

1990 - Oahu - FEIS - Waiola **FILE COPY**

FINAL ENVIRONMENTAL IMPACT STATEMENT

**WAIOLA ESTATES/KIPAPA RIDGE ESTATES
SUBDIVISION**

WAIPIO, EWA, OAHU, HAWAII

MAY 1989



CITY AND COUNTY OF HONOLULU
DEPARTMENT OF HOUSING AND COMMUNITY
DEVELOPMENT
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

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FOR
WAIOLA ESTATES/KIPAPA RIDGE ESTATES
SUBDIVISION**

Waipio, Ewa, Oahu, Hawaii
Tax Map Key: 9-4-07: 1

This document is prepared pursuant to Chapter 343, HRS.

Proposing Agency: Department of Housing and Community Development

RESPONSIBLE OFFICIAL: _____

Michael N. Scarfone
for Michael N. Scarfone, Director

5/2/89

Date

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- B Agricultural Study
- C Waiola Estates Update on Community Issues and Concerns
- D Traffic Impact Report
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INTRODUCTION

An Environmental Impact Statement (EIS) for the Waiola Estates/Kipapa Ridge Estates Subdivision was prepared by the City and County of Honolulu Department of Housing and Community Development and accepted by the City and County of Honolulu Department of Land Utilization on October 6, 1986.

A new EIS has been prepared to discuss the changes that have been made in the site plan, housing unit mix and target group. Many of the changes respond to agency and community concerns.

The project proposed in 1986 contained approximately 1,500 single family units, together with park, school and reservoir sites. The project as currently envisioned contains approximately 200 fewer units in a mix of multi-family and single-family units. Additions to the project include a regional recreational facility containing a municipal golf course and regional park as well as a child care center, park-and-ride facility and rental units for the elderly.

Eighty percent of the units proposed in 1986 were intended for "gap group" households and the remaining twenty percent for low and moderate income purchasers. The revised project provides for 60 percent of the units for "gap group" and low- and moderate-income households while the remaining 40 percent will be sold at market prices.

The EIS will be submitted in compliance with Chapter 343, Hawaii Revised Statutes.

I. SUMMARY

Project Name: Waiola Estates/Kipapa Ridge Estates
Subdivision

Proposing Agency: City and County of Honolulu,
Department of Housing and
Community Development.

Project Description: The proposed project is a single-family and multi-family residential subdivision containing approximately 1,345 units with appurtenant infrastructure and facilities. A major regional recreational facility, school site, park and ride facility, child care facility, elderly rental units, and reservoir sites will also be included within the development plan (Figure 1).

Location: Waipio, Central Oahu. The project area is makai-ewa of the point at which Kipapa Gulch and Kamehameha Highway intersect

Tax Map Key: 9-4-07:1

Area: 269.454 Acres

Present Use: Agriculture (Pineapple)

State Land Use District: Agriculture

Development Plan: Agriculture

**Development Plan Public
Facilities Map:**

Busway, Reservoirs, Water Mains
and new Roadway

Present Zoning:

AG-1, Restricted Agriculture

Landowner:

Castle and Cooke, Inc.

Contact Person:

Michael N. Scarfone, Director
Department of Housing and
Community Development..

Summary:

The proposed 1,345 unit mixed residential subdivision planned by the City and County of Honolulu is intended primarily for gap group income families. The project will include 850 single-family lots, 361 townhouse units, 134 apartment units and appurtenant infrastructure and facilities. Proposed amenities include a municipal golf course, a regional park, school site and a park-and-ride facility. The Project will be beneficial in its addition to Oahu's affordable housing inventory.

Potential project-related adverse impacts will include: additional vehicular traffic along with accompanying noise and air environment degradation, and the loss of agricultural lands. Traffic impacts will be mitigated and alleviated by the use of a park-and-ride program.

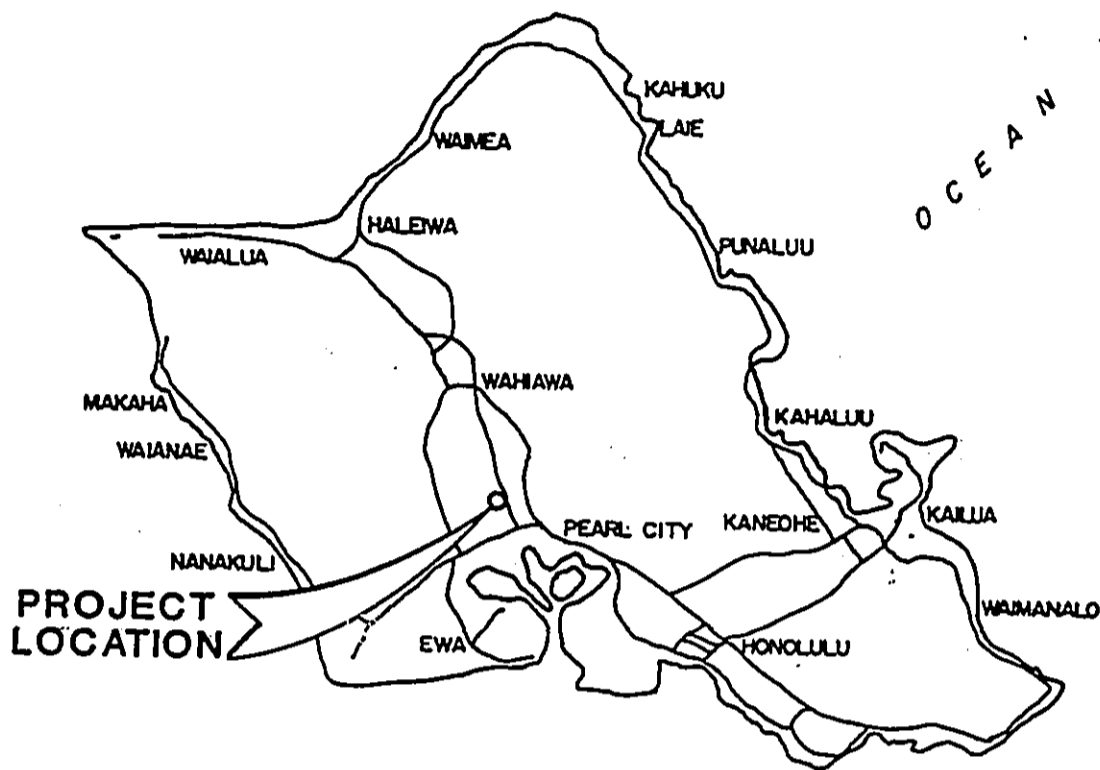
Alternatives considered include: a no project alternative, alternative agricultural use, multi-family residential use and alternative sites. The no project alternative was rejected since no benefits would be gained to the landowner or the general public. The active agricultural use alternative was dismissed since the permanent removal of the project lands would not have any significant impact on the State agricultural land inventory or the viability of the pineapple industry.

II. PURPOSE

This Environmental Impact Statement is prepared pursuant to Chapter 343, Hawaii Revised Statutes and in accordance with the City and County of Honolulu's Department of General Planning Development Plan regulations.

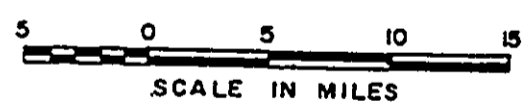
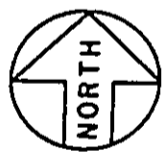
The initial action required for this project involves a Development Plan amendment from Agriculture usage to Urban designations in keeping with the adjacent urban use of the area. The document will be reviewed by the City and County Department of Land Utilization.

Alternatively, the Department has the option of requesting exemptions from the City and County General Plan, Central Oahu Development Plan and zoning under Section 201E-210, Hawaii Revised Statutes. Section 201E-210 provides for such exemption requests for government-assisted housing developments.



PACIFIC

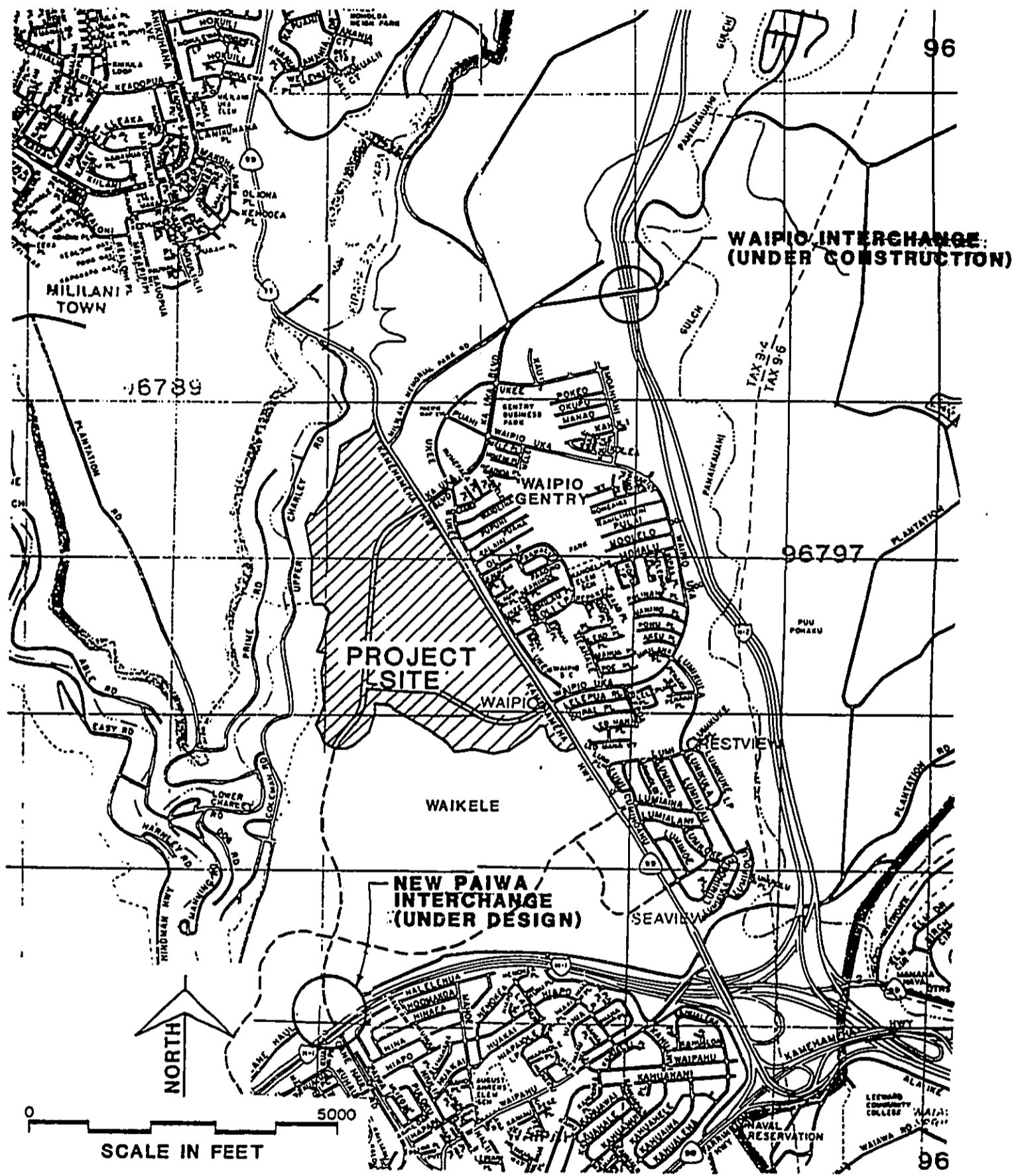
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WAIOLA ESTATES/
KIPAPA RIDGE ESTATES

