	23	115	225	9.59	
10:00 - 11:00 A.M.	126	16	142	24	142	284	12.10	
11:00 - 12:00 N.	95	28	123	14	129	237	9.84	
12:00 - 1:00 P.M.	66	10	76	12	91	167	7.11	
1:00 - 2:00 P.M.	54	16	110	18	107	217	9.24	
2:00 - 3:00 P.M.	89	27	116	14	93	214	9.22	
3:00 - 4:00 P.M.	59	18	117	65	10	192	9.48	
4:00 - 5:00 P.M.	98	11	109	39	20	187	7.97	
5:00 - 6:00 P.M.	92	13	104	63	11	178	7.39	
6:00 - 7:00 P.M.								
7:00 - 8:00 P.M.								
8:00 - 9:00 P.M.								
9:00 - 10:00 P.M.								
10:00 - 11:00 P.M.								
11:00 - 12:00 N.N.								
12:00 - 1:00 A.M.								
1:00 - 2:00 A.M.								
2:00 - 3:00 A.M.								
3:00 - 4:00 A.M.								
12 Hour Volume	1,047	195	1,242	979	186	1,105	2,347	
24 Hour Volume								

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Time Period	Number of Vehicles Movements						Total-Both Directions Movements 4 & 5, 3 & 6	X of 12 Hour Volume
	4	5	3	6	Total			
4:00 - 5:00 A.M.								
5:00 - 6:00 A.M.								
6:00 - 7:00 A.M.	33	6	39	24	5	29	3.68	
7:00 - 8:00 A.M.	35	5	40	10	10	50	4.87	
8:00 - 9:00 A.M.	57	8	59	10	5	85	5.62	
9:00 - 10:00 A.M.	67	12	79	16	6	92	7.71	
10:00 - 11:00 A.M.	77	16	93	25	8	83	1.76	
11:00 - 12:00 N.	73	15	88	24	8	78	9.79	
12:00 - 1:00 P.M.	77	3	80	70	13	83	8.81	
1:00 - 2:00 P.M.	84	12	96	84	12	90	10.38	
2:00 - 3:00 P.M.	65	11	76	82	7	89	8.92	
3:00 - 4:00 P.M.	68	15	73	66	12	78	8.17	
4:00 - 5:00 P.M.	93	11	104	23	18	91	10.55	
5:00 - 6:00 P.M.	83	6	89	89	15	104	10.84	
6:00 - 7:00 P.M.								
7:00 - 8:00 P.M.								
8:00 - 9:00 P.M.								
9:00 - 10:00 P.M.								
10:00 - 11:00 P.M.								
11:00 - 12:00 N.N.								
12:00 - 1:00 A.M.								
1:00 - 2:00 A.M.								
2:00 - 3:00 A.M.								
3:00 - 4:00 A.M.								
12 Hour Volume	806	111	917	813	119	932	1849	
24 Hour Volume								

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Table 10

Average Daily Traffic, Saturday & Sunday Traffic Volumes
Kamehameha Highway At Waihee Road

Year	Average Daily Traffic	Saturday Traffic Volume	Sunday Traffic Volume
2000	35,548*	38,833*	36,113*
-	24,919**	27,222**	25,315**
1990	25,821*	28,206*	26,231*
-	18,100**	19,772**	18,388**
1981	17,067*	18,671*	17,338*
-	11,965	13,429	11,064
1980	-	-	-
1979	15,123	-	-
1978	14,285	-	-
1977	-	-	-
1976	12,204	-	-
1975	-	-	-

* Projected
** Probable actual volume

period from 1978 to 1979, the traffic volume increased at a slower rate from 14,285 in 1978 to 15,123 in 1979 or 5.87 per cent per year. Although traffic volumes have shown a considerable reduction in 1981 and since highway facilities are more permanent than the land uses, traffic projections should be high for sound planning so that the highway system will be able to accommodate changing requirements and unpredictable future land uses.

To assure that the traffic projections will still be valid for the future, the higher rate of growth of 7.97 per year will be used. On the basis of the increase in traffic volume at the rate of 7.97 per cent per year from 1976, the projected future traffic volumes on Kamehameha Highway at Station 31-K should total 17,067 for 1981, 25,821 for 1990 and 35,548 for the year 2000. Station 31-K being in close proximity to the project site, the projected future traffic volumes will be considered as representative of the traffic volumes on Kamehameha Highway at Waihee Road.

Since Kamehameha Highway is a popular tourist route and critical traffic conditions usually occur on weekends, the consultant conducted traffic volume and turning movement counts at the intersection of Kamehameha Highway and Waihee Road for a 3 day weekend on June 5, 6 and 7, 1981 to determine the characteristics and variations in traffic flow on a Friday, Saturday and Sunday. These traffic volume and turning movement counts were taken for each 15 minute period from 6:00 a.m. to 6:00 p.m. (12 hours) and are shown on Tables 2 to 9.

Weekend traffic on Kamehameha Highway reflects recreational and social travel and is higher than the weekday traffic. The weekday traffic usually depicts a pattern of two distinct peak hours, one in the morning and another in the afternoon, whereas weekend traffic will exhibit one, usually pronounced peak in the afternoon.

Attention is also directed to the fact that a roadside survey was conducted by the Department of Transportation Services in the summer of 1971 to obtain information on tourist travel in the Windward area. The survey indicated that on Kamehameha Highway at Kahaluu, the average daily traffic or 24 hour volume of tourist traffic was approximately 2,600 vehicles. The total 24 hour volume was 8,648 vehicles, so that the tourist traffic represented approximately 30.1 per cent of the total 24 hour volume. Thus, were it not for the tourist or recreational traffic, traffic volumes on Kamehameha Highway would be considerably less than it would otherwise be.

An analysis of Table 2 indicates that for the weekend traffic on Kamehameha Highway at Waihee Road, the 12 hour volume from 6:00 a.m. to 6:00 p.m. is the highest on a Saturday and the lowest on a Friday. The 12 hour volumes are 8,974 vehicles on Friday, 9,803 on Saturday and 9,117 on Sunday. The Sunday traffic volume, therefore, is 101.39 per cent of the Friday traffic volume and the Saturday traffic volume is 109.24 per cent of the Friday traffic volume. Using these factors, it is possible to convert the future weekday traffic volumes to a Sunday or Saturday traffic volume.

From previous traffic volume surveys conducted in the Windward area, it has been determined that the 12 hour volumes are approximately 75 per

Year	Friday	Saturday	Sunday
2000	2,855*	3,292*	2,968*
-	1,991*	2,295*	2,070*
1990	2,074*	2,391*	2,153*
-	1,446**	1,667**	1,503**
1981	1,378*	1,589*	1,437*
-	961	1,108	999
1980	-	-	-
1979	-	-	-
1978	1,134	-	-
1977	-	-	-
1976	-	-	-
1975	-	-	-

cent of the 24 hour volume on a Friday, 73.0 per cent on a Saturday and 82.4 per cent on a Sunday. Using these factors, the 24 hour volumes, as shown in Table 2 are as follows: 11,965 for Friday, 13,429 for Saturday and 11,964 for Sunday. The 24 hour volume of 11,965 vehicles on Friday indicates that traffic volumes on Kamehameha Highway have not been increasing as expected. As shown in Table 1, the projected 1981 traffic volume at Station 31-K is 17,067. Thus, the projected traffic volumes for 1981, 1990 and the year 2000 will be considerably higher than the actual traffic volumes that will be on Kamehameha Highway during future years, so that the traffic projections will still be valid for the future.

The peak hour volumes on Kamehameha Highway follow the same pattern as the 12 hour volumes, being the highest on a Saturday and the lowest on a Friday. The peak hour volumes are 961 vehicles on Friday, 1,108 on Saturday and 999 vehicles on Sunday. The Saturday peak hour volume, therefore, is 115.30 per cent of the Friday peak hour volume and the Sunday peak hour volume is 103.95 per cent of the Friday peak hour volume. These factors will be used to convert the future weekday peak-hour volumes to a Saturday or Sunday peak hour volume. It should be emphasized that the peak hour time intervals for the weekend traffic occur on different hours of the day on a Friday, Saturday and Sunday and are as follows: 5:00 p.m. to 6:00 p.m. on a Friday, 2:00 p.m. to 3:00 p.m. on a Saturday and 3:00 p.m. to 4:00 p.m. on a Sunday.

As shown in Table 6, the weekend traffic volumes, including the peak hour volumes on Waihee Road do not exhibit the same pattern as the traffic volumes on Kamehameha Highway. On Waihee Road, the 12 hour volume from 6:00 a.m. to 6:00 p.m. is the highest on a Friday and the lowest on a Sunday, whereas, on Kamehameha Highway the 12 hour volume is the highest on a Saturday and the lowest on a Friday. The peak hour volumes on Waihee Road follow the same pattern as the 12 hour volumes, being the highest on a Friday and the lowest on a Sunday. The peak hour volumes on Waihee Road are very light, considering the fact that Waihee Road is a secondary street with a right of way width of 60 feet and pavement width of 40 feet. For a secondary street with a right of way width of 60 feet with no parking and at grade intersection, the capacity is approximately 850 vehicles per hour in one direction and 1,275 for both directions of travel at Level of Service C. The highest peak hour volume, the Friday peak hour volume from 7:00 a.m. to 8:00 a.m. is only 352 vehicles for both directions of travel, with 183 vehicles leaving and 169 vehicles entering Waihee Road. Waihee Road, therefore, will be adequate to meet not only present vehicular demands, but also future increases as well.

With the proper spacing of the peak hour time intervals, there is not the conflict or overlap of peak hour volumes with those of either Waihee Road or Kamehameha Highway. The peak hour time intervals on Waihee Road and on Kamehameha Highway are shown in Table 11. The significant differences in peak hour characteristics result in an equalization and spacing of the traffic load on Kamehameha Highway and thus, will not substantially affect the capacity of Kamehameha Highway. The weekend traffic volumes, therefore, will be used to determine the traffic impact on the highways.

Table 11
Peak Hour Time Intervals - 1981
Waihee Road And Kamehameha Highway

T I M E

A.M. Peak	Friday	Saturday	Sunday
Waihee Road	7:00-8:00 A.M.	10:00-11:00 A.M.	11:00-12:00 A.M.
Kamehameha Highway	11:00-12:00 N.	11:00-12:00 N.	11:00-12:00 N.
P.M. Peak			
Waihee Road	2:00-3:00 P.M.	1:00- 2:00 P.M.	4:00- 5:00 P.M.
Kamehameha Highway	5:00-6:00 P.M.	2:00- 3:00 P.M.	3:00- 4:00 P.M.

Table 10 shows the projected future traffic volumes on Kamehameha Highway at Waihee Road with conversion of the average daily traffic to Saturday and Sunday traffic volumes. It will be noted that since the highest rate of growth was used for the traffic projections from the year 1976, the traffic projection for 1981 totals 17,067 vehicles, whereas the actual volume is only 11,965 vehicles. Accordingly, the probable actual volumes are also indicated in Table 10.

The traffic volumes generated by the project, however, have already been included into the projected future traffic volumes on Kamehameha Highway and Waihee Road and need not again be counted. The inclusion is on the basis of the projections of future traffic volumes wherein it was assumed that there will be continuation of a high level of activity and growth in the Kahaluu District, and that other projects in the Kahaluu District will take place which will maintain the high level of increase in traffic volumes on Kamehameha Highway. Furthermore, all factors were considered in the projections of future traffic volumes along Kamehameha Highway, including vacant and agricultural land in the area and growth in the resort industry.

The capacity of Kamehameha Highway will determine whether or not these future traffic volumes can be accommodated by the highway network. 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.

TRAFFIC GENERATION

Kamehameha Highway presently is a two-lane highway classified as a minor arterial and designated as a Federal-aid Primary highway. Being a higher type facility, its capacity is similar to that for uninterrupted flow conditions. Under ideal conditions, the capacity of a two-lane, two-way roadway is approximately 2,000 passenger vehicles per hour, total, regardless of distribution by direction. It is to be expected, however, that the actual capacity of Kamehameha Highway would vary substantially from the maximum capacity. For design purposes, the capacity based on at grade intersection will be applied since street capacity is generally controlled by the capacity at intersections.

Using approximate calculations, the capacity of a roadway with a pavement width of 22 feet with no parking and at grade intersection is approximately 600 vehicles per hour in one direction and 900 vehicles per hour for both directions of travel at level of Service C. The calculated capacity figure, however, is conservative and the probable or actual capacity of Kamehameha Highway can be determined when comparison is made with the maximum observed traffic volumes recorded as early as 1961 on similar classifications of highways throughout the United States.

On two-lane two-way highways, the highest reported hourly volumes ranged from 1,605 to 1,871 for both directions of travel as compared to the capacity of 2,000 vehicles under ideal conditions and uninterrupted flow conditions and as compared to the calculated capacity of 900 vehicles per hour for both directions of travel. The average daily traffic reported for both directions ranged from 15,935 to 22,275. On four-lane two-way highways, the highest reported hourly volumes ranged from 2,892 to 4,958 vehicles per hour for both directions of travel. The average daily traffic reported for both directions ranged from 35,758 to 45,000. That the calculated capacity is very conservative and the actual capacity will be considerably higher is substantiated by past and present traffic volume counts.

There is, therefore, justification to expect that Kamehameha Highway under present conditions of a two-way two lane highway will have a capacity ranging from 1,605 to 1,871 vehicles per hour for both directions of travel at level of Service C, inasmuch as the directional distribution of the peak hour volumes are nearly equal in either direction. The projected Saturday peak hour volumes are 2,391 vehicles per hour for the year 1990 and 3,292 vehicles per hour for the year 2000. The probable actual Saturday peak hour volumes, however, will be 1,667 vehicles per hour for the year 1990 and 2,295 vehicles per hour for the year 2000.