PROJECT LOCATION

Figure 1

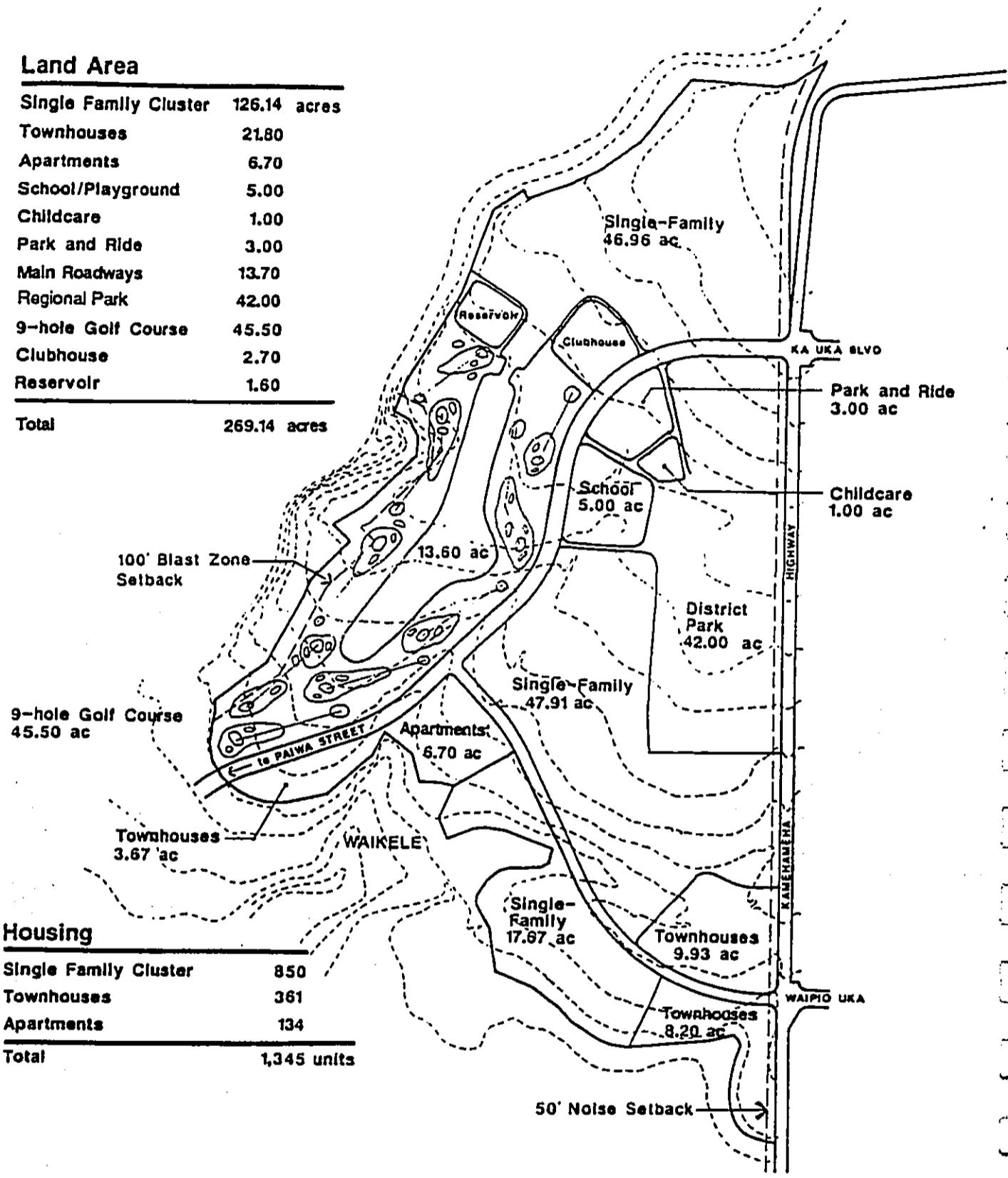


WAIOLA ESTATES/
KIPAPA RIDGE ESTATES

PROJECT SITE

Land Area

Single Family Cluster	126.14 acres
Townhouses	21.80
Apartments	6.70
School/Playground	5.00
Childcare	1.00
Park and Ride	3.00
Main Roadways	13.70
Regional Park	42.00
9-hole Golf Course	45.50
Clubhouse	2.70
Reservoir	1.60
Total	269.14 acres



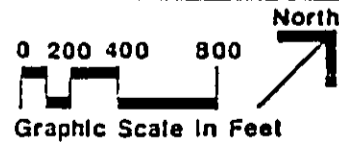
Housing

Single Family Cluster	850
Townhouses	361
Apartments	134
Total	1,345 units

February 25, 1989

**WAIOLA ESTATES/
KIPAPA RIDGE ESTATES
PROJECT SITE PLAN**

FIGURE 3



III. PROJECT DESCRIPTION

A. Project Location

The parcel consists of gently sloping lands on the southern portion of the Schofield Plateau which lies between the Koolau and the Waianae mountain ranges (Figures 1 and 2). It is bounded by Kamehameha Highway (adjoining Gentry-Waipio at this location) to the east, Kipapa Gulch and the Waikele Branch, Naval Magazine, Lualualei to the west, and Amfac's proposed Waikele community to the south.

B. Project Description

The 269-acre parcel when fully developed as proposed will provide a total of approximately 1,345 units consisting of 850 single-family lots, 361 townhouse units, and 134 apartment units. The Project will conform in large part with all standard subdivision requirements including underground utilities, curbs and sidewalks. Approximately 134 of the apartment units will be available for rental by qualified senior citizens. Amenities to be included within the master planned community are a 90-acre regional recreational facility. Tentative plans include a municipal golf course and a regional park. A park-and-ride facility will be provided in close proximity to the low density apartment, elderly housing, child care, and school/playground components. A number of offsite improvements including widening of Kamehameha Highway and development of additional water resources and storage are also required to accommodate the proposed development.

Typical design parameters for the proposed units would generally follow the criteria listed below:

- | | | |
|----|---------------------------------|---|
| 1. | Single Family
Detached Units | 3 bedroom, 2 bath; and 4
bedroom, 2 bath units. |
| | Affordable Units | 1,000 to 1,400 square feet
(excluding garage); single and
two-story structures.
*\$113,000 to \$121,000 |
| | Market Units | Approximately 1,500-1,800
square feet living area
(excluding garage).
*\$ 220,000 average price. |
| 2. | Townhouse Units | One bedroom, two bedroom,
and three bedroom units of
approximately 500 to 1000
square feet in two-story
structures.
*Low-Moderate: \$ 62,000 to
\$75,000.
*Gap Group: \$ 90,000 to
\$100,000. |
| 3. | Apartments | Studio and one bedroom units
of 400 to 500 square feet in
low-to mid-rise structures. |

* These are valued in 1988 dollars, subject to change.

C. Economic and Social Characteristics

1. Development Structure

The City and County proposes to acquire the land and provide the necessary onsite and offsite improvements. A selected developer or developers would construct

homes on the improved houselots and sell the house and lot package to homebuyers.

2. Land Acquisition and Improvement Costs

Negotiations with Castle and Cooke, Inc. will commence upon City Council authorization to proceed with the project.

The estimated cost of the subdivision improvements including planning and engineering will amount to approximately \$65 million.

3. Phasing

The proposed project is expected to be completed over a three year period beginning in 1991.

4. Affordable Units

Forty percent of the units will have purchase prices affordable to gap group purchasers. This group is currently defined as those with incomes between 80 and 120 percent of the median income established by the Federal government for the Honolulu area. Twenty percent of the units will be available to low and moderate income and elderly householders, with low- and moderate-income defined as households with incomes below 80 percent of the median income. The remaining forty percent of the units will be sold at prevailing market prices.

5. Purchaser Eligibility and Selection

The intended target group for the gap group units is primarily families currently having incomes of \$43,800 or less for a family of four. The target group for the low-

and moderate-income units is primarily families with incomes of \$29,200 or less for a family of four. Income criteria are adjusted for family size and revised annually. In addition to this requirement, the eligibility criteria specified by Chapter 201E (formerly Chapter 359G) of the Hawaii Revised Statutes, which governs development of affordable housing, shall be applicable. To ensure that the project continues to primarily benefit limited income families, each home will be subject to "buy-back" provisions to control speculation through resale of units for a period of 10 years. Each purchaser who sells his home during the 10-year period will be obligated to provide the City with the first option to purchase at a restricted and predetermined price level.

The market priced units will have no purchaser or resale restrictions.

D. Market Characteristics

A study titled Market Assessment for Waiola was prepared by consultant John Zapotocky for the proposed Project. The study provided the following summation.

The development has a number of distinguishing characteristics from other proposed developments including a time advantage because it can be fast tracked with a minimum amount of new infrastructure. However, the most unique feature of the development is its target market. Sixty percent of the project is devoted to affordable for sale and elderly rental housing. The for sale units are targeted at a wide range of incomes and family sizes, with units ranging from studios to four bedroom homes. The pricing is also spread across the spectrum of incomes and not concentrated at the upper limits of the target income range. In short, this project serves a market that is not being adequately served now

and can do so in a relatively short time. The response to the West Loch project is a testimonial to the need for additional projects of this type.

The absorption of the residential project is expected to be accomplished over a three year period commencing in 1991. Elderly housing and gap group for sale units are expected to be absorbed as fast as they can be delivered beginning in 1991 and ending in 1994. Market units are estimated to be absorbed over the same 3 year period beginning in 1991 and ending in 1994.

There is an existing unmet need for housing on Oahu and this need is expected to grow larger over the next twenty years. This is particularly true in the area of elderly rental units and gap group for sale housing.

There is currently a shortage of golf facilities on the Island of Oahu and in the Central Oahu area. This is particularly true of municipal golf facilities. The proposed municipal golf course will be absorbed as soon as it can be built. It is expected to be absorbed in 1992.

E. Demand

Residential Demand

There appears to be a strong demand for residential development of the type proposed for the Waiola Estates/Kipapa Ridge Estates Project.

Ten percent of the units (134) are designated for elderly rentals. According to Housing and Community Development records, 2,600 elderly households are currently on various State and County housing agency waiting lists for housing or housing assistance.

Ten percent of the units (135) are designated for Low/Moderate households. The strong response to the City sponsored Ewa Expandable and Acacia Apartment projects indicates a strong demand for this type of development. Forty percent of the units (538) are designated for gap group households. An incredible 8,000+ applications were received for the 356 affordable homes in the City sponsored West Loch development. The West Loch homes which are still under construction are similar to the single family affordable units to be offered. The 8,000 applications is an indication of the depth of the market for this type of development. Similar product with similar pricing at this project should be absorbed immediately.

Forty percent of the units (538) are designated for market households. The development of these homes within the project will provide the subsidy to undertake the development of the elderly, low/mod and gap units. In addition, the market units will enhance the overall attractiveness of the planned community and surrounding communities by providing a broad spectrum of housing types and a healthy mix of economic groups within the development. Thus the development will more closely resemble the economic mix of other Central Oahu communities. Market units in Central Oahu are selling well and market units at the West Loch project in Ewa have been well received. The forty percent market component is a concept being used in the Housing Finance and Development Corporation's Kapolei Project.

Both the State administration through the Governor's housing initiative and the city, through its land use actions to encourage the development of affordable housing, have recognized the need for additional affordable units at the earliest possible time. The Waiola Estates/ Kipapa Ridge Estates project will provide affordable units to a broad range of need groups.

Golf Demand

The need for additional municipal golf courses is evidenced by the high usage factor of Oahu's municipal courses, approximately three times the national average. This situation is understandable given the rapid population growth on Oahu and the fact that no new municipal facilities have been opened since 1971 when the Ted Makalena Golf course in Waipahu was completed. While the new West Loch golf course will provide some relief, it is expected to be fully utilized very shortly after it opens in late 1989. The project's golf course is expected to provide Oahu residents with a badly needed recreational facility within the next three years.

IV. ALTERNATIVE ACTIONS CONSIDERED

A. No Project Alternative

Non implementation would allow the land to remain in its present agricultural land use. The beneficial impacts of the increased availability of affordable housing and recreational facilities would also then be non-existent.

If the project is not implemented at this time, the land would remain in its present condition while other alternatives are considered by the landowner. Some action is likely to take place that could include:

- The landowner could develop the site himself.
- The landowner could sell the project site to another "for profit" developer.

B. Alternative Agricultural Use

Analysis of the Waiola Estates/Kipapa Ridge Estates lands for active agricultural use was evaluated in a study prepared by Evaluation Research Consultants dated July 17, 1986 (Appendix B). The study discusses the present condition of the affected acreage in terms of its productivity, the designations of the lands under the ALISH system of evaluation, and the LESA land evaluation ratings assigned to the lands.

The relative productivity of the lands in terms of agriculture can be assessed by examining a number of productivity indices. The subject lands are designated "Prime Agricultural Lands" by the State of Hawaii Department of Agriculture agricultural lands of importance to the State of Hawaii or ALISH systems. The "Prime" designation used by the ALISH

rating system implies that the property has all the physical and climatic conditions which permit sustained high yields under economically advantageous operating conditions. The land has overall productivity ratings of A82i and B83i (Land Study Bureau). A rating of A is the highest. Lands rated B have some limitations.

The Soil Conservation Services Soil Survey crop classifications for the subject parcel are IIe and IIIe if irrigated. Under this rating system the highest productivity rating is I and the lowest is VIII. The crop classification scores indicate that the land has moderate to severe limitations that reduce the choice of crops or that require moderate or special conservation practices. In the case of the subject parcel, the lands are subject to moderate to severe erosion if not protected. According to the proposed land Evaluation and Site Assessment (LESA) the subject lands have land evaluation (LE) ratings of 88 and 81 on a scale of 12 to 96.

The LESA ratings provide a summary of all the productivity ratings. In fact, the LE rating is a weighted average of five different productivity indices, including the three discussed above. The rating for these lands indicate that when irrigated the land has productive potential. It is not the very best land in the State, but it is definitely good land, capable of producing high yields with relatively low costs and little risk of damage to the physical environment if appropriate agricultural practices are followed.

Existing and planned urban residential land uses bordering or adjacent to the site (Gentry-Waipio, Amfac/Waikale, and Crestview) are also identified. These competing uses direct attention to the conflicting aspects of urban vs. agricultural land uses despite protective laws (Chapter 165, HRS) which limit the circumstances under which existing farming

operations may be deemed a nuisance to adjoining urban residential neighbors.

The agricultural significance of the proposed development was also evaluated with comparable acreages. This comparison identified this site as constituting a very small percentage of similar quality lands. The subject lands are less than 0.5% of the "Prime" lands on Oahu and 0.1% of such lands Statewide. When an evaluation is conducted on the basis of lands currently being used in crop production, the acreage in question becomes slightly more significant. Currently, more than 41,000 acres are being used in crop production on Oahu and the decrease in acreage resulting from the conversion of Waiola lands to urban use would be 0.65%. Total pineapple acreage would decrease by 2.3%.

Agricultural lands of similar quality and land classification ratings are not scarce. As of 1984, 266,000 acres in Hawaii were used for crop production (including sugar and pineapple). This is 58,000 acres less than were used for crop production in 1969. On Oahu, the total acreage used for crop production has decreased by 17,700 acres since 1967 to the current level of 41,600 acres as of 1984.

Even after subtracting the past conversions of crop lands to urban usages and the projected increases in agricultural land uses on Oahu in the year 2015 based on the projections in the LESA Commission report, there are over 12,000 acres of land suitable for crop production not currently in production on Oahu. If more sugarcane lands become fallow, this number will increase.

The removal of these lands from pineapple production is not expected to have any impact on the production of pineapple on Oahu. Castle & Cooke, Inc. in a letter to the Department dated June 30, 1988 stated that "the conversion of these lands to

urban use will not affect pineapple production or jobs over the long term since other surplus lands have been converted to pineapple as part of the overall land utilization program of Castle & Cooke, Inc. and its subsidiaries."(Appendix A.) The loss of the subject parcel to agricultural use will be permanent and irreplaceable upon development of the proposed project.

Alternative agricultural uses for crops other than sugar and pineapple were studied based on the physical, agronomic and environmental characteristics of the subject parcel. A summary listing of 24 vegetable crops and 8 fruit and nut crops can be considered to have an agronomic potential. (Appendix B, "Agricultural and Economic Evaluation of Lands in the Proposed Waiola Development".) These alternative crops are listed in the Appendix as Table 3. The analysis points out, however, that agronomic success (the crop will grow) and economic success (the crop can be grown for a profit) are not the same. Some of the crops listed have been tried and found to be unprofitable, either because of high production costs, lack of markets, or the availability of less expensive imports. Also, some of the crops listed that can be grown in the area could be grown elsewhere in the State more profitably.

One of the more pronounced limiting factors to alternative agricultural crops is the cost and supply of water. Under existing conditions, the most readily available source of water is from the Oahu Sugar Company. This water would have to be pumped up to the Waiola fields at a cost of \$100 per acre foot. Most crops listed require about 5 acre feet of water per year and some other crops such as perennial crops would require more. If water were to be purchased from the Board of Water Supply at agricultural rates, it would be substantially more expensive.

The evaluation of crops produced in Hawaii can be separated into two groups: those produced for export and those produced for local consumption. Crops that can be produced for export;

papaya, guava, passion fruit, macadamia nuts and pineapple can all be produced on lands similar to these lands. There are various factors that affect the production of these crops on the proposed site and these include; insect infestation (mosaic virus on papaya), installation of trellises for passion fruit cultivation, and incompatible location of cultivation and processing facilities for macadamia nut and guava cultivation.

Several vegetable crops which are imported in great quantities are not climatically suited to this location because they require cool temperatures for good quality and profitable yields. The fruit and vegetable crops which show some potential for commercial production here are listed in the Appendix B together with the quantities of the product or similar products sold in the Honolulu wholesale market in 1985. The appendix further identifies market conditions that can be used to estimate the potential demand from increased production of the crops. When local production already supplies the entire market, any increase in production via additional planting will have two immediate effects: 1) the price of the product will fall, making it less profitable or unprofitable to produce; and 2) production elsewhere in the State will decline.

Crops that can be grown on the subject parcel that would be agronomically feasible are also subject to seasonal factors that would affect the crop reaching the market during those times when imports are scarce or unavailable. These crops are fragile in the sense that timing of the crop to reach market in competitive time frames also results in harvesting occurring during poor agronomic conditions when yields are low.

Lands such as these are also suitable for the production of seed for crops such as corn if adequate water for irrigation is available. Seed corn cultivation is dependent to a great extent on climatic conditions elsewhere in the world. It is difficult to

plan on a long term demand for such a use and it appears that sufficient lands are available to meet such current demands.

Forage crops for animal feed are also potential crops for this area. These would include corn silage and other similar products like alfalfa which would best serve the dairy industry and the feed lot at Barbers Point. Availability of low cost water and the transportation costs of a bulky product preclude considering this as an optimal location for this product.

It is concluded that placing the subject lands in an urban use will not have a significant impact on the agricultural sector of Oahu or the State. Lands of similar quality and economic potential are currently lying fallow and there are sufficient lands available to meet current and projected future agricultural needs.

C. Multi-Family Residential

This addition of multi-family units is a desirable addition to the single-family format since these units could be produced for lower prices. The proposed multi-family density of 12 and 18 units per acre is in contrast to the single-family density of 8 units per acre. Development of the site in a combined density ratio will contribute to a quality residential living environment by allowing more public open space within the development. Development costs will be reduced and make the proposed units available to a larger cross-section of people.

D. Alternative Sites

As an ongoing part of the City's housing program, available tracts of land throughout Oahu were and are constantly being evaluated as possible sites for affordable housing projects. Consideration as an alternative site is determined primarily by the price of land and the cost of its development for residential

use. Sites of this size are generally not available within the urban core. Furthermore, smaller sites within urbanized areas of Oahu were not feasible because of higher land costs.

Rural sites were also not considered because travel time, distance from centers of employment and the absence of suitable infrastructure rule out such developments. Areas such as Waialua/Mokuleia, the North Shore and most of the Windward Coast fall within this category.

While other potentially suitable sites are available in Ewa, each is already being evaluated as an additional location for affordable housing. As their economic feasibility is established, these sites will be considered for future affordable housing projects.

V. THE AFFECTED ENVIRONMENT

A. Project Location

The parcel consists of gently sloping lands on the southern portion of the Schofield Plateau which lies between the Koolau and the Waianae mountain ranges (Figures 1 and 2). It is bounded by Kamehameha Highway (adjoining Gentry-Waipio at this location) to the east, Kipapa Gulch and the Waikele Branch, Naval Magazine, Lualualei to the west, and Amfac's proposed Waikele community to the south. The project site is used for pineapple cultivation. The United States government has an easement which affects 5.879 acres along Kipapa Gulch. Since the U.S. Army has abandoned its operations at that location, the City asked the Federal government to relinquish its easement. When the original Waiola Estates subdivision did not proceed in 1986 as planned, the Army stopped processing the request. The property is approximately one mile south of Mililani town. A planned nine hole par-3 golf course will be sited along the project's boundary along the Kipapa Gulch as a buffer zone recreational amenity to accommodate the established blast zone boundary.

B. Topographic Characteristics

The project site lies on a gently sloping area of the Schofield Plateau at elevations ranging from approximately 300 feet in the southern portion of the property to 425 feet above mean sea level at the northern tip.

1. Soils

The project area is underlain by soils consisting of silts and clays of the Molokai Soil Series. The U.S. Soil Conservation Service, "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii,"

August 1972, classifies the soils as Molokai silty clay loam (MuB). They consist of well-drained soils and are formed in material weathered from basic igneous rock. This type of soils is generally found in nearly level to moderately steep lands with elevations ranging mainly from near sea level to 1,000 feet. The mean annual soil temperature is 73 degrees F. Molokai soils are geographically associated with Holomua, Keahua, Lahaina, and Uwala soils. They are reddish-brown to brown, stiff to hard, silty clays and clayey silts. Based on the Unified Soil Classification System, they can be classed as CL, MH and ML groups. The entire project area is underlain by these groups of soils.

On these soils, runoff is slow and the erosion hazard is slight; permeability is moderate.

Permeability refers to movement of water downward through undisturbed and uncompacted soil. Permeability is one component, along with soil water content, of the general internal drainage characteristics of soil types. Soil permeability is categorized as (1) moderate; (2) rapid and (3) slow. Moderate permeability is the most desirable condition for this environmental factor.

The erosion hazard is no more than slight. Erosion hazard refers primarily to the danger of accelerated erosion which would result from disturbance of the natural landscape, usually by man.

The soils encountered generally exhibited high densities and relatively low moisture contents. It should be noted that the upper 12 inches of the soil mantle are relatively loose due to constant reworking of this layer for agricultural purposes. Significant roots and organic

material extend to no more than 12 inches below the ground surface.

2. Climate

The mean rainfall at Waipahu is approximately 30.5 inches per year. The months of May through October are normally dry. The median monthly rainfall during these months is less than 1.4 inches.

The predominant wind direction and higher wind speeds are from a northeast to east direction. Other predominant wind come from the north-northeast and east-northeast.

The median annual temperature is 82.6 degree F.

C. Hydrological Characteristics

The subject site is located adjacent to Kipapa Gulch. Kipapa Stream has its head waters in the Koolau Range and it joins with Waikele Stream near Waipahu, which discharges into Pearl Harbor's West Loch.

1. Ground Water

The project site is located over the Pearl Harbor basal lens aquifer. The ground water head in the aquifer is between 12 to 20 feet above mean sea level. Ground water contamination, in general, should not be a problem in the project area, since water in the basal aquifer is 280 to 405 feet below the surface.

The basal ground water aquifer of Pearl Harbor consists of Koolau and Waianae lavas and comprises approximately 100,000 acres. It extends westward from

Halawa Valley to Barbers and Kahe Points and north to the Schofield high level water body. Water levels are generally higher in the Koolau aquifer than the Waianae aquifer. Ground water levels rise to about 20 feet as far north as Waikakalaua Valley. Beyond Waikakalaua Valley the lens comes into contact with the Schofield high level water body (269+ feet msl). To the northeast, the basal lens terminates against dike aquifers associated with the main Koolau rift zone.

East of Waipahu, the narrow coastal plain is comprised of terrestrial and marine sediments. There are places where this caprock cover is not particularly thick and an average of approximately 50 mgd of ground water leaks out as spring discharge. West of Waipahu, the Ewa Plain forms a thick caprock wedge.

Water levels in the Pearl Harbor basin are affected by seasonal effects, long term effects, and short term drawdown influences due to heavy pumpage. Water levels rise rapidly when draft diminishes significantly. Regional water levels are locally influenced throughout the district by the location of large spring flows and pumping centers which may show up as head differences of 3 feet or more, depending on discharge intensity.