Kamehameha Highway under present conditions, therefore, will have sufficient capacity to accommodate present as well as future vehicular demands to the year 1990. Beyond 1990, the future highway system will require the improvement of Kamehameha Highway to a 4-lane divided highway. This improved 4-lane divided highway should have a capacity ranging from 2,892 to 4,958 vehicles per hour for both directions of travel and be able to accommodate an average daily traffic volume within the range of 35,758 to 45,000 vehicles. The future highway system not only will be adequate but will have considerable excess capacity and mitigate at a future time any possible undesirable traffic congestion.

Traffic 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. The data will also determine how many additional cars can be accommodated by the highway network.

Since each type of land use has its own distinctive traffic generation characteristics and differ in the amount and intensity of traffic generated, peak hour time interval, directional distribution of peak hour movement, hourly distribution of traffic, type and composition of traffic, time variation in traffic flow and other variables, the traffic generated by the two land uses and its impact on the street system will be considered separately. What should be emphasized, however, is that of all the traffic generation characteristics, the most important is the peak hour traffic at different hours of the day and its effect on the highway at the time of the highway's peak loading condition.

Residential Land Use

The traffic generated by the residential land use is directly related to the number of dwelling units in the project. 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 a typical or average single family dwelling unit in Honolulu would be applicable to the dwelling units of this project.

Tables 12 and 13 show the trip and household characteristics that would be typical of dwelling units of the development. Each dwelling unit or household may be expected to own 1.8 automobiles and generate 8 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 12

TRIP CHARACTERISTICS - ALL MODES

Trips Per Person	Trips To Work Per Employed Person	Trips Per Dwelling Unit
2.1	0.7	8

Table 13
HOUSEHOLD CHARACTERISTICS

Auto Per Dwelling Unit	Persons Per Dwelling Unit	Employed Persons Per Dwelling Unit
1.8	4.1	1.6

Table 14

TRIP GENERATION

No. of Units	No. of Auto	No. of Employed Persons	Work Trips	24 Hour Volume	Peak Hour Volume
21	38	34	24	168	14

On the basis of these factors, the 24 hour and peak hour volumes were developed as shown in Table 14. The 21 dwelling units will generate a 24 hour volume of 168 trips and a peak hour volume of 14 trips.

The trip volumes so developed, including the 24 hour volume and peak hour volume will be higher than the actual volumes to be generated by the 21 dwelling units. The trip characteristics values actually refer to trips by all modes of travel from all origins to all destinations, including auto passenger trips and transit 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.

The peak hour volume of 14 trips is at the rate of one trip per 4.29 minutes and is so negligible that its impact on the highway system will be disregarded.

COMMERCIAL - RETAIL COMPLEX

As set forth in the description of the project, the commercial-retail complex which will include a food market, restaurants, general commercial and retail establishments will have a total floor area of 96,000 square feet with supporting parking facilities for 284 parking spaces. The complex is not sufficiently large to be truly classified as a shopping center. However, to assure that a sufficient margin of safety is built into the analysis, higher than normal traffic generation figures will be used, so that the traffic projections will still be valid for the future. Accordingly, the highest values of shopping center characteristics will be used to provide a more realistic figure for traffic generation.

Due to its complementary traffic generation characteristics, the commercial-retail complex will cause only a mild traffic impact on the highway network during the peak commuting hours. The pattern of hourly activities at a shopping center is quite different from the peak commuting hours on a highway. Typically, the peak commuting hours on a highway are hours of subdued activity at a shopping center. The peak hours at a shopping center occur either during the weekends or evening hours, with the evening peak hours being a higher percentage than the daytime peak hours.

Research studies of shopping centers in the United States indicate that whether or not there is evening shopping, the percentage of all shopping center trips occurring during the normal peak highway hours from 4:00 P.M. to 6:00 P.M. is remarkably constant. For all centers, the average hourly volume of shopping center trips was only 6.6 per cent of the daily total. Their directional flow is opposite to that of the residential land uses so that there is not the competition for highway space and, therefore, less traffic congestion. The expected patterns of hourly distribution of shopping trips for daytime shopping and evening shopping are set forth in Tables 15 and 16.

Table 15

Hourly Distribution of Shopping Trips
Daytime Shopping

Time of Day	Percentage of Total Trips	No. of Trips
7:30 - 8:30 A.M.	1.25%	53
8:30 - 9:30 A.M.	10.25%	432
9:30 - 10:30 A.M.	15.00%	632
10:30 - 11:30 A.M.	9.25%	390
11:30 - 12:30 P.M.	8.50%	358
12:30 - 1:30 P.M.	8.75%	369
1:30 - 2:30 P.M.	9.75%	411
2:30 - 3:30 P.M.	12.00%	506
3:30 - 4:30 P.M.	9.75%	411
4:30 - 5:30 P.M.	5.50%	232
5:30 - 6:30 P.M.	4.00%	168
6:30 - 7:30 P.M.	5.00%	211
7:30 - 8:30 P.M.	1.00%	42
8:30 - 9:30 P.M.	-	-

Table 16

Hourly Distribution of Shopping Trips
Evening Shopping

Time of Day	Percentage of Total Trips	No. of Trips
7:30 - 8:30 A.M.	0.25%	11
8:30 - 9:30 A.M.	3.25%	137
9:30 - 10:30 A.M.	9.50%	400
10:30 - 11:30 A.M.	11.75%	495
11:30 - 12:30 P.M.	2.50%	105
12:30 - 1:30 P.M.	8.75%	360
1:30 - 2:30 P.M.	10.25%	432
2:30 - 3:30 P.M.	6.50%	274
3:30 - 4:30 P.M.	6.75%	284
4:30 - 5:30 P.M.	8.25%	348
5:30 - 6:30 P.M.	7.25%	306
6:30 - 7:30 P.M.	18.75%	790
7:30 - 8:30 P.M.	6.00%	253
8:30 - 9:30 P.M.	0.50%	21
9:30 - 10:30 P.M.	-	-

Traffic generation rates for shopping centers in the United States range between 30 and 392 trips per acre of land area, with a mean of 160. At 160 trips per acre, the 7.023 acres of the project will generate approximately 1,124 trips per day during the hours that the shopping center is operating. The hours of operation of the shopping complex will be from 9:30 A.M. to 5:30 P.M. without evening shopping and from 9:30 A.M. to 9:00 P.M. with evening shopping. Using the highest value of 392 trips per acre, the project will generate 2,753 trips.

Traffic generation rates for regional shopping centers range between 400 to 700 trips per acre with a mean of 600. The generation rate of 600 trips per acre, therefore, will be used. At 600 trips per acre, the traffic generated by the project will result in 4,214 trips per day.

As shown in Tables 15 and 16, the peak hour volumes generated by the shopping complex for daytime shopping will occur in the morning between 9:30 to 10:30 A.M. and in the afternoon between 2:30 to 3:30 P.M., after the morning peak commuting hours and before the afternoon peak commuting hours. With evening shopping, the peak hour volumes generated by the shopping complex will occur in the morning between 10:30 to 11:30 A.M. and in the evening between 6:30 to 7:30 P.M., after both the morning and afternoon peak commuting hours. Thus, it will not be difficult to make a trip to the complex at any time, free from hazards and traffic congestion. Since highways must be designed to meet peak hour commuting demands, the roadway network will be able to accommodate the traffic generated by the shopping complex at an acceptable level of service.

MASS TRANSPORTATION

The project area is presently served by one (1) bus route, Route 52, Honolulu-Wahiawa-Kaneohe. Average headway is approximately 30 minutes, peak and off-peak periods and service is available on Saturdays and Sundays.

Route 52 provides around-the-island coverage. Buses from Honolulu proceed along Kamehameha Highway and serve Aiea, Pearl City, Milliani, Wahiawa, the North Shore, Kahaluu and Kaneohe and return to Honolulu via the Pali Highway. Service is also provided in the opposite direction. The travel time by public transportation from Honolulu (Ala Moana Center) to the project site is approximately 1 hour.

With such a long travel time by public mass transportation, 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.

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.

PARKING

So as to create a minimum of adverse environmental impact and to minimize traffic congestion, more parking than is required by the Comprehensive Zoning Code will be provided. The parking facility will be designed to complement landscape and traffic control plans for the neighborhood and the community.

Approximately 284 parking spaces will be provided, compared to 265 parking spaces required by the Code. All of these spaces will be street level parking. To facilitate traffic movement and to minimize traffic congestion, entrances and exits will be located at both Kamehameha Highway and Waihee Road. A separate driveway for service vehicles and employee parking is proposed with access from Waihee Road, away from the major highway, Kamehameha Highway.

From the standpoint of commercial success, the provision of adequate parking, therefore, should not create a traffic congestion problem on any of the approach roads to the project.

CONCLUSION

Analyzing the various factors, it may be concluded the proposed project will not add substantially to the traffic problems to create an

adverse impact. Although Kamehameha Highway under present conditions will have sufficient capacity to accommodate present as well as future traffic demands to the year 1990, the future highway system with Kamehameha Highway improved to a 4-lane divided highway will provide considerable excess capacity and further mitigate at a future time any possible undesirable traffic congestion. The development will make possible the achievement of desirable social and economic improvements for the area.

APPENDIX B

DRAFT

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AIR QUALITY STUDY

FOR THE PROPOSED

KAHALUU COMMERCIAL AND RESIDENTIAL DEVELOPMENT

Prepared by

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JUNE 1981

LIST OF FIGURES

I. PROJECT DESCRIPTION

The proposed project involves site preparation and construction of a 7+ acre shopping center/parking area and a 21-lot subdivision on a 15.3-acre site located in Kahaluu as shown in Figure 1. Detailed plans are illustrated in a series of site maps attached as Appendix A (Figures 2, 3, 4 in the EIS). Access to the site will be via both Kamehameha Highway and Walhee Road. The proposed project site is currently vacant and either covered with vegetation or graded and used as storage for dredged material from the adjacent newly-constructed lagoon.

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II. SCOPE OF WORK

The purpose of this study is to discuss relevant air pollution control standards and regulations as they apply to the planned project; to estimate present air quality in the project area; to evaluate future air quality in terms of use of the site as a residential/commercial area; to predict short- and long-term impacts that the project could have on the local atmospheric environment; and to discuss potential mitigative measures that could be employed to avoid or lessen these impacts.

III. AIR QUALITY STANDARDS

State of Hawaii and Federal Ambient Air Quality Standards (AQS) have been established for seven classes of pollutants (Table 1). An AQS is a concentration not to be exceeded over specified sampling periods which vary from pollutant to pollutant. Each of the regulated pollutants has the potential to cause some form of adverse health effect or to produce environmental degradation when present in sufficiently high concentration. Federal AQS have been set at levels below those known to cause adverse effects, but State of Hawaii AQS have been set at significantly lower levels for most pollutants. Federal AQS have been divided into Primary and Secondary levels. The Primary AQS are designed to prevent adverse health impacts while Secondary AQS refer to welfare impacts such as decreased visibility, damage to vegetation, animals, or property, diminished comfort levels, or a reduction of the aesthetic values associated with good air quality. Each Federal AQS is a level not to be exceeded more than once per year, but State of Hawaii AQS are specified as levels not to be exceeded at any time.

Federal research regarding the adequacy of current AQS is ongoing. At present there is an EPA proposal to lower the one-hour Federal AQS for carbon monoxide from 35 parts per million (40 milligrams per cubic meter) to 25 parts per million (about 29 milligrams per cubic meter).

There is presently a desire on the part of the State of Hawaii air pollution control agency (Department of Health) to eliminate State AQS for those pollutants covered by Federal Prevention of Significant Deterioration (PSD) Regulations. These regulations apply to areas where the Federal AQS are currently being met. With the exception of small areas in the vicinity of major power generating facilities most of the State of Hawaii falls within this category. For purposes of PSD regulations, air pollutants have been divided into two categories: PSD Set I and PSD Set II. PSD Set I includes particulate matter and sulfur dioxide. The PSD Set II pollutants are carbon

assumed that existing Air Quality Standards will apply at least through the construction phase of the project.

monoxide, hydrocarbons, lead, nitrogen oxides, and ozone.

PSD Set I regulations were issued in June, 1978, and require use of best available control technology (BACT) for all major new sources of particulate matter and sulfur dioxide. Specific increments are set for how much additional degradation will be permitted in specific areas. Under these regulations there are three types of areas considered: Class I areas where maximum protection of existing air quality is desired, Class II areas where some degradation of existing air quality can be tolerated, and Class III areas where heavy industrialization and associated air quality degradation will be permitted (within specified limits). Most of Oahu and all of the project area, is designated as Class II. Since no major new sources of particulate or sulfur dioxide emissions are associated with this particular project, the PSD Set I regulations are important only in that they should prevent any serious increase in the levels of these particular pollutants because of the establishment of new emission sources outside the project boundaries.

PSD Set II regulations are now in the process of being developed. The Set II pollutants are emitted primarily by mobile sources and will thus require a more comprehensive regulatory approach.

It is not anticipated that the PSD Set II regulations will be promulgated in time to affect planning for this particular project, but once promulgated such regulations could have the effect of limiting emissions of these pollutants from emission sources or source areas outside the project boundary.

During the next few months the Federal Clean Air Act is being reviewed by Congress. This review process could result in substantial revisions to existing goals and the regulatory means to achieve them. At this point it is impossible to predict what impact, if any, this review process will have on both Federal and State rules and regulations regarding the direct or indirect air pollutant emissions associated with this project. For purposes of this study it will be

IV. PRESENT AIR QUALITY

There are no ambient air quality monitoring stations within the immediate vicinity of the proposed project. For a windward, shoreline area such as this with no industrial activity upwind for thousands of miles it seems reasonable to assume that present air pollutant levels are very low. There are no air pollutant emission sources within the project area (other than temporary piles of dredged material from the lagoon adjoining the property). The only significant sources of man-made air pollutants are motor vehicles traveling along Kamehameha Highway and Wahee Road adjacent to project boundaries.