The proposed project is located in the Pearl Harbor Water Use District (PHD) which includes 69 square miles and overlies the basal water formation that constitutes the major water resource of southern Oahu. In addition to the PHD, the Ewa Water District (area - 119 square miles) also partly overlies the same basal ground water. This regional ground water source serves as the major resource for all of southern Oahu as well as for portions of Honolulu and Waianae, where some of the daily draft is transported and consumed.

2. Water Quality

Water quality data for Kipapa Stream collected at a crest stage gaging station located above the existing Mililani Sewage Treatment Plant (STP) discharge outfall were available for the period 1983-84. The stream at this point is affected by urban-generated point and non-point discharges. Total phosphorous and total nitrogen levels are not available; however, in natural, relatively unpolluted waters dissolved orthophosphate and dissolved nitrate are considered to be the principal forms of each of these two elements. From these test, it was evident that for non-polluted streams, the phosphorous levels are low, typically in the order of a few hundredths of a mg/l. These levels have also been observed elsewhere on Oahu for similar non-polluted streams.

TABLE 2

Kipapa Stream Water Quality
 Station No. 16212800
 October 1983 to September 1984

<u>Date</u>	<u>Mean Discharge (cfs)</u>	<u>pH</u>	<u>Temperature (Deg c)</u>
OCT.	11.1	7.0	25.0
NOV.	6.23	7.5	21.0
DEC.	1.43	--	—
JAN.	5.00	6.9	21.0
FEB.	9.30	--	—
MAR.	1.23	6.9	23.5
APR.	12.5	6.5	23.0
MAY	3.31	—	—
JUN.	1.03	7.2	25.0
JUL.	1.77	--	—
AUG.	.91	7.0	26.5
SEPT.	.54	6.8	26.0

Waiola Estates/Kipapa Ridge Estates will require .850 million gallons per day (MGD) for residential use at full development. The golf course and park sites will require an additional 0.172 MGD.

Waiola Estates/Kipapa Ridge Estates will participate with the Board of Water Supply's source development program at the Hawaiian Electric Company's Waiau power plant to satisfy potable water needs of the project.

The City has identified Waikele Stream as a nonpotable water source for golf course and park irrigation and intends to work out an agreement with Amfac for its use and apply to the Commission on Water Resource Management for approval.

3. Coastal Zone and Flood Plain Rating

The project site does not contain any wetlands and lies outside of the Coastal Zone Special Management Area. According to the U.S. Department of Housing and Urban Development "Flood Insurance Rate Map," Panel 110, the project site is in Zone D (area of undetermined but possible flood hazards).

D. Biological Characteristics

The project area has been under agricultural cultivation since the early 1900's when its original flora was removed.

Due to the existing agricultural use of the project site, insects, avifauna, and mammals populating the site are largely exotic in nature, and not considered rare or endangered species. The U.S. Department of Interior, Fish and Wildlife Service has indicated that there are no significant fish and wildlife resources present at the project site.

1. Flora

The project area has been under agricultural cultivation since the early 1900's when its original flora was removed. It is highly unlikely that rare and endangered species of flora would remain or proliferate after agricultural use of the site. Therefore, no flora survey of the project site has been undertaken.

Except for a few Royal Poinciana and Monkeypod trees along Kamehameha Highway and the Mango and Banyan trees next to the reservoir, the area has "scrub brush," about two to four feet high, and various weed type grasses. The predominant plants noted were Sour Bush, Dogtail, Hairy Horseweed, Red Pua-lele, Souththistle, Popolo, Guinea grass, Swollenfinger grass, Waltheria and Silky Oak. The site was recently replanted in pineapple.

2. Fauna

Due to the existing agricultural use of the project site, insects, avifauna, and mammals populating the site are largely exotic in nature, and not considered rare or endangered species. Various common bird species, such as the barred dove (Gopelia striata), lace-necked dove (Streptopelia chirensis chirensis), common mynah (Actidotheres t. tristis), Japanese White-eye (Zosterops Japonica Japonica) and red-crested cardinals (Paroaria coronata) may frequent the site.

Finally, pests, such as the house mouse (Mus musculus), Polynesian rat (Rattus exulans hawaiiensis), and Indian mongoose (Herpestes auropunctatus auropunctatus) are likely to be at the project site.

E. Archaeological Characteristics

The subject site is used for pineapple production and contains no permanent structures. Existing improvements are related to agricultural operations, including dirt roads and an irrigation ditch which bisects the property.

A literature search produced the following historical references to the general project area:

"Waipio. Between West Loch of Pearl Harbor and Loko Eo to the lowlands were filled with terraces which extended for over a mile up into the flats along Waikele Stream It is said that the terraces formerly existed on the flats in Kipapa Gulch for at least 2 miles upstream above its junction with Waikele.

"Waikele. In the flatland, where the Kamehameha Highway crosses the lower valley of Waikele Stream, there are the remains of terraces on both sides of the road, now planted to bananas, beans, cane and small gardens. For at least two miles upstream there were small terrace areas." (Handy, The Hawaiian Planter, 1940).

The present status of these terraces is not known, but extensive construction activities in the valleys since the time of Handy's visit have probably resulted in their destruction. No archaeological sites were mentioned in two other standard references--McAllister's Archaeology of Oahu (1933) and Sterling and Summers' Sites of Oahu (1978).

A field inspection was also made by Chiniago, Inc. on August 15, 1985 of the project area. It was concluded that structural remains (platforms, terraces, shelters, etc.) would have been destroyed by pineapple production long ago, so the only

evidence of past human utilization would be unearthed fragments of food remains and artifacts.

While no evidence of such remains were found, State law requires that should any archaeological or historic remains be uncovered during construction, further disturbance should stop and the State Historic Preservation Office notified immediately.

F. Social Characteristics

The project is situated in Census Tract 89.03 which is in the Central Oahu District or Ewa Judicial District. Census Tract 89.03 had a 1980 population of 6,566 in 1,626 households. The household density was 4.0 persons.

The proposed project will increase the area population by approximately 1,345 new households containing 3,766 to 4,304 persons.

G. Traffic

A traffic impact study was conducted by Austin, Tsutsumi & Associates, Inc. for the proposed project (Appendix D). A summary of existing traffic and roadway conditions is provided below.

1. Roadways

The existing roads within the project site are primarily for agricultural purposes. At the present time, access to the site is provided only by Kamehameha Highway, which fronts its eastern boundary.

Kamehameha Highway is a three-lane arterial highway between Mililani Town and the Waiawa Interchange,

with one lane in each direction and a center lane providing a passing lane or an exclusive left-turn lane. At Waipahu Street, Kamehameha Highway becomes a four-lane, divided highway facility as it connects to the Waiawa Interchange.

The Waiawa Interchange is a freeway to-freeway interchange between Interstate Route H-1 and the south terminus of Interstate Route H-2. Farrington Highway and Kamehameha Highway are other major arterials making freeway connections at this interchange.

2. Traffic

A manual traffic count survey was conducted on Tuesday, April 1, 1986 at intersections along Kamehameha Highway during the peak periods of traffic between Ka Uka Boulevard and Waipahu Street. The 1986 data were updated with traffic data collected in 1987, 1988 and 1989.

3. Morning Peak Period

AM peak period traffic moves well along Kamehameha Highway. However, the intersections between Waipio Uka Street and Lumiauau Street operate at "over capacity". Downstream of Waipahu Street, a problem for inbound motorists occurs at the east bound on ramp to Interstate Route H-1, where south bound Kamehameha Highway traffic merges with Waipahu traffic from east bound Farrington Highway.

4. Afternoon Peak Period

During the afternoon peak period, bottleneck conditions occur on Kamehameha Highway north bound at

Waipahu Street. The two north bound lanes on Kamehameha Highway merge to one lane north of Waipahu Street, queuing traffic onto connecting ramps.

North of Waipahu Street, traffic on Kamehameha Highway is heavy, but moves well. The Kamehameha Highway intersections at Lumiauau Street and Lumiaina Street operate at capacity.

H. Air Quality

An air quality study for the proposed project (Appendix E) was conducted by B.D. Root and B.D. Neal in February 1989 for the proposed project. A summary of ambient air quality in the project area is presented below.

Present air quality at Waiola Estates/Kipapa Ridge Estates is likely to be affected by air pollutants from four different types of sources: natural, industrial, agricultural, and vehicular. Natural air pollutant producers which could affect Waiola air quality include the ocean (sea spray), plants (aero-allergens), dust (from wind blowing over unvegetated areas or from agricultural or construction activities), or perhaps a distant volcanic eruption on the island of Hawaii.

Industrial emissions affecting Waiola would most likely come from the direction of Campbell Industrial Park (about 10 miles southwest). Industrial air pollutants consist of particulate matter, sulfur dioxide, and nitrogen dioxide. Particulates (and PM-10) are measured at Pearl City, only about three miles southeast of the project. Levels of particulates in the air have been well within allowable Ambient Air Quality Standards (AAQS) at Pearl City in recent years. When nitrogen dioxide was last measured at Sand Island in 1981, readings were well below the 24-hour standard then in force. These measurements have since been discontinued. The nearest

monitoring station for sulfur dioxide is located at Barbers Point within the Campbell Industrial Park and recent readings from that site are also well within allowable limits, indicating that pollutants from industrial sources are not likely to be a problem at this location.

Fugitive dust from sugar cane cultivation and heavy truck movements over unpaved cane haul roads as well as smoke from field burning at harvest time constitute the major types of agricultural air pollution sources likely to affect present air quality. The cane fires set at harvest time produce particulates, carbon monoxide and trace amounts of other organics. In the case of this project, the proposed residential development will be located near fields currently used for sugar cane cultivation. However, proposed developments for central and leeward Oahu will be shifting the land use from cane cultivation to residential or urban uses in future years and pollutants from agricultural activities will thus be diminishing.

Unfortunately there are no nearby long term measurements of carbon monoxide, ozone, or lead in the immediate vicinity, so the current burden of vehicular emissions is difficult to evaluate. Measurements of lead from sites in urban Honolulu indicate that most recent levels are barely above the threshold of detection for current measuring techniques. Airborne lead is thus not considered to be a problem at any Oahu location.

On the other hand, carbon monoxide and ozone readings from urban Honolulu indicate that allowable State of Hawaii standards of these vehicle-related air pollutants have recently been violated at rates of up to three times a year. Concentrations of carbon monoxide are more directly related to vehicular emissions and tend to be highest at "hot spots" near congested intersections during peak hour traffic conditions. Carbon monoxide would thus be the pollutant most likely to

cause difficulty in meeting allowable AAQS as a result of new residential development on Oahu.

I. Noise Environment

An updated traffic noise impact study was conducted by Y. Ebisu & Associates for the proposed project. This study (Appendix F) updates the Traffic Noise Impact Study for the proposed Waiola Estates Subdivision of April 1986.

Along the Kamehameha Highway Right-of-Way, existing or Base Year traffic noise levels are in the "Significant Exposure, Normally Unacceptable" category. Existing setback distances to the 65 Ldn contour line are estimated at 61 Feet and 81 Feet from the centerline of the highway in directions north and south, respectively, of the project. In the vicinity of the Waipahu Street intersection, where traffic volumes are highest, the existing setback distance to the 65 Ldn contour line is estimated at 88 Feet from the centerline of Kamehameha Highway. In the Crestview and Seaview Village Subdivision areas near the Waipahu Street intersection, traffic noise levels are in the "Significant Exposure Normally Unacceptable" category (approximately 66 to 68 Ldn) along the first row of lots which front the highway. In the Gentry Waipio Subdivision area north of the Crestview Subdivision, significantly larger (approximately 95 to 150 Feet) setbacks exist between Kamehameha Highway and the existing dwelling units, and traffic noise levels are therefore in the "Moderate Exposure, Acceptable" category at 64 to 59 Ldn.

Along Ka Uka Boulevard, existing traffic noise levels are low, and in the "Moderate Exposure, Acceptable" category, with traffic noise levels at approximately 61 Ldn along the Right-of-Way.

Existing background ambient noise levels at the proposed subdivision site are controlled by traffic noise within 500 Feet of Kamehameha Highway. Beyond that distance, background ambient noise is controlled by aircraft, or birds and other natural sources, and is estimated at 40 to 45 Ldn.

J. Public Services and Facilities

1. Police Protection

Presently, police protection for the area is adequate since the site is vacant and unused. The addition of the proposed project will require additional service.

2. Fire Protection

The following City Fire Department facilities currently serve the project area:

	<u>Response Time</u>	<u>Service</u>
Pearl City Engine Co. 20	20 miles	Primary
Waiiau, Ladder Co. 38	6 miles	Primary
Mililani Engine Co. 36	3 miles	Secondary

3. Health Care Facilities

Health care for residents is available at the Waipahu Clinic, St. Francis West Hospital and the Punawai Clinic. The latter is a Kaiser foundation clinic, and as such, offers specific local services with access to all facilities of the larger Kaiser Medical Center located in Moanalua. The Waipahu Clinic has a staff of about 50 serving the basic health needs of island residents from Waipahu to Waianae.

The nearest hospital services for residents will be available at St. Francis West Hospital which will be approximately 5 miles south of the project.

4. Educational Facilities

August Ahrens and Kanoelani Elementary, Waipahu Intermediate and Waipahu High Schools are currently operating at capacity and will require additional classrooms to service the projected increase in student enrollment.

5. Recreational Facilities

Conceptual plans call for the development of a nine hole municipal golf course and regional park as part of the planned community.

6. Public Transportation

The Crestview, Seaview and Waipio Gentry subdivisions are currently served by MTL bus route #52 every half hour in each direction to Wahiawa and Honolulu. Although current ridership is heavy on this route, bus patronage from these subdivisions is limited. An expansion of bus services would be dependent upon additional ridership demand as well as funding of MTL, and available buses.

Senior citizens are provided free bus passes for their transportation on any bus route. The State provides school bussing for students living beyond one mile from school.

VI. RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

A. Hawaii Revised Statutes, Chapter 226, Hawaii State Plan

The Hawaii State Plan is a guide for the future long-range development of the State which identifies goals, objectives, policies and priorities for the State. The overall theme of the Hawaii State Plan is:

- Individual and family self-sufficiency
- Social and economic mobility
- Community or social well-being

Specifically, the Hawaii State Plan details objectives and policies in the various areas such as population, the economy, physical environment, facility systems, socio-cultural advancement, agricultural lands, and fiscal management. The Waiola Estates/Kipapa Ridge Estates project is consistent with many of the goals and policies of the Hawaii State Plan and has been designed to facilitate its objectives. The exception is with regard to the State Agriculture Plan.

1. Population, H.R.S. Section 226-5

The Project, as a specially planned community, accommodates population growth, and provides increased housing opportunities for Hawaii's people.

2. Economy H.R.S. Section 226-6

The Project will promote these policies by providing new construction activity and housing and related amenities which will generate additional employment opportunities in the Central and Ewa districts of Oahu.

3. Water H.R.S. Section 226-16

The development of water sources for the development area will be contingent upon approval by the Department of Land and Natural Resources (DLNR) as the development area is within the Pearl Harbor Groundwater Control District.

4. Housing H.R.S. Section 226-19

The Project will provide increased affordable housing opportunities for Oahu residents in a mixed income planned community.

Tentative plans call for a school site, a municipal golf course, regional park, park-and-ride and child care facilities to enhance suburban life. Its location provides easy access to other public facilities and services.

5. Education H.R.S. Section 226-21

The Project is located in close proximity to existing public school facilities and will provide a school site if necessary. Additional school facilities may also be developed in the proposed Waikele project.

6. Agriculture H.R.S. Section 226-7

The Project will take 269.454 acres of prime agricultural lands out of agricultural use; however, no significant loss in pineapple production or jobs is expected since other high quality lands are available in other areas.

7. Transportation H.R.S. Section 226-17

The Project tentatively contains a park-and-ride facility to encourage the use of mass transit. This attempts to minimize traffic impacts and meet the State Plan objective of integrated multi-modal transportation systems. In addition the project plans include the hiring of a transportation coordinator to disseminate information on ride sharing opportunities and other transportation alternatives.

8. Energy/Utilities H.R.S. Section 226-18

The Project will comply with the objectives of this plan by promoting conservation and increased energy self-sufficiency through the use of ride-share programs, the promotion of solar heating systems, and conservation education programs. These programs will also conform with the guidelines of H.R.S. 344, which encourages the efficient use of energy resources.

B. Hawaii State Functional Plans

In furtherance of the Hawaii State Plan, Hawaii Revised Statutes, Chapter 226, the 1984 State Legislature by concurrent resolution adopted ten Functional Plans to serve as guidelines for the State of Hawaii. The Project conforms to and facilitates many of the objectives and policies of these Functional Plans. The exception is to the Agriculture Plan.

1. State Housing Plan

The Project will significantly improve the current need for affordable housing. By providing home ownership opportunities to those whose incomes will not permit participation in the conventional home buying market,

Waiola will play a major role in alleviating Hawaii's housing situation.

2. State Water Resources Development Plan

The planned level of development on the site will generate an average daily water consumption of .850 (mgd) potable water and .172 (mgd) non-potable water for irrigation of golf course and landscaping.

The Project will have little impact on the availability of fresh water supplies for other uses. The Project will not prevent the attainment or maintenance of a "sustainable yield capacity" in the amount of ground water in the Pearl Harbor basin.

3. State Energy Plan

The Project attempts to achieve these objectives. The project is located in an easily serviceable and concentrated area which is next to existing urban developments. The utilization of energy conservation devices will be encouraged through homeowner training and orientation programs conducted by the City.

4. State Health Plan

Project residents will have adequate health care facilities available at the Waipahu Clinic and Punawai Clinic. Punawai Clinic is associated with Kaiser Foundation and offers specific local services with access to the larger Kaiser Medical Center. Waipahu Clinic is designed to serve the basic health needs of residents from Waipahu to Waianae and offers a variety of services such as physical, occupational speech therapy; public health nursing; children's health services,

leprosy clinics; and complete mental health services. Additionally, Wahiawa General Hospital offers a full range of hospital services while the new St. Francis West when completed, will provide full services within a closer vicinity.

5. State Agricultural Plan

The functional plan objective is "the achievement of productive agricultural use of lands suitable for agriculture." Waiola Estates/Kipapa Ridge Estates will remove prime agricultural lands for urban use. There will be a net loss of lands, but not of productivity.

6. State Transportation Plan

The proposed park-and-ride facility is expected to contribute significantly towards meeting the State Transportation Functional Plan objective of developing a balanced, multi-modal transportation system. New employment centers in the region are also expected to divert town-bound traffic and thereby minimize interchange congestion.

C. H.R.S. Chapter 205-A Coastal Zone Management

The Project site is not designated as a special management area for which a permit is required pursuant to H.R.S. Chapter 205-A.

D. City's Planning Policies

The City's planning policies are embodied in the General Plan which is a statement of long-range social, economic, environmental and design objectives for the general welfare and prosperity of the people of Oahu. The General Plan is

implemented by regional Development Plans with relatively detailed guidelines for the physical development of Oahu.

1. General Plan

By its nature as a policy planning guide, all of the General Plan objectives are not achieved in any given development. In preparing the statement of objectives and policies, the fair distribution of social benefits was held to be of paramount importance.

The Waiola Estates/Kipapa Ridge Estates subdivision responds to this overall concern with the provision of affordable housing across a spectrum of the population.

On the other hand, the Project will impact in the population distribution guidelines for Central Oahu. Some large developments have already been approved for the area. The impact of these developments on the population figures is highly dependent on the rate of production which can be maintained over the lengthy build out time. Experience has shown that large-scale developments are often slower to evolve than originally anticipated.

With regard to maintaining the viability of agriculture on Oahu (Economic Activity, Objective C) some 269 acres of land will be removed from pineapple production. This productive capacity will however, be replaced by Castle and Cooke with no diminution in the crop output. In other instances, however, the Project is consistent with the objectives of the General Plan as it is contiguous with existing urbanized areas and the future Amfac-Waikele project, is isolated from other agricultural lands by Kamehameha Highway and Kipapa Gulch, and has the necessary infrastructure readily available. It

should be noted that several other developments in Central Oahu with thousands of units recently received land use approval.

2. Development Plan for Central Oahu

Guidance for the Project is provided by the urban design principles and controls of the Central Oahu Development Plan. In addition, the Public Facilities Map includes the widening of Kamehameha Highway from the Waiawa Interchange to Kipapa Gulch. Application of the Chapter 201E Waiver will allow the Project to proceed expeditiously.

VII. MAJOR IMPACTS AND MITIGATION MEASURES

A. Land Use

The property is currently designated as Agriculture in Development Plan for Central Oahu and AG-1 Restricted Agriculture in the Land Use Ordinance. The proposed Project will provide low-and moderate-income, gap-group and other families a reasonable choice of housing types, tenure, and location, within their means.

Under the State Land Use District Classification System, the subject property is in the Agricultural District. The land is currently used for pineapple production by Castle and Cooke, Inc. While the physical characteristics of the site meet the *current criteria for pineapple production, operations are becoming more restricted by urban encroachment.*

To address concerns about the project's proximity to the Navy "blast zone", the current site plan proposes location of a nine hole golf course along the boundary shared by the Waikele Branch, Naval Magazine Lualualei. The Department of the Navy commented that this is fully compatible with Navy operations.

B. Community Issues and Concerns

An update of community issues and concerns for the proposed Waiola Estates/Kipapa Ridge Estates Subdivision was prepared by Earthplan in February 1989 (Appendix C). This update was based on a social impact report prepared by Earthplan for the previous 1986 Waiola Estates proposal.

The update analyzes 1) the differences in issues and concerns based on changes to the original concept of Waiola Estates, and

2) how the issues and concerns on the proposed project compare to those expressed on Waiola Estates.

1. **Potential Social Impacts**

Residential Population. The proposed Project includes 1,345 residential units. Based on household sizes ranging from 2.8 persons to 3.2 persons, the Project will increase Central Oahu's population by an estimated 3,766 to 4,304 persons, which represents a substantial decrease from the 5,700 to 6,000 persons projected in the original Waiola Estates plan. This decrease is not only due to a housing unit decrease, but also to a revised mix of housing types.

Central Oahu Development Plan. Since the 1986 population analysis, the General Plan was revised to allow the Central Oahu Development Plan area a population of 148,900 to 164,900 persons by the year 2010. The resulting population allowance will be absorbed, with the City Council's recent approval of three residential proposals. Like the first Waiola Estates proposal, the proposed Project will therefore exceed the Central Oahu population guidelines.

Diversity in Housing Types. The original Waiola Estates proposal was virtually a subdivision of single family detached dwellings. Almost all of the units would have been priced for families with gap group incomes.

The mix and price range of the proposed Project's residential component are major departures from the original Waiola Estates plan. Three housing types; 850 single family, 361 townhouse, and 134 apartment units would house a diverse population, including small, medium-sized and large families, as well as individuals

and the elderly. Forty percent of the units will be for gap group families; ten percent will be sold to low and moderate income families; and ten percent will be rental units available to elderly households. The remaining 40 percent will be sold at prevailing market prices.

Increases in Residential Amenities and Community Facilities. The proposed Project expands the residential amenities by increasing recreational amenities (a regional park, and a nine-hole, par-three golf course, with a clubhouse); and providing sites for child care and park-and-ride facilities, as well as an elementary school. In the original Waiola Estates proposal, proposed residential amenities were limited to a recreational center and private park, and a site for an elementary school.

2. Issues and Concerns Overview

As with the 1986 study, interviews were held to identify preliminary community issues and concerns. The interviews did not intend to quantify project support or opposition; a controlled poll is recommended for such results. The following summarizes information they provided on issues and concerns:

Improvements Resulting from Project Changes. Almost all of those interviewed felt that the proposed Project was a vast improvement over Waiola Estates. The Project's positive aspects included (1) the introduction of market-priced housing; (2) diversifying the types of housing; (3) adding major park space along Kamehameha Highway; (4) adding a municipal golf course; and (5) adding community facilities. Community informants also noted that the planning process of the proposed Project was a major improvement over the manner in which the

original Waiola Estates plan was brought to the community.

A few did not want to discuss the plan's revisions because they felt that the Project should not proceed because of infrastructure problems.

Overall Traffic Problems. For almost all of those interviewed, traffic remains a major problem. Most of those interviewed felt that no project should be permitted until roadway improvements are in place. A few of those interviewed were resigned to the traffic woes, and felt that the project's merits outweigh these problems.