Natural air pollutant producers which might affect air quality in the project area include the ocean (sea spray), plants (aero-allergens), dust, or perhaps a volcanic eruption on the Island of Hawaii. Concentrations of air pollutants from these sources should be fairly uniform for most windward Oahu shoreline locations. There is no agricultural activity requiring open field burning in the project area.

The only long-term air pollution monitoring station along the windward Oahu coast is located in Waimanalo, about 12 miles southeast of the project site (Figure 2). A summary of particulate measurements collected at this location is presented in Table 2. Average readings of particulate levels at Waimanalo are only about one-half of allowable annual levels and the 24-hour AQS has not been exceeded there since monitoring began in 1975.

V. SHORT-TERM AIR QUALITY IMPACT OF PROJECT CONSTRUCTION

During the site preparation and construction phases of this project it is inevitable that a certain amount of fugitive dust will be generated. Field measurement of such emissions from apartment and shopping center construction projects has yielded an estimated emission rate of 1.2 tons of dust per acre of construction per month of activity. This figure assumes medium level activity in a semi-arid climate with a moderate soil-silt content. In fact, it is nearly impossible to predict daily emission levels of particulates from this source. Since the construction area is fairly level, grading and dirt-hauling activities should be minimal.

It is also inevitable that construction equipment used on site will emit some air pollutants in the form of engine exhausts. The largest equipment is generally diesel-powered. For this equipment, individual carbon monoxide emission rates are no greater than those for an average automobile, but nitrogen dioxide emissions can be quite high. Fortunately, nitrogen dioxide emissions from other sources in the area should be minimal and overall pollutant emissions from construction equipment should be minor compared to levels generated on nearby Kamehameha Highway.

VI. AIR QUALITY IMPACT OF INCREASED ENERGY UTILIZATION

With about 96,000 square feet of commercial/retail area the proposed complex could be expected to require about 257,000 Kwh of electricity per month. The electrical demand of the 21 private residences (when eventually constructed and occupied) should be a much smaller 8,000 to 10,000 Kwh per month. If all this demand is met by burning fuel oil the incremental requirement could be as much as 560 barrels of oil per month. Hawaiian Electric Company, however, will have some future options available to meet this demand other than burning fuel oil. These include Wind Farms further up the coast on the North Shore at Kahuku and the possibility of a Ocean Thermal Energy Conversion Plant off the leeward coast. Should all the demand be met by burning fuel oil, the major air quality impact is likely to be increased sulfur dioxide and particulate levels in the Kahe Power Plant area on the Waianae coast.

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VII. AIR QUALITY IMPACT OF INCREASED TRAFFIC

Once the proposed Kahaluu Commercial and Residential Development is completed the complex in itself will not produce any air pollutant emissions other than small air conditioner losses and periodic cooking aromas. But by serving as an origin and destination for various vehicular shopping trips, the project will be an indirect contributor to increased air pollutant levels in the area.

Motor vehicles are major sources of carbon monoxide, hydrocarbons and nitrogen oxides. Those using fuel which contains lead as an additive emit some airborne lead as well. The major control measure designed to reduce vehicular lead emissions is a Federal law requiring the use of unleaded gasoline in most new automobiles. As older cars are gradually removed from the vehicle fleet, lead emission should decrease substantially. Federal control regulations also call for increased efficiency in removing carbon monoxide from vehicle exhausts. By the year 2000, carbon monoxide emissions from the vehicle fleet then operating should be about half the levels now emitted. Decreases in hydrocarbon and nitrogen oxide emissions have been mandated as well.

With increasing pressure to achieve greater fuel economy and to aid economically-troubled U.S. automakers, there will be a continuing tendency on the part of the U.S. Congress to relax or even eliminate some existing air pollutant emission control goals. It is thus difficult to forecast future vehicular emission rates with any degree of certainty. It does seem logical to conclude, however, that if each year's crop of new vehicles burns less fuel to travel the same distance, then fleet emissions should also decrease each year as older, less efficient vehicles are removed from the roadways.

To gain an overview of the general trends that currently mandated control measures are likely to produce in the project area, a mesoscale vehicular emissions analysis has been carried out.

A. Emissions Analysis

For this analysis, a one mile segment of Kamehameha Highway adjacent to the intersection with Waihee Road is considered. The project is not likely to be completed before 1982, but for comparison purposes that year is used as the starting date for maximum project-related traffic. The traffic study for the project indicates that the completed project is likely to generate 4,382 trips along this roadway on a 24-hour basis, while probable 24-hour volumes for Kamehameha Highway are expected to be 14,113 in 1982, 19,772 in 1990, and 27,222 in 2000.

In fact these forecast travel levels do assume some growth because of projects constructed in business-zoned property such as this, but to show maximum possible impact the forecast project-related traffic has been added directly to these published forecasts to yield expected future pollutant emission levels with and without the project.

Vehicular emission rates were determined using Table F-15 of EPA's Mobile Source Emission Factors (1978), which contains the following inherent assumptions:

- (1) a vehicle mix that is 88.2 percent automobiles with the remainder being light trucks and vans;
- (2) average ambient temperature of 75° Fahrenheit;
- (3) average vehicle speed of 19.6 miles per hour; and
- (4) 20.6 percent of the vehicles operating under cold start conditions.

To allow for potential slippage of planned emission reductions, values for 1981/1982 were calculated using published 1980 estimates, values for 1990 were based on 1987 estimates, and those for the year 2000 on 1995 estimates.

Results of this analysis are shown in Figure 3. There will clearly be an increase in vehicular emissions of carbon monoxide,

hydrocarbons, and nitrogen dioxide along Kamehameha Highway if the project is completed as planned, but the differences in hydrocarbon and nitrogen dioxide emissions with or without the project are very small. The greatest impact of increased traffic from the project will obviously be in the form of increased carbon dioxide emissions.

Although Figure 3 shows that some decrease in carbon monoxide emissions from present levels can be expected in the late 1980's 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 more detailed microscale analysis.

B. Carbon Monoxide Concentration Analysis

Three receptor sites in the project area were selected for detailed analysis (see Figure 1). Site 1 was selected because it represents the closest buildings to the proposed project (Key Project) and is a good indicator of concentration levels likely to occur in the proposed residential subdivision mauka of the shopping center. Site 2 is the only major intersection in the project area. Site 3 will become a significant intersection once the project is completed. Sites 2 and 3 are presently uninhabited, but they were selected to assess the highest traffic-related carbon monoxide levels likely to exist in the area under adverse meteorological conditions.

Detailed traffic counts for Kamehameha Highway and Waihee Road were conducted on a three day weekend in June 1981. From these counts it was determined that peak volume on Kamehameha Highway occurs on Saturday afternoons from 2:00 to 3:00 p.m. At this time the vehicular mix is 84 percent automobiles, 10 percent light duty trucks less than 6,000 pounds gross vehicle weight (GVW), 5 percent light duty trucks greater than 6,000 pounds GVW, and 1 percent diesel buses. The same mix is assumed for Waihee Road with 85 percent automobiles and no buses. Peak volume on Waihee Road actually occurs on weekday mornings from 7:00 to 8:00 a.m.,

but the weekend afternoon time period was selected for analysis because combined volume on Kamehameha Highway and Waihee Road is greatest then and the proposed shopping center would have a low traffic volume early in the morning on weekdays.

Vehicle speeds on Kamehameha Highway past the project area average 35 mph in unrestricted flow. Traffic on Waihee Road has a stop sign at Kamehameha Highway and it is assumed that the new entrance/exit points to the shopping center will also have stop signs. Traffic upstream from the stop signs and moving within the parking area is assumed to travel at average speeds of 5 mph while traffic downstream from turns and stop signs is assumed to travel at 15 mph.

Vehicular carbon monoxide emissions for 1981, 1982, 1990, and the year 2000 were determined using a Federal Highway Administration tabulated version of the Environmental Protection Agency's computerized Mobile Source Emissions Model (MOBILE I). For the mid-afternoon traffic situation considered here an ambient temperature of 80° Fahrenheit was assumed with 10 percent of the vehicles operating in the cold start mode.

The EPA computer model HIWAY was used to estimate resulting carbon monoxide concentrations at the selected receptor sites with or without the increased traffic expected to be generated by the proposed project. Stability category is the most likely to prevail in the afternoon in a suburban area such as this. A uniform wind speed of one meter per second was used to simulate worst case windflow but the worst case wind direction was determined based on the geometry of the pollutant-contributing areas near each of the receptor sites. The analysis specifically included 3 source areas for each site--Kamehameha Highway, Waihee Road, and the parking area (which was treated as a wide line source).

Carbon monoxide contributions from source areas not directly considered in the analysis were assumed to be minimal and a background carbon monoxide level of zero was used in the analysis.

Worst case wind direction for Site 1 was east northeast (a very common occurrence in this area). For Site 2 the worst case wind direction was south (fairly rare), and for Site 3 it was west (also rare). Values computed are for a height of 1.5 meters (breathing level) at a distance of 2 meters from roadways.

From the traffic consultant's study probable peak volumes for each of the roadways was used for the 'without project' computations and a peak hour volume of 506 shopping-related computations and 14 residential-related vehicles were added to produce 'with-project' volumes. The shopping volume was divided equally between each of the approach directions and between each of the potential commercial access routes. All the residential volume was assigned to Waihee Road.

Results of the peak-hour computations are shown in Figure 4. Estimated carbon monoxide levels with or without the project are within State and Federal Standards. The traffic consultant has concluded that traffic volumes on Kamehameha Highway should warrant a widening effort to four lanes sometime after 1990.

The air quality analysis considered both the two- and four-lane configuration for Kamehameha Highway and found only slight improvement for the four-lane configuration assuming traffic can continue to flow at 35 mph. If traffic congestion occurs and speeds on Kamehameha Highway in the vicinity of the Waihee Road intersection are reduced to less than 10 mph, then carbon monoxide levels above the peak hour State of Hawaii AQS can be expected to occur in any year until the late 1990's.

Results of the peak eight-hour carbon monoxide analysis are shown in Figure 5. For this analysis, two correction factors are applied to the results shown in Figure 4. The first is a meteorological persistence factor of 0.6 recommended in EPA Guidelines as a way to estimate the greater variability in wind flow that would occur over an eight-hour time period as compared to a single one-hour period. The second factor reflects the fact that the average eight-

VIII. MITIGATION MEASURES

A. Short-Term

As indicated by the foregoing analysis, the only direct adverse air quality impact that the proposed Kahaluu Commercial and Residential Development is likely to create is the emission of fugitive dust during the construction phase of the project. State of Hawaii Department of Health Rules and Regulations (Chapter 43, Section 10) stipulate the control measures that are to be employed to reduce this type of emissions. Primary control consists of wetting down loose soil areas with water, oil, or suitable chemicals. An effective watering program can reduce particulate emission levels from construction sites by as much as 50 percent. Other control measures include good house-keeping on the jobsite and pavement or landscaping of bare soil areas as quickly as possible. Since there is no housing in the immediate area of the project these control measures should be adequate to insure that construction dust is not a problem.

B. Long-Term

Once completed, the Kahaluu Commercial and Residential Development is expected to have little direct impact on the air quality of the surrounding region. The only potential long-term indirect air pollution contributions will be in the form of increased power plant emissions to provide electricity to the project and increased exhaust emissions from the traffic attracted to the project.

Planners for the project can do very little to mitigate either of these potential impacts. It would be possible to cut down electrical requirements a bit by installing solar water heaters for restaurants and other water users in the commercial portion of the project and it is likely that many of the private homes will have such heaters installed. Theoretically it is also possible that the project could install its own wind-energy system, but at present it is not clear that such action would be viable from an economic standpoint.

hour traffic flow is considerably less than the peak hour volume. For Kanehameha Highway and the parking and access points within the project this figure is 0.85, for Waiehe Road there is no correction factor since the average eight-hour volume on a weekend is not significantly different from the volume which occurs during the 2 to 3 p.m. period used in the analysis. As shown, computed eight-hour levels are all within acceptable AQS.

The planned 115-foot buffer area between the project area and Kamehameha Highway is clearly an effective air pollution mitigative measure since air pollution concentrations decrease exponentially with distance from the source. If the buffer area is planted with sufficiently dense landscaping it can serve to screen some particles and carbon monoxide from the air.

Planners, however, can do very little to decrease emission levels from vehicles operating within or near the project area. It is also not in the best interest of a commercial project such as this to attempt to restrict vehicular traffic through the area. The only other way to potentially decrease vehicular emissions associated with the project is to insure easy and unimpeded traffic flow through the parking area and in and out the access routes. To this end it would be undesirable to install traffic lights at either of the proposed access routes since vehicular emissions increase dramatically in the vicinity of traffic signals. The addition of a left-turn lane on Kamehameha Highway at Waihee Road would help to expedite traffic flow at this critical intersection and would probable constitute the most constructive mitigative measure that could be undertaken to reduce air pollutant emissions in the project area.

Except during periods of exceptional traffic congestion, however, pollutant concentrations from vehicular sources in and around the project are expected to be within allowable air quality standards and no other mitigative measures seem necessary.

IX. SUMMARY

1. The proposed Kahaluu Commercial and Residential Development involves construction of a shopping center and 21 residential lots on a 15.3-acre site near the intersection of Kamehameha Highway and Waihee Road. The site is presently vacant.
2. Present air quality in the project area is estimated to be very good since there are no major contributing sources other than vehicles traveling on roadways along this part of the windward Oahu coast.
3. Except for short-term dust emissions during the construction phase of the project no significant direct air quality impacts are expected.
4. Indirect air quality impacts are likely to result from demands for electrical energy. The most likely impact will be in the area of the Kahe Power Plant in the Waianae area where slight increases in particulates and sulfur oxide emissions can be expected.
5. Increased traffic generated by the project will increase carbon monoxide, hydrocarbons and nitrogen dioxide in the project area and along Kamehameha Highway. Except during periods of severe traffic congestion, however, predicted levels of these pollutants are expected to be within allowable State and Federal Ambient Air Quality Standards.
6. Adequate mitigative measures are available to control emissions of fugitive dust from construction activities and a large, densely landscaped buffer zone between the project and Kamehameha Highway can help to remove some vehicle-generated pollutants from the air, but no special mitigative measures seem necessary to ensure that air quality standards will be met by the project as proposed.