Government's Role as A Developer. Many of those interviewed felt that government should not be involved in any market-priced housing, because this segment could be better served by the private developer. The informants were split on whether the City or State should develop gap-group housing. It was generally agreed, however, that houses for families with low and moderate incomes were the responsibility of government entities, since they were not profit-oriented and could withstand losses better.

Effect on Property Values. A few of those interviewed strongly believed that the proposed Project would negatively affect their property values. Most interviewed did not share this viewpoint, but they raised this as a common issue. These people felt that the property-value issue is based on lack of information, particularly since a substantial portion of the residential component is intended for market prices. They also pointed out that the Gentry-Waipio community already has affordable housing units, and nearby property values did not seem to be affected.

Consistency with Waipahu's Efforts Toward Community Improvements. Some people interviewed felt that the proposed project is consistent with Waipahu's desire to improve its image, because they feel that the proposed project will contribute to efforts to achieve a more desirable mix of housing types and residents.

Project Reputation. Many of those interviewed pointed out that, in spite of the project's merits, Waiola Estates /Kipapa Ridge Estates will continue to be unacceptable because of previous controversy.

3. **Analysis of Issues and Concerns**

In general, the proposed Project was considered a major improvement over the original Waiola Estates plan. Some community members expressed a change in their opinion of the project based on these changes. Others, namely the residents of the nearest existing community, continued to oppose the project because the regional problems, particularly traffic, would be exacerbated by any additional residential development. Also the Gentry-Waipio residents feared that their property values would be negatively impacted because they did not believe the City capable of building quality houses.

The following is an analysis in the community issues on the proposed Project, as compared to those on Waiola Estates:

- a. **Affordable housing is less of an issue with the proposed project than with Waiola Estates.** Although affordable housing continues to be a major need, other problems, such as traffic, have become equally, if not more, pressing. In the

Gentry-Waipio survey, almost half of the respondents wanted only market housing.

- b. Traffic and infrastructure concerns have become more predominant in Waipahu.** Much of this growing apprehension is due to relatively slow-paced improvements to the roadway system, and to a governmental lack of consensus on solving the regional transportation system. Unlike the affordable housing issue, the traffic problem has few solutions being implemented.
- c. Consistency with land use policies is not a major issue with the proposed Project.** For the community informants, inconsistency with land use policies was not a major issue, even though they previously cited this as a reason against the original Waiola Estates plan.
- d. The City's credibility as a quality developer continues to be an issue.** Many of the community informants, as well as the respondents to the Gentry-Waipio survey, expressed their concern that the City was competing with the private sector, and doubted the City's ability to achieve the quality it proposes.
- e. The proposed Project elicits negative reactions because of previous controversy.** The new concept and site plan for the project site do not give "Waiola Estates" a new image. Many people associate the proposed Project with the 1986 Waiola Estates plan, and would oppose the current efforts simply because of the connection. Additional effort, such as providing a new name and soliciting more community participation, is

therefore needed to demonstrate the difference between Waiola Estates and the proposed Project.

- f. **Current regional organizations have not voiced positions on the 1988 Waiola Estates plan or the proposed project.** Thus far, only the Gentry-Waipio Community Area Association has voiced a formal position (strong opposition) on the 1988 Waiola Estates plan, and this group would likely oppose the current proposal.

Other regional organizations, however, have chosen not to voice a formal opinion on the current proposal. Although the proposed Project may have addressed the concerns expressed by these organizations, it is likely that, if any position is taken, these organizations would oppose the proposed Project because of previous commitments made to the Gentry-Waipio residents.

Since the completion of the update of community issues and concerns summarized above, the Mililani Town Association has written a letter expressing its opposition to the project.

C. **Traffic**

The traffic impacts are analyzed between the project site and the three major highway corridors in the vicinity, Kamehameha Highway, Interstate Route H-1 and Interstate Route H-2.

1. **AM Peak Period**

Kamehameha Highway would experience an 8.6% increase in inbound traffic demand as a result of the proposed project. However, all the intersections between the Project site and the Waiawa Interchange would operate at "under" or "near capacity" conditions.

Ramps on both the proposed Paiwa and Waipio Interchanges have adequate capacity to accommodate the increased demand generated by the proposed Waiola Estates/Kipapa Ridge Estates Project. Inbound Interstate Route H-1, between the Paiwa and Waiawa Interchanges would continue to operate at capacity. Project-generated traffic would increase the traffic demand by 2.9%. Inbound Interstate Route H-2 would continue to have adequate capacity to accommodate the increased traffic demand of 2.2%.

2. **PM Peak Period**

Kamehameha Highway intersections north of Waipahu Street would operate "under capacity". The Waipahu Street intersection would operate at "near capacity". The widening of Kamehameha Highway to two through lanes and an exclusive left turn lane in each direction along the project frontage would facilitate access to the project site. Kamehameha Highway, north of Waipahu Street, would experience a 7.8% increase in PM peak hour traffic in the north bound direction.

Interstate Routes H-1 and H-2 west and north of the Waiawa Interchange, are expected to accommodate the increased traffic demand generated by the Waiola Estates/Kipapa Ridge Estates Project. The Paiwa and

Waipio Interchange ramps would also be able to handle the increased demand.

3. Regional Considerations

The previous discussion on traffic impacts assumes that the traffic generated by the proposed Waiola Estates/Kipapa Ridge Estates Project is composed of all "new" trips. While this assumption may be valid for conditions along Kamehameha Highway, other factors need to be considered in a regional analysis. For example, the park-and-ride is expected to generate 113 vph and 102 vph during the AM and PM peak hours of traffic, respectively. Some of these trips are bus trips and "kiss-and-ride" trips; however, the remainder of the trips would represent an overall reduction in peak hour traffic. If it is assumed that the difference between entering and exiting traffic equals the net reduction of inbound and outbound traffic during the AM and PM peak hours, respectively, then the proposed park-and-ride facility would reduce the total residential peak hour trip generation to and from the primary urban center by about 14%. Building 1,345 residential units at other locations in Ewa or Central Oahu would result in the same impacts on traffic east of Waiawa Interchange as the proposed Project site. Furthermore, some of the new residents may already live in the Central Oahu or Ewa regions, thereby not adding to new traffic to or from Honolulu. Finally, the long term development of Ewa as a major urban center will create new employment opportunities resulting in an increase in commutes to Ewa instead of Honolulu.

4. Recommendations

At this writing, the Waipio Interchange is scheduled for completion during the second quarter of 1990.

Construction is scheduled to begin on the Paiwa Interchange in mid 1989 with completion by the end of 1990.

While the proposed improvements to Kamehameha Highway and the construction of the Waipio and Paiwa Interchanges would mitigate much of the problems currently experienced, as well as the impacts anticipated for the Waiola Estates/Kipapa Ridge Estates Project, the Interstate Route H-1/Kamehameha Highway corridor in Pearl City would remain the critical area. The proposed Project's incremental contribution to the overall congestion, however, is less than 5% of the projected peak hour conditions. Traffic mitigation measures proposed by the City and State transportation departments, are not easily quantifiable and, therefore, were not considered in the analysis. The Traffic consultants recommended the following mitigation measures:

- a. Kamehameha Highway should be widened between Waipio Uka Street and Ka Uka Boulevard to two through lanes in each direction with exclusive left-turn lanes at both intersections.
- b. The Project access road approaches at Kamehameha Highway should be similar in design to the existing Waipio Gentry access roads opposite Kamehameha Highway.

D. Air Quality

1. Short-Term Direct and Indirect Impacts of Project Construction

There will be two types of short term direct air quality impacts from project construction: fugitive dust and on-site emissions from construction equipment. There will also be a short term indirect impact from slow moving construction equipment traveling to and from the Project site as well as a temporary increase in local traffic caused by commuting construction workers.

Fugitive dust emissions will arise from grading and dirt moving activities within the project site and from any off-site dirt hauling as well.

On-site mobile and non-mobile construction equipment will also emit some air pollutants in the form of engine exhausts.

Indirectly, slow moving construction vehicles on roadways adjacent to the Project can obstruct the normal free flow of traffic to such an extent that overall vehicular emissions are increased, but this impact can be mitigated by moving heavy construction equipment during periods of low traffic volume on the roadways affected. Likewise the schedules of commuting workers can be adjusted slightly to avoid peak traffic hours in the project vicinity. Thus, most potential short term air quality impacts from project construction should be relatively easy to mitigate.

2. Long Term Direct Impact

a. On-Site

Once construction has been completed, the on-site direct air quality impact of the proposed Waiola Estates/Kipapa Ridge Estates subdivision will be minimal. Smoke from cooking, emissions of pesticides and other products used in home landscaping or in the parks or golf course, and occasional visits from roof-repairing trucks with hot tar trailers will be the only noticeable air pollution emanations.

b. Off-Site

Residents of the 1,345 dwelling units proposed for the Project will generate an annual demand for electrical energy of about 6.6 million kilowatt hours. In the worst case this demand would be met by burning additional fuel oil in existing power plants, primarily the Kahe Power Plant on the Waianae coast. This new energy requirement could be reduced significantly by installing solar water heaters on all new homes and by incorporating solar design features into all construction plans, e.g. use of landscaping to provide afternoon shade to cut down on use of air conditioning and positioning of windows to maximize indoor light without unduly increasing indoor heat.

3. Long Term Indirect Impact of Project-Related Traffic

By serving as an attraction for increased motor vehicle traffic in the area, the proposed Waiola Estates/Kipapa Ridge Estates Subdivision must be considered to be a potentially significant indirect air pollution source.

Motor vehicles, especially those with gasoline-powered engines, are prodigious emitters of carbon monoxide. Motor vehicles also emit some nitrogen dioxide and those burning fuel which contains lead as an additive contribute some lead particles to the atmosphere as well. The major control measure designed to limit lead emissions is a Federal law requiring the use of unleaded fuel in most new automobiles. Reported quarterly averages of lead in air samples collected at the Department of Health building on Punchbowl and Beretania Streets in urban Honolulu have been zero since early 1986.

4. Carbon Monoxide Diffusion Modeling

The modeling study yields carbon monoxide concentrations at four sites in the project area which can be compared directly to allowable State and Federal ambient air quality standards. The traffic impact study for the project indicated that these intersections would be likely to have various degrees of increased traffic following Waiola Estates/Kipapa Ridge Estates project development. Traffic volumes near most of these sites were highest during the morning peak hour and worst case meteorological diffusion conditions are also most likely to occur at that time. Thus, all one-hour computations were performed for the morning rush hour situation. Modeling was performed for 1989 and

for 1993 (the planned year of completion for Waiola Estates/Kipapa Ridge Estates Subdivision).

Results of the peak hour carbon monoxide analysis are summarized in the appendix E. Current peak hour carbon monoxide levels under the worst case assumptions used in this study are higher than allowable State of Hawaii AAQS only at one of the sites. This situation will be greatly ameliorated when the Waipio Interchange on the H-2 Freeway is completed and both Kamehameha Highway and Waipio Uka traffic currently transiting through this intersection will have access to the freeway system via another route. Reduced levels of Waipio Uka traffic have an especially beneficial impact on the intersection since Kamehameha Highway traffic is thus afforded a greater percentage of green time and thus less frequent queuing at this signalized intersection. Mandated future reductions in automobile emissions by 1993 also contribute to the significant decrease in expected peak hour carbon monoxide concentrations at this location under the 1993 without-Project modeling scenario. Under the 1993 with-Project modeling scenario, however, widening Kamehameha Highway and making four-way signalized intersections at these sites raises expected worst case morning peak hour carbon monoxide concentrations to allowable State of Hawaii limits. Increases in traffic levels at these intersections after the 1995 maximum impact target date of the current emissions reduction program are virtually certain to lead to worst case carbon monoxide concentrations in excess of the allowable State of Hawaii one hour limit. Expected worst case morning peak carbon monoxide levels in the vicinity of Paiwa Interchange are expected to exceed the allowable State of Hawaii standard in 1993 when Project traffic is added to that already generated by Waikele.

Computed worst case one-hour carbon monoxide concentrations are well within Federal AAQS at all four sites with or without Project traffic.

Computed worst case eight-hour carbon monoxide concentrations are within both State of Hawaii and Federal AAQS under all scenarios considered.

It is important to note that the worst case peak hour values presented here have different probabilities of occurrence depending upon the wind direction necessary to produce highest levels in the vicinity of a given roadway configuration. Some of the wind directions required to yield worst case values in this modeling study occur only one or two times per year.