REFERENCES

1. Au, Henry T., Traffic Impact Statement for Kahaluu Commercial Project, June, 1981.
2. U.S. Environmental Protection Agency, Office of Air Planning and Standards, Completion of Air Pollutant Emission Factors, August 1977.
3. U.S. Environmental Protection Agency, Office of Air and Waste Management, Mobile Source Emission Factors, March 1978.
4. U.S. Environmental Protection Agency, Office of Air, Noise and Radiation, User's Guide to MOBILE 1: Mobile Source Emission Model, August 1978.
5. 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.
6. 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.
7. 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.

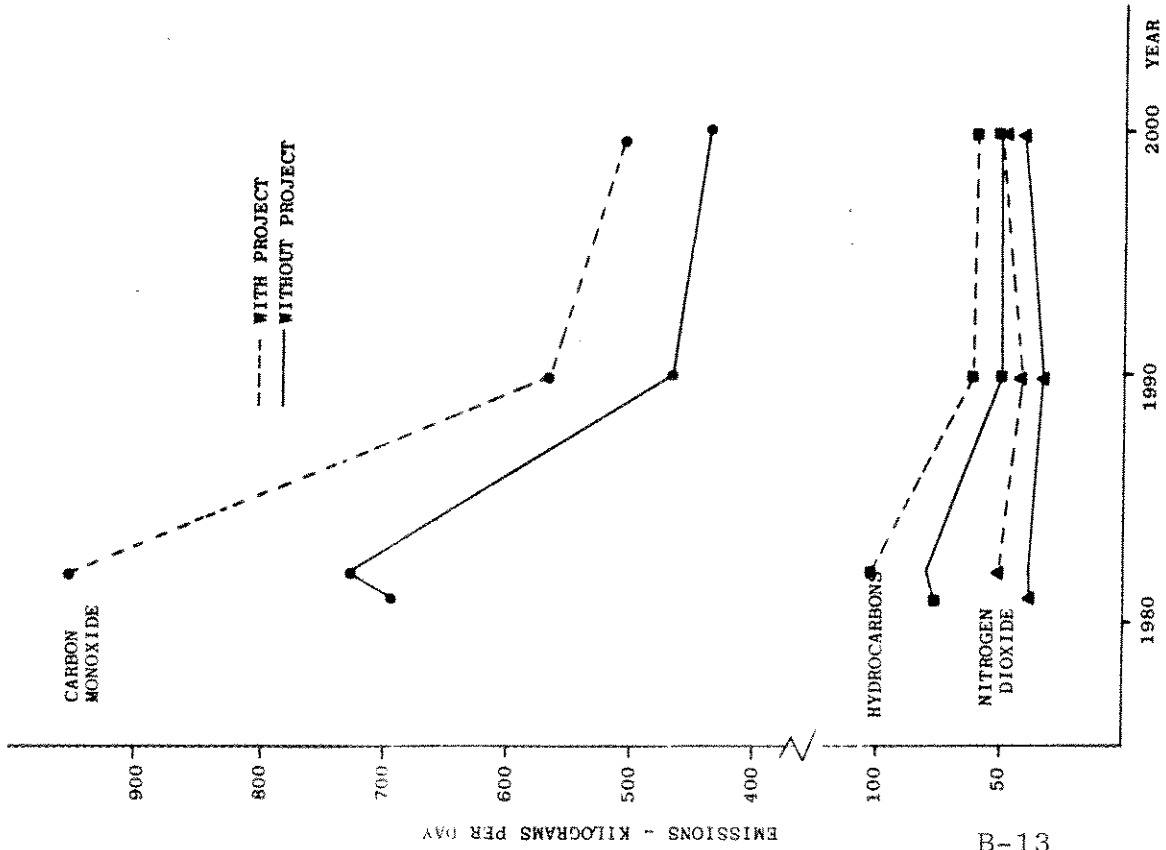


FIGURE 3. EMISSIONS ANALYSIS - KAMEHAMEHA HIGHWAY FRONTING PROJECT SITE

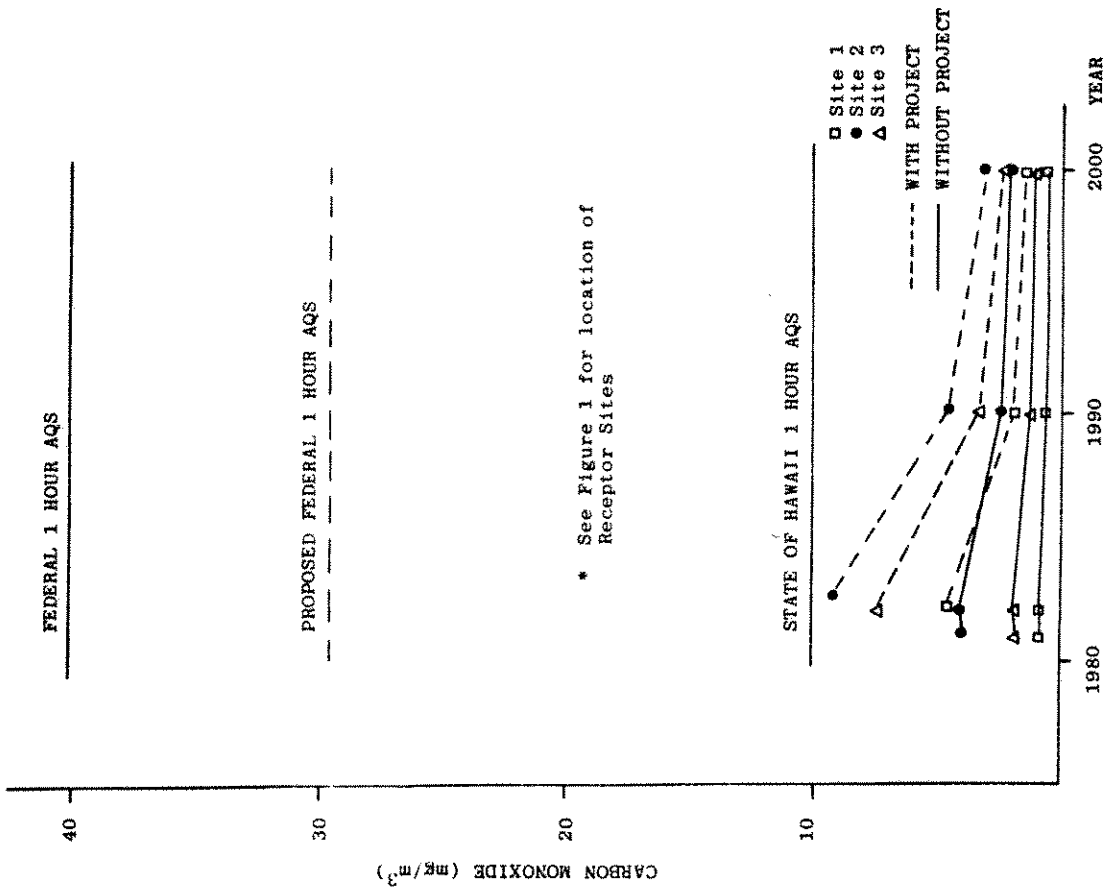


FIGURE 4. ESTIMATED PEAK HOUR CARBON MONOXIDE AT SELECTED SITES IN PROJECT AREA

TABLE 1
SUMMARY OF
STATE OF HAWAII AND FEDERAL AMBIENT AIR QUALITY STANDARDS

POLLUTANT	SAMPLING PERIOD	FEDERAL STANDARDS		STATE STANDARDS
		PRIMARY	SECONDARY	
1. Suspended particulate matter (micrograms per cubic meter)	Annual Geometric Mean	75	60	-
	Annual Arithmetic Mean	-	-	55
	Maximum Average in any 24 hours	260	150	100
2. Sulfur Dioxide (micrograms per cubic meter)	Annual Arithmetic Mean	80	-	20
	Maximum Average in any 24 hours	365	-	80
	Maximum Average in any 3 hours	-	1300	400
	Maximum Average in any 8 hours	-	10	5
3. Carbon Monoxide (milligrams per cubic meter)	Maximum Average in any 1 hour	-	40	10
	Maximum Average in any 3 hours	-	160	100
4. Hydrocarbons Non-methane (micrograms per cubic meter)	Maximum Average in any 1 hour	-	-	-
	Maximum Average in any 3 hours	-	240	100
5. Ozone (micrograms per cubic meter)	Annual Arithmetic Mean	-	100	70
	Maximum Average in any 24 hours	-	-	150
6. Nitrogen Dioxide (micrograms per cubic meter)	Average Over Calendar Quarter	-	1.5	-

Source: 40 Code of Federal Regulations, Part 50 and State of Hawaii Public Health Rules and Regulations, Chapter 42.

* See Figure 1 for location of Receptor Sites

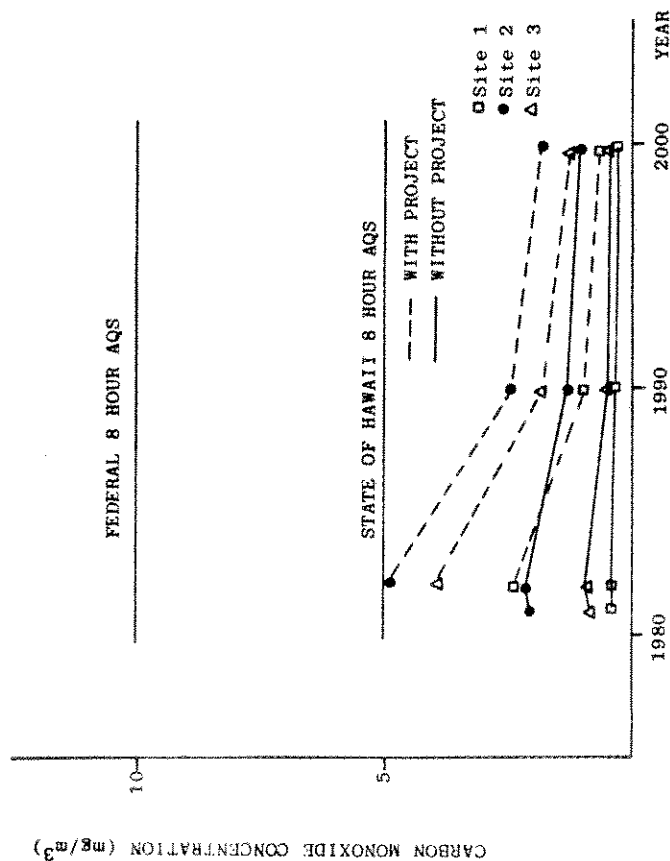


FIGURE 5. ESTIMATED EIGHT HOUR CARBON MONOXIDE AT SELECTED RECEPTOR SITES IN PROJECT AREA

TABLE 2

SUMMARY OF LONG-TERM PARTICULATE MEASUREMENTS AT WAIMANALO

(Micrograms Per Cubic Meter)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981*</u>
No. of Samples (24-hour)	86	71	51	60	59	57	15
Range	13-65	12-69	14-59	15-61	12-61	10-90	20-72
Acreage	29	25	31	29	30	29	33
No. of Times State AQS Exceeded	0	0	0	0	0	0	0

* Data through March, 1981.

SOURCE: State of Hawaii Department of Health

APPENDIX C

June 14, 1981

MEMORANDUM

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

FROM: Gordon L. Dugan *Gordon L. Dugan*
Environmental Consultant
704 Ainapo Street
Honolulu, Hawaii 96825

SUBJ: Report entitled "Environmental Aspects of Storm Water Runoff
Kahaiuu Commercial and Residential Development, Kahaluu,
Koolauapoko, Oahu, Hawaii.

The above referenced report considered the volumetric, nitrogen, phosphorus, and suspended solids changes that are expected to occur from the development of the residential area and the shopping center contained within the project. In addition biocides and heavy metals were also discussed.

In general no significant storm water runoff increases are expected from the development of the 15.3 acre project. Likewise the slight increases in the nutrients, nitrogen and phosphorus, are considered insignificant. The suspended solids load should decrease as a result of the project. In terms of heavy metals, lead is the only constituent that apparently exceeds the limits that were established or recommended for drinking water. Lead should be steadily decreasing as more and more vehicles begin and continue to use unleaded gasoline. Biocides in present use are broken down in a relatively short period of time.

Please advise me of any questions you have concerning this report.

ENCLOSURE:

Environmental Aspects

of

Storm Water Runoff

Kahaiuu Commercial and Residential Development
Kahaluu, Koolauapoko, Oahu, Hawaii

June, 1981

by

Gordon L. Dugan, Ph.D.
Environmental Consultant

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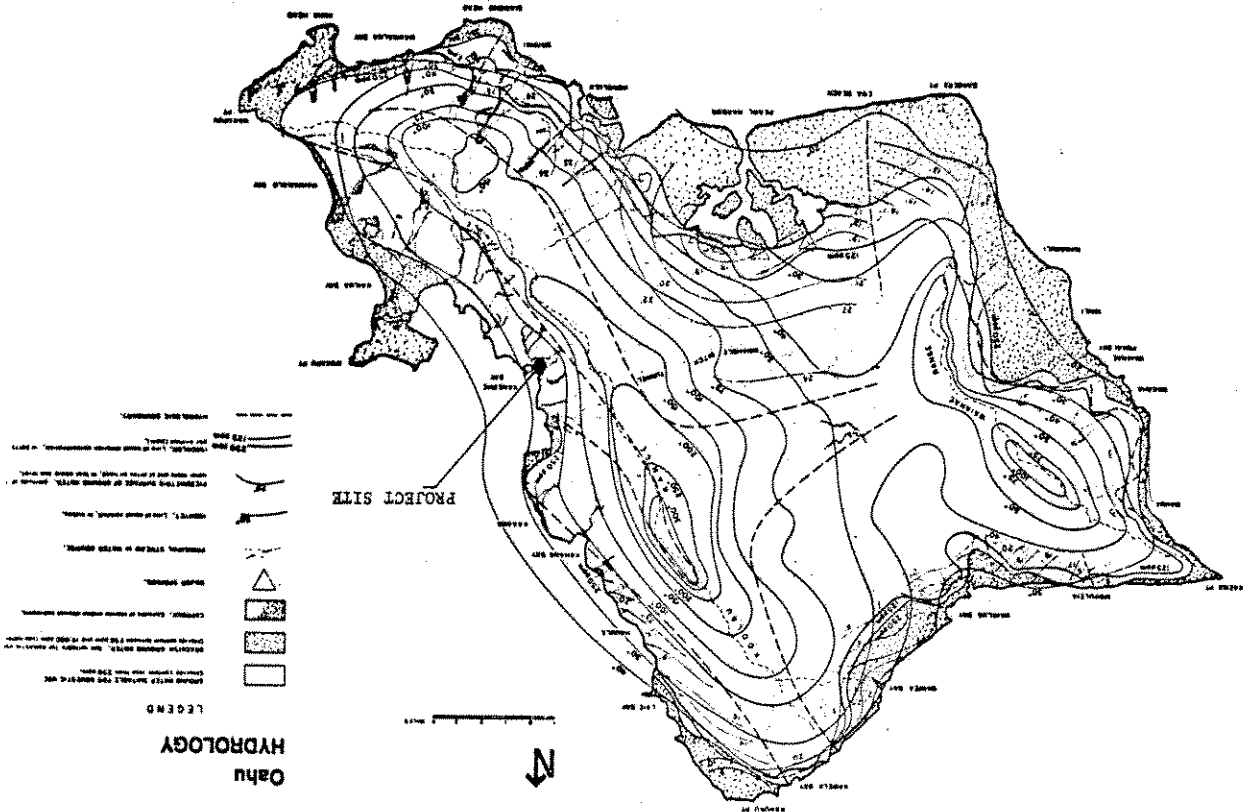
INTRODUCTION

The proposed Kahaluu Commercial (Shopping Center) and Residential Development, located at Kahaluu in Windward Hawaii, as shown in Figure 1, is fronted by Kamehameha Highway and Waihee Road, and is adjacent to a recently constructed 28-acre multi-purpose lagoon (Figure 2). The project site is a portion of the Waihee drainage basin which extends from the sharp crested Koolau Mountain range to Kaneohe Bay. The climate at the site is typical of that for Windward Oahu, with a mean annual rainfall of approximately 60-in. (Figure 1), and a temperature that averages 75°F throughout the year.

The 15.3-acre project, as outlined in Figure 2, consists of 7 acres of commercial and 8.3 acres of residential development. The commercial complex includes 4 single-story buildings, covering 96,000 sq ft plus paved parking space, while the residential subdivision, positioned on the mauka portion of the property, includes 21 single family residential lots, with a minimum size of 10,000 sq ft, in addition to a 13,200 sq ft lot that will be developed into a park and playground. The proposed project area, presently vacant, has been used as a site for the stockpiling of material removed from the construction of the adjacent multi-purpose lagoon. Over 1/2 of the project site area presently does not have any vegetation and most of the remainder is only sparsely covered with grass. This stockpiled material will be leveled-off with excess material removed.

The concern with urban development of undeveloped, agricultural, or rural land, such as herein proposed, is the potential changes in the

Figure 1, Hydrologic and Geologic Characteristics of Oahu (from "2020 Plan," Board of Water Supply, City and County of Honolulu, pg 13, February 1971)



PURPOSE AND SCOPE

The purpose of this study is to evaluate the environmental impact of the proposed Kahaluu Commercial and Residential Development as it relates to surface water runoff. From an assemblage of available baseline hydrologic and water quality data, an estimate of the existing and projected volume and quality characteristics of surface water runoff from the project site was made, along with an assessment of the environmental impact resulting from this runoff.

METHODOLOGY

Assessment Procedure

The environmental impact of the proposed project as it relates to surface water runoff was evaluated by estimating the changes in runoff volume and contaminant load that would occur within the 15.3-acre site after project completion. This required the determination of

- storm runoff volumes for existing and developed conditions
- storm runoff quality for existing and developed conditions
- contaminant loads for existing and developed conditions
- changes in contaminant loads from existing to developed conditions

No serious attempt was made to compare these changes with contributions from the entire or contributing drainage area. In this situation, a comparison of the project site area to its entire drainage area would significantly negate apparent changes caused by the land use change within the project site. For example, the project site area of 15.3 acres represents less than 1% of the total drainage area. From this, it can be argued that in the long-term, any changes in runoff volume and contaminant load brought about by land use changes within the project site would be undetectable. While this may be true, it is important to recognize that the impacts of each project within the drainage basin are accumulative, such that in combination, the resulting overall impact can be significant. The information generated for each project will therefore be invaluable to regulatory agencies and planners. In essence, an "inventory" of individual project impacts, such as presented in this study,

to needs/be maintained. This study is intended to add to this inventory.

Storm Runoff Volume

Methods currently available to estimate surface water runoff volume from a specific storm event over a drainage area require the use of rainfall-runoff coefficients which are a function of storm intensity, storm duration, and hydrology factors such as land management practices, vegetative cover, soil type, soil moisture conditions, etc. This means that over a drainage area, a number of different rainfall-runoff coefficients would need to be determined to account for the varying hydrologic factors that would exist. More commonly, however, these differences are ignored in favor of a single coefficient for a particular land use over a given rainfall intensity range. While this approach is convenient, it is less representative of the actual situation.

In order to gain more representative estimates of storm runoff volume, a method developed by the Hawaii/Simulation Laboratory (HESL) of the University of Hawaii was utilized (Lopez, 1974; Lopez and Dugan, 1978).

The HESL method incorporates data from the U.S. Soil Conservation Service (SCS) and the U.S. Weather Bureau (1962). The SCS data includes soil maps (Foote et al, 1972) and curve numbers for various soil groups. These curve numbers have been obtained from empirical data (including precipitation, soil, changing soil moisture conditions, and vegetative cover) generated from the classification of thousands of soils throughout the nation. These soils have been classified into four groups,

labeled A, B, C, and D, with Class A having the highest water intake rates and Class D the lowest. These curve numbers, modified for Hawaiian conditions, pertain only to non-urban conditions. For urban conditions, the HESL method utilizes information published by Miller and Viessman (1973).

Storm Runoff Quality

The water quality parameters of primary interest in this study include sediment, nitrogen, and phosphorus.

Inasmuch as there is no baseline water quality data for storm water runoff from the project site itself, nitrogen and phosphorus levels of 0.74 and 0.07 mg/L, respectively, were estimated for the present (1980) conditions. These values, which were based on information published by Loehr (1972), were derived from nitrogen outputs of 3 lb/acre-yr and phosphorus outputs of one order of magnitude less; an annual rainfall of 60 in; and a rainfall-runoff coefficient of 0.3.

Representative suspended solids values in storm water runoff from the project site under existing conditions are again difficult to determine inasmuch as it is commonly presumed, by mainly indirect methods, that the majority of the annual suspended solid load is carried by the heavy storm water runoff events which tend to occur on an infrequent basis. For the present study, the concentration of suspended solids was based on the average measured and estimated suspended solids load per unit area from the streams flowing out of the entire Kaneohe Bay Drainage Basin, as reported by Jones et al.,(1971). The suspended solids concentration was calculated to be 1300 mg/L, based on the same rainfall

Table 1

Representative Storm Water Quality Data for Honolulu^a (Fujiwara, 1973)

	Residential ^b	Commercial ^c	Industrial ^d
Total Solids	511	278	246
Suspended Solids	252	142	12
COD	142	209	40
BOD	10	19	7
Dissolved Oxygen	7.1	5.7	6.7
NO ₃ -N	0.211	0.045	1.1
TKN	0.381	0.272	2.70
Total P	0.57	0.53	2.17
Ortho P	0.27	0.19	1.27
Grease	2.8	1919	2.2
Lead	0.407	0.987	1.657
Chromium	0.013	0.021	0.013
Zinc	0.512	0.792	0.729
Copper	0.036	0.036	0.021
Iron	0.377	0.295	0.049
Total Coliform	83,300	33,500	11,500
Fecal Coliform	1,965	463	580
Fecal Strept	6,393	7,900	7,350

^a All units in mg/l except total coliform, fecal coliform, and fecal strep which are listed as No./100 ml

^b Storm water samples collected on Aupuni Street near Nuhelewai Stream

^c Storm water samples collected at Beretania Street between Maunakea and River Streets

^d Storm water samples collected near Iwilei and Pacific Streets

and runoff coefficient (60 in and 0.3, respectively) as used for the nitrogen and phosphorus concentrations.

Quality data for urban storm water (post-development conditions) is sparse, both locally and nationally. Furthermore, the reported data have been highly variable and diverse. Loehr (1974) compiled urban storm runoff quality data collected from throughout the United States, as well as from a few international locations. Locally, Fujiwara (1973) reported urban storm water quality data collected from storm drains in different drainage areas of Honolulu, as shown in Table 1. For the present study, Fujiwara's results were used to simulate post-development runoff quality, which were, respectively, 0.60, 0.57, and 250 mg/L, for nitrogen, phosphorus and suspended solids. Attention is likewise drawn to the heavy metal content measured in residential runoff.

Contaminant Loads

Applying the contaminant concentrations to the estimated runoff volumes yields the contaminant loads for both baseline and post-development conditions.

Changes in Contaminant Loads

Having established the sediment and nutrient runoff loads for both the existing and proposed land uses, the changes in the loads were then computed and examined.

DRAINAGE ASPECTS

The proposed project area, according to the Federal Flood Insurance Rate map, is within Zone A of the 100-yr flood limits (Austin, Tsutsumi & Assoc., 1981), which indicates that base flood elevations and flood hazard factors for the project area have not been determined. Recently however, the City and County of Honolulu and the U.S. Department of Agriculture, Soil Conservation Service, developed the 28-acre multi-purpose lagoon, shown on Figure 2, which is adjacent to the proposed project site and integral with Kaneohe Bay. The lagoon is designed to handle runoff resulting from a 100-yr flood frequency storm from Ahuimanu, Kahaluu, and Waihee Streams in addition to the increased runoff expected from future development within the drainage area.

An analysis of the expected limits of the 100-yr flood in relation to the project area, recently performed by Austin, Tsutsumi, & Assoc. (1981), concluded that presently only the mauka tip of the property, approximately 1-acre, is within the 100-yr flood limit.

It is proposed that the off-site drainage mauka of the project site will be intercepted by a concrete lined channel along the southwest property line. The channel connects to a subsurface pipe system which, in turn also drains the residential portion of the project. The combined flow will then discharge into the lagoon at the southeast corner of the shopping center. The majority of the shopping center, except for a small area adjacent to Kamaheha Highway, which will be handled by an existing drainage system, will drain into the lagoon at a second outlet (Austin, Tsutsumi & Assoc., 1981).

The majority of the project site soils, except for less than an acre that is termed, Pearl Harbor, is designated as Tropaquepts, which is not listed as being classified in one of the previously discussed SCS runoff groups, A through D (Lopez and Dugan, 1978). Pearl Harbor soil is in Class D, which is the poorest infiltrative group, or the group with the highest surface water runoff. Tropaquepts are termed as "poorly drained" soils, which would seem to indicate that they should be designated as C or D, inasmuch as Pearl Harbor soil is rated as "very poorly drained". Thus, for conservative reasons the soils of the entire 15.3 acre project site will be considered as representative of Class "C" soils.

RESULTS

The estimated storm water runoff and constituent changes due to the proposed Kahaluu Commercial and Residential Development Project are shown in Table 2. The values presented, it must be emphasized, are for comparative purposes only, and are not intended to be representative of the accuracy implied by the practice of reporting results to one decimal place. This was done primarily for convenience of calculations and balancing.

Storm Runoff Volume

As seen in Table 2, the storm runoff for the 1-yr/1-hr duration storm for post-development is 3.5 times greater than for pre-developed conditions; however, as the storm duration and recurrence interval increases, this difference reduces to 1.2. The primary reason for the diminishing differences in runoff volume for pre- and post-development conditions is that soil permeability decreases as storm magnitude increases. With low intensity and short duration storm events, the existing land use allows significant percolation to occur (even though these are poorly drained soils), and relatively little runoff is generated. However, as the storm intensity and duration increases, the ability of the soil to accept water decreases and greater runoff occurs, i.e., the soil becomes more impermeable. Thus, as the storm events increase in magnitude, the permeability conditions under the existing land use approaches, but does not reach, that representative of fully developed conditions.