5. Regional Considerations

Aside from potential indirect air quality impacts in the immediate project vicinity, there are potential regional scale impacts to be considered as well. Carbon monoxide computations carried out as part of air quality impact studies for other projects in the leeward area of Oahu have indicated potentially high levels of carbon monoxide along the H-1 corridor between Pearl City and Aloha Stadium. Morning peak hour concentrations on the order of twice the State of Hawaii one hour limit have been estimated under worst case conditions. Any proposed project which has the potential to increase traffic volumes along this corridor can only serve to intensify the magnitude of this problem.

The Waiola Estates/Kipapa Ridge Estates Project could add as many as 500 peak hour vehicles to existing levels along this critical corridor. This represents about five

percent of existing traffic, and the peak hour contribution of Waiola Estates/Kipapa Ridge Estates traffic alone could be as high as one to two miligrams per cubic meter.

However, it is very difficult to quantitatively evaluate the potential regional air pollution impact of a new project. In the first place, many of the automobiles treated as new traffic in this analysis are already commuting over this corridor from residences that are essentially unzoned Ohana arrangements with parents or relatives. Providing them affordable housing merely shifts the starting point of their commute. Then it is necessary to consider that the congested portion of the H-1 will remain congested, operating at something near its physical capacity, no matter where in central or leeward Oahu new traffic demand originates. This means that peak one hour levels of carbon monoxide along this corridor cannot increase at the same rate that traffic demand increases, because it is not possible to increase peak hour traffic levels above the capacity of the roadway. What happens instead is that peak eight hour levels of carbon monoxide will be increasing at some uncertain rate as the length of each "rush hour" increases to two or three hours. There are no EPA guidelines for evaluating the magnitude of this type of impact, so it is possible only to state that such a scenario is likely to unfold whether the Waiola Estates/Kipapa Ridge Estates Subdivision is developed or not.

6. Mitigative Measures

a. Short Term

From an air quality standpoint, the major short term impact of project construction will be

potential emissions of fugitive dust. Strict compliance with State of Hawaii Air Pollution Control Regulations regarding establishment of a regular watering program and covering dirt-hauling trucks should effectively mitigate this concern.

b. Long Term

On-site air pollutant emissions from the proposed Waiola Estates/Kipapa Ridge Estates Project are likely to be minimal once the project is completed and occupied. Off-site there will be impacts generated because of new residential demands for electrical energy and waste incineration. Electrical requirements can be reduced somewhat by planning and implementing solar energy design features to the maximum extent possible.

Other indirect long term air quality impacts are expected in those areas where traffic congestion can potentially be worsened by the addition of vehicles traveling to and from the project. Project-related vehicles operating on Oahu roadways should be reduced somewhat by provision of the three-acre, 150-stall park and ride facility planned as part of the project. The potential mitigative effect of this facility is included in the traffic projections (and hence the air quality analysis) for the project. The only other logical way to mitigate air pollution impacts associated with the proposed development would be to reduce the size and scope of the Project to produce fewer peak hour vehicle trips.

E. Noise Quality

1. Traffic Noise

Future traffic noise levels can be expected to be in the "Significant Exposure, Normally Unacceptable" noise exposure category along the Waiola Estates/Kipapa Ridge Estates Right-of-Way which fronts Kamehameha Highway. This conclusion is valid for both the existing and future Right-of-Way widths of Kamehameha Highway. A minimum setback distance of 100 Feet from the centerline of the widened highway is required to meet FHWA and FHA/HUD standards for the worst case condition of approximately 5,000 VPH on the improved highway. The use of a 50 Feet noise setback from the Kamehameha Highway Right-of-Way is planned for Waiola Estates/Kipapa Ridge Estates homes fronting the highway. This setback, plus the 50+ Feet distance between the highway Right-of-Way and the displaced highway centerline should be sufficient to maintain traffic noise levels at Waiola Estates/Kipapa Ridge Estates homes in the "Moderate Exposure, Acceptable" category. For this reason, additional noise mitigation measures are not required for compliance with FHA/HUD standards at future Waiola Estates/Kipapa Ridge Estates homes along the highway.

Along Kamehameha Highway, at the existing Crestview and Seaview Village Subdivisions, traffic noise levels are predicted to decline from Base Year levels by approximately 0.3 Ldn from existing levels of approximately 66 Ldn. For this reason, project related traffic noise impacts are not expected to occur in the Crestview and Seaview Village Subdivisions.

At the existing Gentry Waipio residences south of Waipio Uka Street, project related noise impacts are not expected due to the projected decrease in total traffic source noise levels by approximately 1.1 Ldn following completion of the project. However, due to the highway widening project, a 1.5 Ldn increase in traffic noise is predicted to occur as a result of the displacement of the highway centerline toward the Gentry Waipio residences. By CY 1993, a net increase of 0.4 Ldn is predicted due to changes in traffic volume and the widening project. The extra sound shielding (or attenuation) benefits of the roadway cut in the area were not included in these estimates of the net increase in noise levels in the area south of Waipio Uka Street. A more detailed evaluation of the traffic noise levels in this area should be performed after the geometry of the new roadway cut is established.

Because of the large setback distance between Kamehameha Highway and Gentry Waipio residences north of Waipio Uka Street, future traffic noise is predicted to be below FHA/HUD noise mitigation thresholds, and remain in the "Moderate Exposure, Acceptable" noise category in the Gentry Waipio area. Along Kamehameha Highway and north of the project toward Mililani Town, project related traffic noise impacts are predicted to be minimal and insignificant. Predicted increases in traffic noise levels attributable to project traffic were calculated to be 0.3 Ldn. Project and non-project traffic entering and exiting H-2 Freeway via the new access ramps are predicted to use Ka Uka Boulevard between the freeway and Kamehameha Highway. Traffic noise level increases along Ka Uka Boulevard by the 1993 period are predicted to be moderate (0.7 Ldn), and should not exceed federal standards at existing residences fronting the boulevard.

Traffic noise impacts along the freeway are expected to be minimal because the major portion of the lands adjoining the freeway south of the planned access ramps are currently undeveloped, or are shielded from freeway noise by topographic features.

2. Possible Noise Mitigation Measures

The results of this and the previous noise study indicate that sufficient setback distances exist to noise sensitive developments in the Gentry Waipio area between Waipio Uka Street and Ka Uka Boulevard, such that noise mitigation measures are not required for these existing Gentry Waipio residences. However, sufficient setback distances do not exist in the Crestview and Seaview Subdivision areas toward Waipahu Street, and will probably not exist following the planned widening of Kamehameha Highway in that area. A minimum wall height of 6 Feet may be required along the new highway Right-of-Way to reduce future traffic noise levels below 65 Ldn. A few (approximately four) two story homes in the area will not be entirely shielded by a 6 Feet high wall, and the use of other mitigation measures, such as air conditioning affected rooms or installation of window sound attenuators, may be employed.

During construction, there is likely to be noise generated from excavation, foundation, erection of structures, and finishing activity. However, adverse noise impacts resulting from the proposed Project are expected to be rather limited.

F. Drainage System

The Waiola Estates/Kipapa Ridge Estates Subdivision development will be generally sloped from north to south, the same pattern of the existing topography.

Except for some minor surface runoff from along Kamehameha Highway fronting the project site, areas outside the confines of the development area do not contribute any storm water to the site. However, as part of this project, improvement will be made to the highway fronting the development area and the runoff along the highway will be collected and directed to the existing drain line on Waipio Uka Street. Therefore, the drainage systems for the subdivision will handle only on-site surface runoff. A network of underground drainage systems, together with inlet structures will handle the runoff from the development area.

Presently, concentrations of surface runoff from the development area discharges at five (5) different offsite locations. The network of underground drainage systems for the development will discharge into these five (5) off-site locations.

When the 270 acres are fully developed, the site will generate approximately 866 cfs during a 10-year ($T_m = 10$ yr) storm. During peak storm ($T_m = 50$ yr), the area will generate approximately 1,134 cfs.

The criteria set forth in the Storm Drainage Standards, May 1988, of the Department of Public Works, City and County of Honolulu, will be used in the drainage network systems for this project. The systems will be designated to handle a 10-year storm.

A preliminary drainage plan has been approved by the Department of Public Works. Unanticipated delays in the Waikele development schedule will not affect drainage conditions for the Project.

The preliminary drainage report and an earlier study entitled "Environmental Aspects of Storm Water Runoff" are attached as Appendix G and H.

G. Water Supply System

To meet the water needs of the proposed development, onsite and offsite facilities must be developed.

The Project will participate with the Board of Water Supply's source development program at the Hawaiian Electric Company Waiau power plant to make water available for Waiola Estates/Kipapa Ridge Estates. A new 1.5 million gallon reservoir will be constructed at the existing Waipio Heights 595' Reservoir site and approximately 5,300 LF of new 16" transmission main will be installed from the Waipio Heights 595' Reservoir along the existing access road paralleling the existing 20" transmission main to Ka Uka Boulevard.

Onsite water transmission mains and fire hydrants will be constructed according to Board of Water Supply standards. The use of Waikele Stream as a nonpotable water source is proposed for the project's golf course and park irrigation requirements

A water master plan for both the onsite and offsite water system improvements will be prepared and submitted to the Board of Water Supply for approval.

H. Sanitary Sewer System

Wastewater from the proposed Waiola Estates/Kipapa Ridge Estates will be collected by onsite improvements and flow to the Waipahu Wastewater Pump Station. The wastewater will then be pumped to the Honouliuli Wastewater Treatment Plant, treated and then discharged into the ocean via the Barbers

Point Deep Ocean Outfall. The Department of Public Works has indicated that there is adequate sewage treatment capacity at the Honouliuli Wastewater Treatment Plant for this project.

The southeasterly portion of the Project will utilize an existing 18" trunk sewer line serving the Gentry Waipio subdivision. The remaining portion of the project will utilize a sewer line that will be constructed through Amfac's Waikele project and connect to the 15-inch sewerline on Paiwa Street. Delays in the Waikele development schedule will not affect the proposed sewer line.

A total of .430 MGD will be generated by this project and will be collected and treated as described above. A sewer master plan will be submitted to the Department of Public Works so that the adequacy of existing sewerlines can be determined.

I. Public Facilities

1. Schools

The Department of Education has indicated that the proposed Project may generate the following student enrollment increases:

<u>School</u>	<u>Grades</u>	<u>Approximate Enrollment</u>
Unnamed Elem.	K-6	300 - 500
Waipahu Inter.	7-8	100 - 200
Waipahu High	9-12	150 - 250

The Department of Education (DOE) is considering these alternatives to accommodate the increase in the K-6 grades: 1) build the school located in the Waiola Estates/Kipapa Ridge Estates development, 2) send the

students to Kanoelani Elementary in the Gentry subdivision, 3) send the students to the proposed schools in the Waikele subdivision, or 4) bus the students to the Pearl City area schools.

The Department of Education has also stated that Waipahu Intermediate and High Schools are both operating at capacity. Funding for portable classrooms will be needed to meet the immediate short-term impact. Permanent buildings will be needed for long-term needs.

2. Fire Protection

The City and County of Honolulu Fire Department has indicated that fire protection for the proposed Project would be provided by engine companies from Pearl City and Mililani Stations and a ladder company from Waiiau Fire Station. A new fire station housing an engine and a ladder company is planned for the adjacent Waikele area.

Fire protection service and facilities planned and now provided are considered adequate.

**VIII 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 Project will commit the necessary construction materials and human resources (in the form of planning, designing, engineering, construction labor, landscaping and management, service offices, and maintenance functions). Some of the construction materials could be reused if and when the structures are 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.

The appearance of the project site will be altered from its present open appearance to that of a completed planned low density residential community. The development will be highly visible but visually integrated with the surrounding areas.

Air and noise quality will be adversely affected by this proposed Project, but will remain in compliance with State standards. While ambient air and noise quality in the area is relatively good, the proposed development will result in a greater number of vehicles going to and from the project areas, resulting in increased vehicular pollution emissions.

The Project development will result in a commitment of land for a long-term period. Once the land use of the property is established, it is unlikely that the land will revert to a lower usage in the long-term future. Commitment of land for these purposes will likely foreclose certain future use options of the land.