Estimated Storm Water Runoff Volume and Constituent Changes due to the Proposed Kahaluu Commercial and Residential Development, Kahaluu, Windward Oahu, Hawaii

Table 2

Storm	Duration	Recurrence Interval	Quantity	Hydraulic		Nitrogen		Phosphorus		Suspended Solids	
				AP event	Full event	1p event	1p event	1p event	1p event	1p event	Full event
Storm ^a	1 hr	1 yr	1	2.1	+1.5	1.2	+2.2	0.3	+0.2	1.04	+0.2
				2.3	+2.0	3.3	+2.7	0.5	+0.2	2.37	+0.2
	1	10	1	4.0	+2.2	3.6	+2.8	0.6	+0.2	3.13	+0.2
				3.8	+2.4	6.4	+2.8	0.8	+0.3	4.97	+0.3
	1	25	1	4.6	+2.4	4.5	+3.0	0.8	+0.3	3.94	+0.3
				4.3	+2.5	7.5	+3.0	0.9	+0.3	5.50	+0.3
	1	50	1	5.3	+2.5	5.7	+3.0	0.9	+0.3	4.97	+0.3
				2.8	+2.6	6.3	+3.0	0.9	+0.3	5.50	+0.3
	1	100	1	5.7	+2.6	6.3	+3.0	0.9	+0.3	4.97	+0.3
				5.2	+2.7	7.1	+3.0	1.0	+0.3	6.22	+0.3
24	24	5	11.8	+3.4	17.0	+2.2	1.7	+0.2	14.92	+0.2	
			8.4	+3.4	19.2	+2.2	1.9	+0.2	16.92	+0.2	
24	24	10	14.2	+3.4	21.8	+1.4	2.2	+0.1	19.11	+0.1	
			10.8	+3.7	23.2	+1.4	2.3	+0.1	23.37	+0.1	
24	24	25	16.9	+3.7	26.6	+0.9	2.7	+0.1	23.37	+0.1	
			13.2	+3.7	27.5	+0.9	2.8	+0.1	26.61	+0.1	
24	24	50	18.8	+3.7	30.3	+0.3	3.0	+0.1	26.61	+0.1	
			15.1	+3.9	35.8	+0.3	3.1	+0.1	32.04	+0.1	
24	24	100	22.0	+3.9	36.5	+0.7	3.7	+0.1	32.04	+0.1	
			18.1	+4.11	42.1	+0.7	3.6	+0.1	37.47	+0.1	

a) From U.S. Weather Bureau "Rainfall Frequency Atlas of the Hawaii Islands" (1962).

b) Based on a nitrogen value of 0.74 mg/L for 1981 conditions and 0.60 mg/L for "Full" development.

c) Based on a phosphorus value of 0.07 mg/L for 1981 conditions and 0.57 mg/L for "Full" development.

d) Based on a suspended solids value of 1300 mg/L for 1981 conditions and 250 mg/L for "Full" development.

As would be expected, the greatest calculated incremental storm runoff volume (3.9 acre-ft) resulted from the 100-yr storm with a 24-hr duration. This volume of runoff averaged over the full 24-hr period would increase the runoff into the lagoon by less than 2 cfs. The peak magnitude of the 24-hr storm would, of course, be expected to occur over a shorter time period, which could double or even triple this value. However, a liberal considered increase of 5 cfs is relatively insignificant (0.025%) in comparison to the design capacity of the lagoon, which is nearly 20,000 cfs (Austin, Tsutsumi & Assoc., 1981).

Contaminant Load

Besides the changes in the volume of storm runoff, the quantity of the various constituents being transported is of equal, if not more important. However, as previously mentioned, estimates of water quality constituents resulting from a significant storm water runoff that occurs at the most only a few times a year is very perplexing, especially since only in recent years has information on this subject become available at both the local and national level.

The nitrogen, phosphorus, and suspended solids loads under both present and proposed land use conditions for storms of 1- and 24-hr duration at recurrence intervals of 1-, 5-, 10-, 25-, 50-, and 100-yr are shown in Table 2. It can be noted from Table 2 that the net change in nitrogen load ranges from an increase of 3.0 lb/event (for several standard storms to a decrease of 0.7 lb/event (24-hr/100-yr storm). For phosphorus, the net increase in load ranges from 0.3 lb/event (for several standard storms) to a decrease of 0.1 lb/event (24-hr/100-yr storm).

With respect to suspended solids, Table 2, shows a net decrease of 1 from 0.33 ton/event for the 1-hr/1-yr storm, to a 24.57 ton/event decrease for the 24-hr/100-yr storm.

It must be pointed out that the contaminant loads presented in this study are for comparative purposes only, and should not be taken as absolute values. They are intended to demonstrate 1) whether an increase or decrease in loads might be expected, and 2) the relative magnitude of these increases and decreases. The results of this study suggest that the relatively low output of nitrogen and phosphorus can be expected to increase only slightly in the runoff, while suspended solids should decrease.

Other water quality constituents of general concern include biocides and heavy metals. In general, the biocides in use today tend to break down more readily in comparison to the more long lasting types of a few years ago. Consequently, except for agricultural runoff, the types and concentrations are usually considered insignificant.

The long-term effects of heavy metals at the concentrations reported in Table 1 are not well-defined, despite the numerous studies on Kaneohe Bay water quality. To gain an insight into the significance of heavy metals a comparison can be made to the values required for potable (drinking) water.

In terms of heavy metals (Table 1) for post-residential-and-commercial development conditions: the chromium values of 0.013 and 0.021 mg/L, respectively, are 1/4 and less than 1/2 the 0.05 mg/L maximum concentration limit for drinking water, as specified in the State of Hawaii "Potable

Water Systems" regulations (PHR, 1977) (which were based on the Federal Safe Drinking Water Act); the copper concentration of 0.36 mg/L for both developments are only a fraction of the 1.0 mg/L limit suggested in the National Secondary Drinking Water Regulations (USEPA, 1979). (Copper is not called out in the State of Hawaii regulations); the zinc concentrations at 0.512 and 0.792 mg/L, respectively, are about 1/10 and 1/6 of the 5.0 mg/L suggested limit in the the National Secondary Drinking Water Regulations (not listed in the State of Hawaii regulations); the iron values of 0.377 and 0.295 mg/L, respectively, are slightly above and essentially equal to the 0.3 mg/L limit, for aesthetic reasons (color and taste), of the National Secondary Drinking Water Regulations (not listed in the State of Hawaii regulations); and the lead concentrations of 0.407 and 0.987 mg/L are significantly higher than the State of Hawaii limit of 0.05 mg/L for drinking water. It is ultra-conservative to compare storm water runoff quality to that required for drinking water, but the prospective can be seen that lead is the metal of concern in storm water runoff.

As can be observed in Table 1, the commercial column should be highly reflective of vehicular traffic inasmuch as it was collected at the heavily traveled Beretania Street in Honolulu.

With the national effort to remove or reduce the exposure of lead to the environment the largest potential source (presently) is generally alleged to be from the burning of leaded gasoline in internal combustion engines. However, new cars, especially since 1974, have been designed to only use unleaded gasoline, which is intended to reduce the output of lead to the environment. Thus, data is presently lacking, but the supposition is advanced that the concentration of lead from storm water

runoff should be steadily decreasing.

From the existing information on Kaneohe Bay, therefore, no detectable impacts attributable to heavy metals from the project site are expected. Furthermore, from most studies to date, Kaneohe Bay appears to be more sensitive to nutrient and sediment contamination.

This study has addressed the long-term impacts of the proposed project on storm water runoff and contaminant loads carried by the runoff. It is recognized that during construction, severe incidences of water pollution can occur as a result of grading activities, especially during wet weather periods. The primary pollutant would be suspended solids. 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 (1972) and in the State of Hawaii Department of Health's Water Quality Standards, Chapter 37-A (1979).

SUMMARY AND CONCLUSIONS

The proposed Kahaluu Commercial and Residential Development is located at Kahaluu in Windward Oahu, Hawaii, just mauka of Kamehameha Highway, and adjacent to a recently constructed 28-acre multi-purpose lagoon that is integral with Kaneohe Bay. The multi-purpose lagoon was designed to handle the 100-yr flood flow from Ahuimanu, Kahaluu, and Waihee Streams, in addition to the increased runoff expected from future development within the drainage area. Since the construction of the multi-purpose lagoon only approximately 1-acre of residential area of the 15.3-acre proposed project is presently included within the 100-yr flood limit.

The proposed project site consists of 8.3 acres of residential area (21 lots of at least 10,000 sq ft each) and 7 acres of commercial development (4 single-story buildings plus parking). The project site area, which receives a mean annual rainfall of approximately 60-in., is presently being used to stockpile material that was removed from the construction of the adjacent multi-purpose lagoon. More than $\frac{1}{2}$ of the area is not covered by vegetation and most of the remainder is only sparsely covered with grass.

The purpose of this study was to evaluate the environmental impact that the proposed Kahaluu Commercial and Residential Development is estimated to have on the quality of storm water runoff for 1-hr and 24-hr storms at several recurrence intervals that range from 1-yr to 100-yr.

The development of the 15.3-acre site is projected to increase the volume of storm water runoff from 1.5-acre-ft for the 1-hr/1-yr event

to 3.9 acre-ft for the 24-hr/100-yr event. These changes, however, result in increases of nearly 3.5 and 1.2 times, respectively, (1981) undeveloped and (full) developed conditions. The maximum peak discharge rate shouldn't increase over 5 cfs, which is insignificant in comparison to the 20,000 cfs flow the lagoon was designed for. These changes will, of course, manifest themselves in the constituent loads. Incremental comparisons were based only on the 15.3-acre project site itself, rather than on the entire drainage basin. Comparison to the entire drainage basin would severely negate the changes because the project site is only about 1% of the enclosed basin.

Based on the literature, local studies, and reasonable assumptions the quality of the major constituents studied (nitrogen, phosphorus, and suspended solids) for both undeveloped and developed conditions were ascertained to respectively be: 0.74 and 0.60 mg/L for nitrogen; 0.07 and 0.57 mg/L for phosphorus; and 1300 and 250 mg/L for suspended solids. The incremental changes for nitrogen showed an increase of 3.0 lb/event for several standard storms to a decrease of 0.7 lb/event for the 24-hr/100-yr storm. Phosphorus likewise incrementally increased from 0.3 lb/event for several standard storms to a decrease of 0.1 lb/event for the 24-hr/100-yr event. Suspended solids, on the other hand, decreased from 0.33 ton/event to 24.57 ton/event, for the 1-hr/1-yr and 24-hr/100-yr storms, respectively.

The constituent loads, it needs to be emphasized, are not considered as absolute, but rather they should be utilized to demonstrate trends.

Following this, the development of the proposed project site should slightly increase the nitrogen and phosphorus output for most storms, while the suspended solids should decrease.

The multi-purpose lagoon/Kaneohe Bay is the basic receptacle for quantity and quality changes in storm water runoff, but from the foregoing only slight increases are expected in total runoff, nitrogen, and phosphorus loads, while the suspended solids output should decrease, especially since most of the present project site area is presently bare soil.

Besides the aforementioned constituents there are concerns over potential changes in the output of biocides and heavy metals. Biocide data is quite limited for natural and urban runoff situations. In general the biocides presently in use tend to breakdown more readily in comparison to the more lasting types of a few years ago; consequently, except for agricultural runoff, the types and concentrations are usually considered insignificant.

The long-term effects of heavy metals at the concentrations reported in this study are not well-defined, despite the numerous studies on Kaneohe Bay water quality. However, with the exception of lead most of the analyzed heavy metals are below the limits required or recommended for drinking water. Based on local-derived storm water data, for 1972-1973, the concentration of lead is significantly higher than that acceptable for drinking water, although comparing the quality of storm water to drinking water is ultra-conservative. However, new cars, especially since 1974, have been designed to only use unleaded gasoline, which is intended to reduce the output of lead to the environment. Thus, data is presently lacking, but the supposition is advanced that the concentration of lead from storm water runoff should be steadily decreasing. No detectable impacts attributable to heavy metals are expected. From most studies to date, Kaneohe Bay appears to be more sensitive to nutrient and sediment contamination.

This study has addressed the long-term (full) developed impacts of the proposed project on storm water runoff and the contained constituent loads. It is recognized, however, that during construction, potential severe incidences of water pollution could occur as a result of grading activities, especially during storm conditions if proper erosion control measures are not intensively followed.

BIBLIOGRAPHY

U.S. Environmental Protection Agency, 1979. "National Secondary Drinking Water Regulations," Office of Drinking Water, EPA-570/9-76-000, Washington, D.C. 20460.

U.S. Weather Bureau, 1962. "Rainfall-Frequency Atlas of the Hawaiian Islands," Technical Paper No. 43, Washington, D.C.

Austin, Tsutsumi & Associates, 1981. "Proposed Kahaluu Shopping Center Flood Study and Preliminary Drainage Report Kahaluu, Koolauloko, Oahu, Hawaii," Report prepared for Wong, Sueda, and Associates, Inc., by Austin, Tsutsumi & Associates, Inc., Honolulu, Hawaii.

City and County of Honolulu, 1972. "An Ordinance Relating to Grading, Grubbing, and Stockpiling," Ordinance No. 3968, Bill No. 101.

Foote, D.E. et al., 1972. "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii," U.S. Department of Agriculture, Soil Conservation Service.

Fujiwara, T.D. 1973. "Characteristics of Urban Stormwater Discharge from Separate Sewers," M.S. Thesis, Department of Civil Engineering, University of Hawaii, Honolulu, Hawaii.

Jones, B.L., R.H. Nakahara, and S.S.W. Chinn, 1971. "Reconnaissance Study of Sediment Transported by Streams, Island of Oahu," Circular C33, U.S. Geological Survey in cooperation with the Division of Water and Land Development, State of Hawaii.

Loehr, R.C., 1972. "Agriculture Runoff," ASCE Journal of Sanitary Engineering Division, Vol. 98, SA6, pp 909-925.

Loehr, R.C., 1974. "Characteristics and Comparative Magnitude of Non-point Sources," Journal Water Pollution Control Federation, Vol. 46, No. 8, pp 1849-1872.

Lopez, N.C., 1976. "Estimating the Effects of Urbanization on Small Watershed Peak Discharges," Working Paper WP 73-001, Hawaii Environmental Simulation Laboratory, University of Hawaii, Honolulu, Hawaii.

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, Hawaii.

Miller, C.R., and W. Vlessman, Jr., 1973. "Runoff Volumes from Small Watersheds," Water Resources Research, Vol. 8, No. 2, Figure 5, pp 432.

Public Health Regulations, 1977. "Potable Water Systems," Chapter 49, Department of Health, State of Hawaii.

Public Health Regulations, 1979. "Water Quality Standards, Chapter 37-A," Department of Health, State of Hawaii.

APPENDIX D

FLOOD STUDYProject Location and Description

The proposed project site is located in Kahaluu, Kooilaupoko, Oahu, Hawaii (Exhibit A). It is situated on the east mauka corner of Kanehameha Highway and Waihee Road, Tax Map Key: 4-7-12:12 and 27 (Exhibit B).

The proposed project is the development of a shopping center on 7 acres of land zoned business (B-2) and the subdivision of 8 acres of land zoned residential (R-3 and R-6) into twenty-one single-family residential lots.

Background Information

According to the U.S. Department of Housing and Urban Development, Flood Insurance Rate Map, the proposed project site is shown to be within the 100-year flood hazard area (Exhibit C). However, recently, the City and County of Honolulu and the U.S. Department of Agriculture, Soil Conservation Service developed a multi-purpose lagoon adjacent to the proposed project site (Exhibit D). This lagoon is part of the Kahaluu Watershed Work Plan established to provide effective land treatment, prevent flood water and sediment damage, and provide a water-based recreational development for nearby communities.

The 28-acre lagoon is designed to carry the runoff generated by a 100-year flood frequency storm from the contributing streams, Ahuimanu Stream, Kahaluu Stream, and Waihee Stream; and the increased runoff expected from future changes in land use. It was excavated to a depth to allow tidal ebb and flow of the Kaneohe Bay waters and has a design capacity of 19,940 cfs as calculated by the U.S. Department of Agriculture, Soil Conservation Service. The total runoff of Waihee Stream that enters the lagoon is 6,950 cfs with the west tributary contributing 5,400 cfs and the east tributary contributing 2,400 cfs.

The Kahaluu Watershed Work Plan also proposed to improve portions of each of the contributing streams. In the case of Waihee Stream, a 100 foot wide and 17 foot deep concrete lined channel was proposed from the lagoon to the junction of the east and west tributaries. The concrete lined channel continues from the junction to just mauka of Ahuimanu Road with the west branch approximately 50 feet wide and 10 feet deep and the east branch 20 feet wide and 8 to 11 feet deep. However, at this point in time, the City and County of Honolulu does not foresee the implementation of this plan to improve Waihee Stream.

Flood Analysis

The flood analysis for the project site is based on the previous analysis done by the City and County of Honolulu and the U.S. Department of Agriculture, Soil Conservation Service, entitled "Watershed Work Plan - Kahaluu Watershed", July 1969 and the City and County of Honolulu, Department of Public Works, "Storm Drainage Standards", March 1969; and in accordance with the City and County of Honolulu Flood Hazard Ordinance No. 80-62.

The study done by the City and County of Honolulu and the Soil Conservation Service shows that the development of the multi-purpose lagoon reduces the limits of the 100-year flood to a small area just surrounding the lagoon (Exhibit D); and thus, much of the project site would not be within the Flood plain, as Exhibit C shows it to be. However, since Waihee Stream will not be improved, the Kaneohe corner area of the subdivision nearest to Waihee Stream may be flooded by the overland flow of the meandering west tributary. The overflow from Waihee Stream, due to the existing ground grades, may flow through the project site before reaching the lagoon and flood the areas with existing ground elevations lower than the top bank of the lagoon, the roadway of Kanehameha Highway, and the roadway of Waihee Road. However, this is not indicative

of the 100-year flood limit, as the lagoon does have the capacity to carry the 100-year storm runoff without overflow, as set forth in the study done by the City and County of Honolulu and the Soil Conservation Service. Thus, with the consideration of the 100-year flood limit as established by the study in the development of the lagoon (Exhibit D), and the 100-year flood limit of Waiehe Stream prior to any improvements (Exhibit C), it is proposed that the 100-year flood limit is approximately as shown on Exhibit B.

The capacity of Waiehe Stream was analyzed with the use of surveyed cross-sections of the stream; the 100-year frequency storm runoff discharge of 6,950 cfs; a Manning's roughness coefficient of 0.07, and the assumption of an artificial barrier at some distance from the stream channel centerline as the extent of the 100-year flood limit. Manning's normal depth of flow (Exhibit E) and the Standard Step Method of Backwater (Exhibits F and G) were used in determining the 100-year flood elevations.

Section A (Exhibit J-1) was used as the control section, based on free flow into the lagoon with water surface elevation at 0.6 feet (Exhibits K-1 to K-3 - note that the water surface elevations for the lagoon were determined by the Soil Conservation Service, beginning with mean lower low sea level at the outlet of 0.6 feet below sea level; and the maximum high tide is approximately 2.1 feet above sea level). A barrier was set at the property line as the limit of the 100-year flood as shown on Exhibit B. Manning's equation shows that the normal water surface elevation for a 100-year flood at Control Section A is 13.3 feet. The existing ground should be filled to elevation 14.3 feet in order to provide a one-foot freeboard.

In Section B (Exhibit J-1), the 100-year flood limit water surface elevation was determined from backwater calculations (Exhibit F) to be at 15.1 feet. The filling of the project site to avoid flood waters will increase the water surface elevation to 15.2 feet (see backwater calculations, Exhibit G). Since the increase in water surface elevation is less than the one foot allowed by the City and County of Honolulu Flood Hazard Ordinance No. 80-62, the proposed ground for this section may be filled for improvements to at least elevation 16.2 feet.

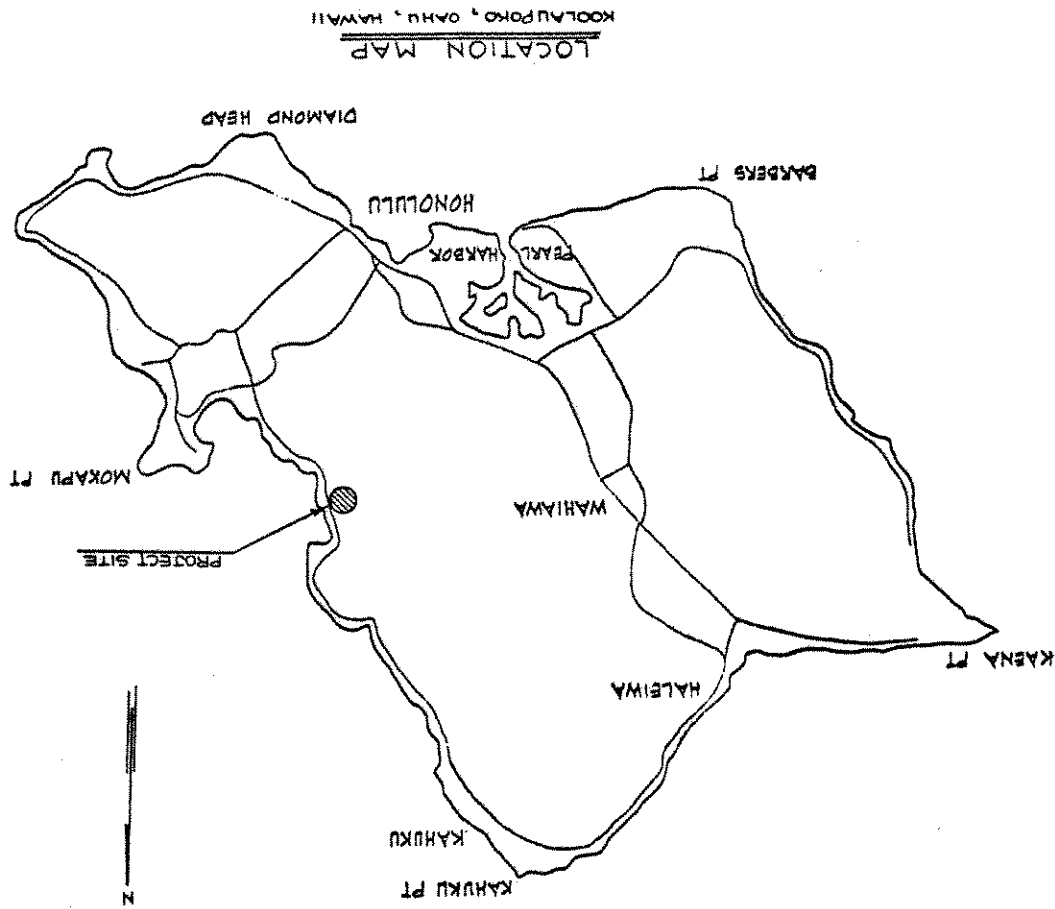
In Sections C and D (Exhibits J-1 and J-2), the ground to the right of the stream continuously slopes downward. It is because of the nature of these sections that the determination of the water surface elevations should be looked at with discretion and with the utmost consideration of Section B, to which they cross. In Section C, the water surface elevation of the 100-year flood is 17.4 (Exhibit F), and filling of the project site at the property line will raise the water surface elevation to 18.0 (Exhibit G). For Section D, the water surface elevation of the 100-year flood is 18.8 (Exhibit F) and filling of the project site at the property line will raise the water surface elevation to 20.1 feet (Exhibit G). Although, Section D shows an increase of the flood elevation of a little more than the one foot allowed by the City and County of Honolulu Flood Hazard Ordinance No. 80-62, the consideration of Sections B and C and the nature of this section gives reason for it to be viewed with judgment rather than exactness.

In Section E (Exhibit J-2), it is assumed that the overland flow from upstream would fill the low points to the left of the west tributary to approximately elevation 25.0, and the remainder of the flow would overflow into the

east tributary and flow at elevation 23.2. Backwater analysis shows that the assumed elevations are reasonable and therefore, the effects of filling the project site will not adversely affect the upstream flooding conditions (Exhibit H).

Conclusion

The findings of this study show that the filling of the area within the 100-year flood limit (Exhibit B) will not adversely affect the floodway nor adversely increase the regulatory flood elevation; and therefore, should be defined to be within the flood fringe district. It is also proposed that all other areas of the development outside of the flood limit be graded such that they will be higher than the roadway of Maihee Road, the roadway of Kamehameha Highway, and the top bank of the lagoon to avoid unnecessary flooding.



LOCATION MAP
KOO LAU PO KO, OAHU, HAWAII

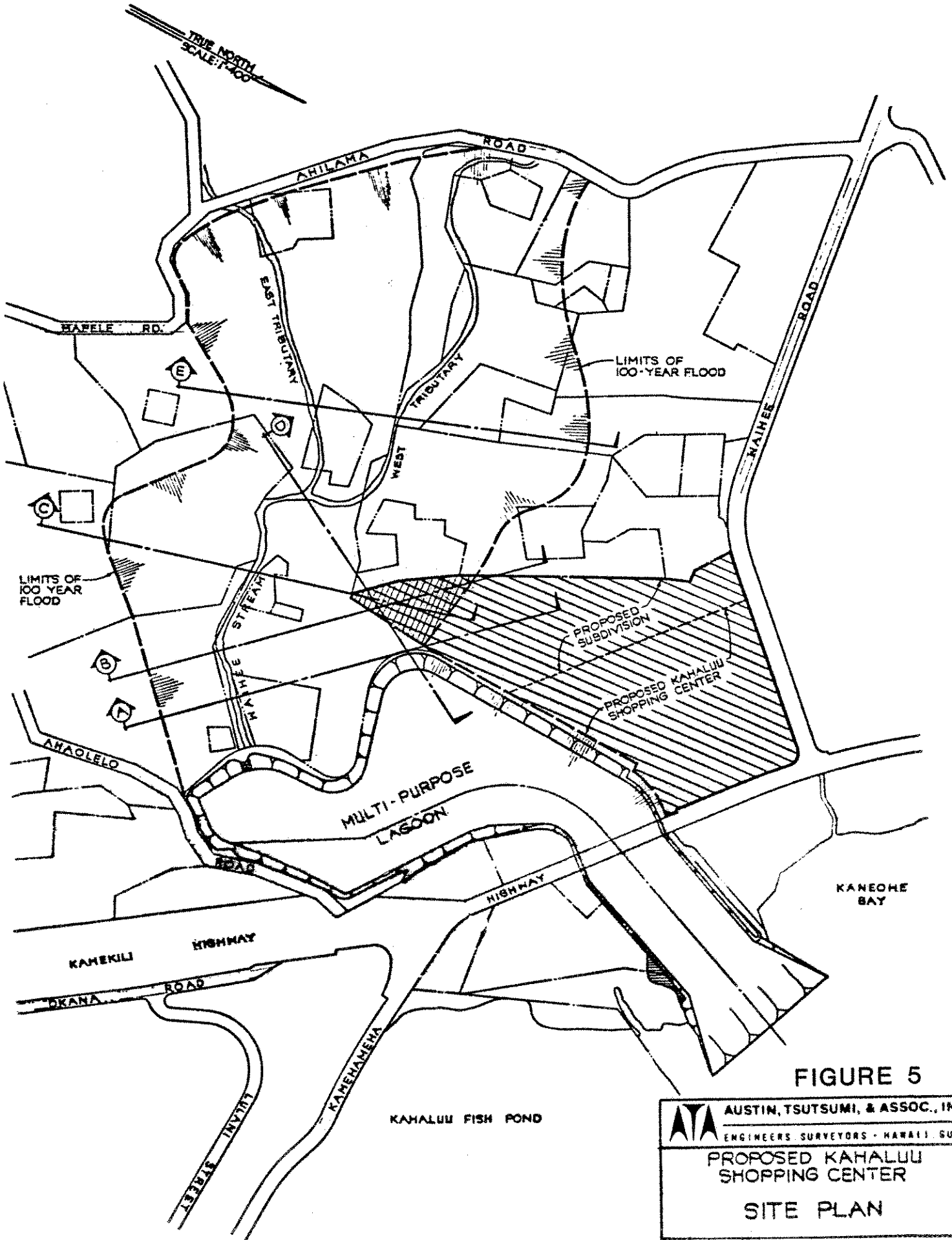



FIGURE 5


AUSTIN, TSUTSUMI, & ASSOC., INC.
 ENGINEERS SURVEYORS - HAWAII, GU.
PROPOSED KAHALUU SHOPPING CENTER
SITE PLAN

APPENDIX E

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.

Preliminary Evaluation for the Proposed Kahaluu Commercial and Residential Development

Discussion:

The proposed development excludes a recreational easement for public access and use of the Kahaluu Multi-Purpose Lagoon. Although some comments can be made on using the project site for recreational uses, land acquisition by the City is not planned based on the high cost of the B-2 zoning. The applicant is coordinating the project with the City's Department of Parks and Recreation.

- a) The coastal resources related to recreational activities are protected, with or without the proposed development.
- b) Not applicable.
- c) The area acquired by the Department of Parks and Recreation for the recreational use of the shoreline and the lagoon is felt to be adequate. The easement along the lagoon will also protect the recreational uses.
- e) (d is omitted.) Not applicable.
- f) Not applicable.
- g) Not applicable.
- h) A recreational easement is being provided.

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:

The project property has already been modified from its original, pre-1778 condition. Its past use has primarily been pasture.

The most recent modification (clearing) of the project site was for the use of the site to stockpile fill material for the creation of the Kahaluu Multi-Purpose Lagoon.

- 1) Based on an archaeological reconnaissance survey performed for the Kahaluu Multi-Purpose Lagoon project, there are no historical or archaeological sites on the subject property.
- 2) Not applicable, see item 1) above.
- 3) Not applicable, see item 1) above.

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 proposed project will include the filling in of certain areas (see Appendix D of the EIS) in order to flood-proof the structures.

The site is not subject to significant or severe erosion or subsidence hazard. Nor is the site subject to tsunami and storm waves.

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:

Presently the project site is vacant, sparsely covered with weeds and grasses or bare ground, and is not felt to be aesthetically pleasing. Potential does exist for landscaping the project site so that it can be a scenic area. It is presently in open space use.

- 1) The Kahaluu Fishpond and the shoreline (makai of Kamehameha Highway) are felt to be valued as scenic resources. The proposed project will not affect these areas.
- 2) Landscaping along the lagoon and Kamehameha Highway will enhance the project site and tend to "soften" the appearance of the commercial development from public view.
- 3) This project will not improve and/or restore shoreline open space and scenic resources.
- 4) The project is not dependent on the coastal area; however, other lands zoned B-2 are unavailable in the Kahaluu area.

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:

- 1) Not Applicable
- 2) Not Applicable
- 3) The preparation and review of this EIS would fall under item 3, since its primary purpose is to discuss potential environmental effects of the project.

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:

The EIS describes mitigation measures for the anticipated adverse environmental impacts. Governmental regulations, permits and approvals will also play an important role in determining the extent of environmental degradation and whether the project is acceptable and meeting the applicable Federal, State, and County regulations, ordinances, laws, codes, and standards.

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:

The EIS describes mitigation measures for the anticipated adverse environmental impacts. Governmental regulations, permits and approvals will also play an important role in determining the extent of environmental degradation and whether the project is acceptable and meeting the applicable Federal, State, and County regulations, ordinances, laws, codes, and standards.

Preliminary Evaluation of the Proposed Kahaluu Commercial and Residential Development

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:

The proposed development, based on a marketing analysis, will provide the necessary retail space for stores and offices which can be supported by the existing community retail expenditures. Also, the proposed development is felt to be located in a suitable location because the zoning is consistent with the proposed use and because the character of the proposed action is similar to that of the adjacent uses opposite the Highway, on the Kaneohe side of the bridge (Kahaluu Stream Bridge), which include two service stations, a drive-in restaurant, and a bank.

APPENDIX F

COMPENDIUM LETTER

COVERING THE PROPOSED

KAHALUU SHOPPING CENTER

(A PROPOSED 96,000~~±~~ NEIGHBORHOOD SHOPPING CENTER)

LOCATED AT

THE INTERSECTION OF WAIHEE ROAD
AND KAMEHAMEHA HIGHWAY
KAHALUU, OAHU, HAWAII

FOR

MARKET CITY LTD.
195 SOUTH KING STREET
HONOLULU, HAWAII 96813

MAY 22, 1981

**John
Child**

& COMPANY, INC.



& Company, Inc.

Real Estate Consultants and Appraisers

FINANCIAL PLAZA OF THE PACIFIC
SUITE 1040 • 130 MERCHANT STREET
HONOLULU, HAWAII 96813 • TELEPHONE (808) 533-2951

May 22, 1981

Robert J. Vernon, MAI, CRE
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Paul D. Cool
Craig K. W. Leong
Gail E. Yamamoto

Market City Ltd.
195 South King Street
Honolulu, Hawaii 96813

Attention: Senator Hiram L. Fong
President

Gentlemen:

Re: Market Analysis Covering The Demand For
Commercial Retail Space In The Kahaluu Environs

Pursuant to your request, we have prepared and are submitting herewith a compendium letter summarizing the conclusions of a market and marketability study covering the Kahaluu Shopping Center, a proposed community shopping center to be located upon a 7.028-acre site. The property is located at the corner of Waihee Road and Kamehameha Highway, Kahaluu, Oahu, Hawaii (Tax Map Key 4-07-12:portion of 12 of the First Taxation Division).

The project will consist of a community shopping center development containing approximately 96,000 square feet of building area and 284 off-street parking stalls. The Kahaluu Shopping Center, based upon the undated drawings prepared by Wong, Sueda & Associates, Inc., includes five freestanding buildings that are designed and oriented to maximize visibility of the project from the roadway and to insure the ease and convenience to future shopping clientele.

Building #1, located at the northwest corner of the property consists of a 5,000 square foot restaurant that will be of a "fast-food" variety. Building #2, located along Kahaluu Stream on the southeastern boundary of the subject property, is a 10,000 square foot restaurant that is planned to be of a "sit-down" variety. Building #3, located adjacent to Building #2, will be the major anchor tenant of the shopping center and will consist of a 30,000 square foot food market. Buildings #4 and #5, located along Waihee Road west of Buildings #2 and #3, will consist of 26,400 and 24,600 square feet of floor area respectively that will offer a variety of convenience, shopping, personal service, and other retail goods. Planned as a community shopping center, the project will primarily serve the residents of Kahaluu to Kualoa. The Kahaluu Shopping Center is scheduled for completion by 1983.

The purpose of the study is to evaluate the market for retail commercial space in the designated trade area, and to determine the potential market share which may be captured by the proposed development. The function of this report is to provide market and marketability conclusions that will be used as a part of a report for submission to the City and County Planning Department, pursuant to Ordinance #4529. The effective date of this letter is May 22, 1981.

In proceeding with this study, we have conducted an on-site inspection of the subject property, neighboring properties and the general Kahaluu environs; reviewed historical and projected population data, employment participation rates, economic trends and forecasts, retailing trends, economic impacts affecting the state, county, and neighborhood; and reviewed the proposed development layout, tenant mix, and conceptual space allocations. After analyzing these basic data, we have arrived at the following conclusions:

As of 1983, there will be sufficient retail expenditures in the Kahaluu Trade area to support an additional 180,000 square feet of retail floor area distributed in the following categories:

Convenience Goods	98,000 square feet
Shopper's Good	50,000 square feet
Personal Services	23,000 square feet
Other Retail	9,000 square feet
Non-Retail	18,000 square feet

There are no other significant additions of commercial retail space within the trade area planned for the foreseeable future. Consequently, the Kahaluu Shopping Center will represent the only source of additional retail space to service the residents of the Kahaluu to Kualoa communities within the near term.

Based upon the competitive position of the proposed development within the trade area, the Kahaluu Shopping Center is estimated to command significant support at the scheduled commencement of operation.

The project is estimated to capture the following amounts of commercial retail space available to the trade areas:

ESTIMATED TRADE AREA RETAIL SPACE
 CAPTURED BY PROJECT IN 1983

<u>Retail Category</u>	<u>Estimated Trade Area Retail Floor Requirements in 1983</u>	<u>Floor Area Captured By Project</u>	<u>Unsatisfied Floor Area In Trade Area</u>
Convenience Goods	98,000#	50,100#	+47,900#
Shopper's Goods	50,000#	30,600#	+19,400#
Personal Services	23,000#	5,100#	+17,900#
Other Retail	9,000#	5,100#	+ 3,900#
Non-Retail	18,000#	5,100# ^{1/}	+12,900#

In addition to the floor area which could be supported by the development at the commencement of operations, the project is anticipated to continue to capture a proportion of the growing retail expenditures generated by the trade area residents.

^{1/} In addition to retail services and goods that will be available to the shopping center, the proposed development will most likely also offer non-retail services, for example, medical and dental offices, veterinary clinics, etc.

Market City Ltd.
May 22, 1981
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Based upon the foregoing conclusions, the Kahaluu Shopping Center is estimated to be 100 percent leased at the commencement of operations.

It should be understood that this letter constitutes a statement of only the final market and marketability conclusions pertaining to the subject property. These conclusions have been based upon a complete written analysis. The written analysis, although in rough form, has been prepared and is available for review upon your request.

We hereby certify that we have conducted an on-site inspection of the property being analyzed; that we have no interest, present or prospective, direct or indirect in the property analyzed or in the proceeds to be derived therefrom; that we have no personal bias regarding the subject matter of this study or the client; that our employment or the amount of the assignment fee was not contingent upon returning findings in any specific or implied amounts, or otherwise contingent; that all of the statements and opinions contained in this report are true and correct to our best knowledge and belief; that no pertinent information has been knowingly withheld; that unless so stated, no one other than those undersigned participated in the preparation of this report and its findings; that this study and its use are circumscribed by certain limiting conditions and underlying assumptions which are tabulated within the report; the report has been prepared in conformance with the Rules of Professional Ethics of the American Institute of Real Estate Appraisers and the American Society of Real Estate Counselors of the National Association of Realtors, the International Society of Real Estate Appraisers, and the American Society of Appraisers.


The American Institute of Real Estate Appraisers conducts a voluntary program of continuing education for its designated members. MAIs and RMs who meet the minimum standards of this program are awarded periodic educational certification. Robert J. Vernon, MAI, CRE is certified under this program through December 31, 1983.

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We appreciate having had the opportunity to provide this market and marketability study for you. This letter and its conclusions are invalid if presented without the John Child & Company, Inc. seal embossed over the original signature(s) recorded below.

Very truly yours,

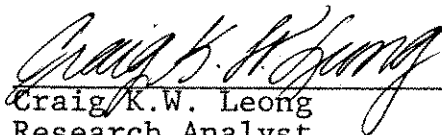
JOHN CHILD & COMPANY, INC.



Robert J. Vernon, MAI, CRE
President & Chief Appraiser



Uson Y. Ewart
Market Analyst & Staff Appraiser



Craig K.W. Leong
Research Analyst

QUALIFICATIONS OF JOHN CHILD & COMPANY, INC.

JOHN CHILD & COMPANY, INC.

REAL ESTATE APPRAISERS, ANALYSTS, AND CONSULTANTS

Suite 1040 / Financial Plaza Of The Pacific / 130 Merchant Street /
Honolulu, Hawaii 96813 / Telephone (808) 533-2951

John Child & Company, Inc. is an independent real estate service corporation. The corporation originated in 1937 from the formulation of Business Survey and Research Service. Today John Child & Company, Inc. is one of the largest and oldest real estate service organizations headquartered in the State of Hawaii. The corporate officers, principal broker, and market analysts include:

President and Chief Appraiser	Robert J. Vernon, MAI, ASA, CRE
Executive Vice President and Assistant Chief Appraiser	Theodore Wrobel, ASA, SREA, CRA
Vice President and Staff Appraiser	Craig T. Smith, ASA
Secretary and Staff Appraiser	Robert H. Taniguchi
Principal Broker and Staff Appraiser	Ralf D. Graumann, ASA
Market Analyst & Staff Appraiser	Uson Y. Ewart
Staff Appraiser	Barbara A. Ichishita
Research Analyst	Paul D. Cool
Research Analyst	Craig K.W. Leong
Research Analyst	Gail E. Yamamoto

The staff of John Child & Company, Inc. has a wide range of real estate training and experience and provides consulting services, lease rent negotiation and arbitration, research, valuation, and feasibility studies. These professional services are presented informally through conferences and letters or formally through documented reports including mortgage loan appraisal, condemnation appraisal, reuse appraisal, and economic, market, marketability, highest and best use, land use, and land utilization studies.

The staff of John Child & Company, Inc. performs real estate assignments throughout the State of Hawaii, in the westerly states of the mainland USA, and in the Pacific Basin.

The following pages list typical clients and institutional users and selected studies.

List is not attached.

APPENDIX G

RECONNAISSANCE SURVEY OF KAHALUU WATERSHED

By Stephan Clark
Department of Anthropology
BERNICE P. BISHOP MUSEUM

The following report covers the reconnaissance survey of specified portions of the Kahaluu Watershed area on the northeast side of the Island of Oahu, conducted by staff of the Department of Anthropology, Bishop Museum, on 22 August 1974 for the U.S. Department of Agriculture, Soil Conservation Service.

The purpose of the survey was to determine the presence of any sites of historical or archaeological significance in the specified survey area.

The survey area consists of approximately 50 acres and includes the following Watershed work areas: the lagoon site, W-1 debris basin and line channel section, W-2 line channel section, KA-2 debris basin and line channel section, and A-1 line channel section (see "Project Map" in *Watershed Work Plan - Kahaluu Watershed*).

The vegetation in the survey area consists chiefly of cultivated bananas and taro (*Colocasia esculenta*), *ti* (*Cordyline* sp.), *hau* (*Hibiscus tiliaceus*), lantana (*Lantana camera*), guava (*Psidium guajava*), pangola grass (*Digitaria decumbens*), and *kikuyu* grass (*Pennisetum clandestinum*).

The members of the survey team were Stephan Clark of Bishop Museum, Department of Anthropology, and Mikk Kaschko of the University of Hawaii Department of Anthropology.

Procedures

In the search for sites, the survey team walked repeated spaced sweeps back and forth across the specified areas.

Summary of Findings

In all of the specified areas requiring survey, no archaeological remains were found. If remains ever existed in the area, they have long since been destroyed by bulldozing and farming operations.