The Project development will, in the short- and long-term periods, result in residential use which will benefit the future residents of the community.

IX. ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

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

- (1) Agricultural use of the land will be lost.
- (2) The site-clearing and construction work will result in temporary fugitive dust, some disruption to traffic, and noise.
- (3) Traffic will increase from the number of additional cars utilized by the proposed development. Additional impacts associated with increased traffic include those for potential air and noise quality. It should be noted that carbon monoxide levels during peak periods traffic conditions have exceeded allowable State of Hawaii Air Quality Standards under unfavorable meteorological dispersion conditions.
- (4) The need for utility services will increase.
- (5) The need for public services for fire and police protection, and public recreational facilities will increase slightly.
- (6) Solid waste and sewage generated by the project will increase the need for disposal and treatment and will increase total local waste output.

X. SUMMARY OF UNRESOLVED ISSUES

At this time, there are no unresolved issues with respect to potential physical impacts. The following permits and approvals are required prior to implementation.

Authority	Approval Required
<u>State of Hawaii</u>	
Land Use Commission	Land Use District Boundary Amendment
Department of Health Board of Land and Natural Resources	New Water Source System Approval Increased water allocations within Pearl Harbor Ground Water Control area
<u>City and County of Honolulu</u>	
Dept. of General Planning	General Plan Amendment Central Oahu DP Amendments
Dept. of Land Utilization	Zone Change Subdivision Approvals
Dept. of Public Works/ Building Dept.	Building Permits Grading Permits

As mentioned earlier, the Department has the authority to request City Council approval for exemptions from development requirements under Section 201E-210, Hawaii Revised Statutes.

Alternatives to the proposed action were found to be less desirable than the proposed project.

**XI. AGENCIES AND ORGANIZATIONS CONSULTED DURING THE
EIS PREPARATION NOTICE PERIOD**

ORGANIZATIONS AND AGENCIES

<u>Agency</u>	<u>Date of Comment</u>	<u>Date Comment Received</u>	<u>Date of Response</u>
Federal			
Department of Housing & Urban Development	1/17/89	1/20/89	2/10/89
U.S. Army Corps of Engineers	1/24/89	1/25/89	2/10/89
U.S. Department of the Interior, Fish & Wildlife Service	1/04/89	1/05/89	2/02/89
U.S. Army Engineering Division, Real Estate Branch	-----	-----	-----
U.S. Department of Agriculture, Soil Conservation Service	1/03/89	1/06/89	2/02/89
Department of the Navy	1/26/89	1/30/89	2/08/89
State			
Department of Education	1/10/89	1/23/89	2/02/89
Department of Business and Economic Development	1/20/89	1/24/89	2/02/89
Office of State Planning, Governor's Office	1/23/89	1/27/89	2/08/89
Department of Health	2/01/89	2/10/89	2/21/89
Department of Land and Natural Resources	1/27/89	1/31/89	2/21/89
Department of Land and Natural Resources, Historic Preservation Office	-----	-----	-----
Office of Environmental Quality Control	-----	-----	-----
Department of Transportation	-----	-----	-----
Department of Agriculture	1/19/89	1/23/89	2/02/89
Hawaii Housing Authority	1/04/89	1/09/89	2/02/89
Housing Finance & Development Corporation	1/24/89	1/27/89	2/08/89
Land Use Commission	12/27/88	1/03/89	2/02/89
Environmental Center	1/03/89	1/06/89	2/02/89
Department of Accounting & General Services	1/03/89	1/04/89	2/02/89

<u>Agency</u>	<u>Date of Comment</u>	<u>Date Comment Received</u>	<u>Date of Response</u>
City			
Department of General Planning	1/04/89	1/06/89	2/02/89
Department of Land Utilization	-----	-----	-----
Department of Transportation Services	1/27/89	1/30/89	2/08/89
Building Department	1/20/89	1/23/89	2/02/89
Department of Public Works	1/19/89	1/23/89	2/02/89
Department of Parks and Recreation	1/24/89	1/25/89	2/08/89
Board of Water Supply	1/11/89	1/19/89	2/02/89
Fire Department	1/20/89	1/24/89	2/02/89
Honolulu Police Department	1/09/89	1/10/89	2/02/89
Office of Human Resources	1/12/89	1/19/89	2/02/89
Department of Finance	-----	-----	-----
Others			
Hawaiian Electric Company	1/30/89	2/01/89	2/10/89
Hawaiian Telephone Company	1/09/89	1/11/89	2/02/89
The Gas Company	-----	-----	-----
American Lung Association	1/04/89	1/06/89	2/02/89
Waipahu Community Association	1/12/89	1/19/89	2/02/89
Waipahu Businessmen's Association	-----	-----	-----
Hawaii's Thousand Friends	-----	-----	-----
Waipahu Neighborhood Board No. 22	-----	-----	-----
Mililani Neighborhood Board No. 25	1/17/89	1/18/89	1/23/89
Wahiawa Neighborhood Board No. 26	-----	-----	-----
Castle & Cooke Land Company	12/30/88	1/03/89	2/02/89
Waipio Gentry Community Association	1/11/89	1/13/89	2/02/89

U.S. Department of Housing and Urban Development
Honolulu Office, Room 12
300 Ala Moana Blvd., Room 3218, Box 50007
Honolulu, Hawaii 96810-4891



January 17, 1989

Mr. Michael N. Scarfone, Director
Dept. of Housing & Community Dev.
City and County of Honolulu
650 South King Street
Honolulu, HI. 96813

Dear Mr. Scarfone:

SUBJECT: Environmental Impact Statement Preparation Notice
Proposed Waioala Estates Subdivision, Waipio, Oahu

This responds to your letter dated December 23, 1988 that requests comments on issues that should be addressed in the Environmental Impact Statement for the subject project. We understand that the 269.4 acre site is presently used for agricultural production (pineapple) and will be developed for residential and recreational uses. Those uses include provisions for approximately 850 single-family lots, 305 townhouses and 190 apartment units. We also understand that a number of housing units will be oriented to elderly housing and rentals for senior citizens. Other land uses include a nine-hole golf course; a neighborhood park and district parks; a school/playground; a child care center and a park-and-ride facility.

We submit the following comments and recommendations that should be considered if HUD assistance is proposed.

1. HUD regulations, 24 CFR Part 50: Protection and Enhancement of Environmental Quality, would not require the preparation of a full Environmental Impact Statement based on the proposed 1345 units.
2. Since the proposed action will convert prime agricultural land to urban use, it must comply with the Farmlands Protection Policy Act of 1981. The implementing regulations for this act are found in 7 CFR Part 658.7(b).
3. Traffic generated by the proposed project will add to the current traffic congestion on Kamehameha Highway and the Waiau interchange. An assessment of vehicular traffic generated by the build-out of Milliani Town and Gentry Waipio should be considered along with the proposed project.
4. Heavy traffic on Kam Highway may threaten air quality standards for carbon monoxide.

2

5. Current and projected traffic volumes (to 20 years) on Kam Highway should be evaluated to determine if mitigation measures are required to comply with 24 CFR Part 51 Subpart B: Noise Abatement and Control. The evaluation should be based on the average noise levels for a typical 24-hour period in terms of Ldn.

6. The project's consistency with Hawaii's Coastal Zone Management Program should be evaluated.

7. The proposal to provide elderly housing in this project appears questionable in view of the remote location of the project in reference to readily available health care facilities and a wide array of shopping facilities.

8. HUD would be responsible for complying with the National Historic Preservation Act of 1966 as amended and would be guided by 36 CFR Part 800.4.

If you have any questions you may call Frank Johnson at 541-1327.

Very sincerely yours,

Calvin Lew
Director
Community Planning and
Development Division

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

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PHONE 533-4437



FRANK P. ZAM
MAYOR

MICHAEL N. SCARFONE
DIRECTOR
WHAHM E. KAMAKA
DEPUTY DIRECTOR

February 10, 1989

Mr. Calvin Lew, Director
Community Planning and
Development Division
U.S. Department of Housing
and Urban Development
Honolulu Office Region IX
300 Ala Moana Boulevard, Room 3318
Box 50007
Honolulu, Hawaii 96850-4991

Dear Mr. Lew:

Subject: Environmental Impact Statement Preparation Notice
Waioia Estates Subdivision

We have received your Agency's comments dated January 17, 1989.
The impacts identified by your review will be discussed in the
Draft EIS currently under preparation.

Thank you for your assistance.

Sincerely,

MICHAEL N. SCARFONE
Director

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
Bldg. 230
Ft. Shafter, Hawaii 96858-5440

REPLY TO
ATTENTION OF:

Planning Branch

Mr. Michael N. Scarfone, Director
Department of Housing and
Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Thank you for the opportunity to review the
Environmental Impact Statement Preparation Notice (EISP/N)
for the proposed Waiala Estates Subdivision, Waipio,
Oahu, Hawaii. The following comments are offered:

a. Kipapa Stream and Waikale Stream are headwaters
streams. Placing of fill in either these streams would
require a Department of the Army permit.

b. The flood hazard information presented in the
EISP/N (page 6, section C) is accurate.

Sincerely,

C. Cheung
Kisuk Cheung
Chief, Engineering Division

'89 JAN 25 P2:54
DEPT. OF HOUSING
& COMM. DEVELOPMENT

FRANK P. PAN
MAIL ROOM

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

130 SOUTH KING STREET 5TH FLOOR
HONOLULU HAWAII 96813
PHONE 933-4437



MICHAEL N. SCARFONE
DIRECTOR
MICHAEL KAMARA
DEPUTY DIRECTOR

February 10, 1989

Mr. Kisuk Cheung, Chief
Engineering Division
Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Ft. Shafter, Hawaii 96858-5440

Dear Mr. Cheung:

Subject: Environmental Impact Statement Preparation Notice
Waiala Estates Subdivision

We have received your comments dated January 24, 1989. In
response to your specific comments, we do not intend to place
fill in Kipapa or Waikale Stream and note your acknowledgement
of the correctness of the EISP/N flood hazard information.

Thank you for your assistance.

Sincerely,

Michael N. Scarfone
MICHAEL N. SCARFONE
Director



United States Department of the Interior
FISH AND WILDLIFE SERVICE
 PACIFIC ISLANDS OFFICE
 P.O. BOX 50167
 HONOLULU, HAWAII 96813

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
 430 SOUTH KING STREET, 5TH FLOOR
 HONOLULU, HAWAII 96813
 PHONE 523-4457



MICHAEL N. SCARFONE
 DIRECTOR
 MIRIAM K. SAMARA
 DEPUTY DIRECTOR

FRANK P. FARM
 1/1/89

Mr. Michael N. Scarfone, Director
 Department of Housing and Community
 Development
 City and County of Honolulu
 650 South King Street, 5th Floor
 Honolulu, Hawaii 96813

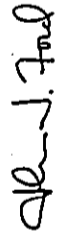
February 2, 1989

ES Room 6307
 JAN 4 1989
 JAN -5 P2:02
 DEPT. OF HOUSING AND COMM. DEVELOPMENT

Re: Environmental Impact Statement Preparation Notice of
 Proposed Waiola Estates Subdivision Situated in Waipio, Oahu
 Dear Mr. Scarfone:

We have reviewed the material provided in Mr. Mike Moon's letter of December 23, 1988. To the best of our knowledge, there are no significant fish and wildlife resources within our jurisdiction present at the project site. We have no other comments to offer at this time.

We appreciate this opportunity to comment.

Sincerely yours,


Ernest Kosaka
 Field Office Supervisor
 Environmental Services

cc: NMFS - WPP0
 DLNR

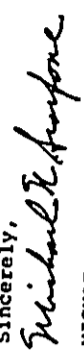
Mr. Ernest Kosaka
 U.S. Department of the Interior
 Fish and Wildlife Service
 Pacific Islands Office
 P. O. Box 50167
 Honolulu, Hawaii 96850

Dear Mr. Kosaka:

Subject: Environmental Impact Statement Preparation Notice
 Waiola Estates Subdivision

We are in receipt of your Office's comments dated January 4, 1989. We will include in the Draft EIS your statement that there are no significant fish and wildlife resources present at the project site.

Thank you for your comments.

Sincerely,

 MICHAEL N. SCARFONE
 Director



UNITED STATES
DEPARTMENT OF
AGRICULTURE

SOIL
CONSERVATION
SERVICE

P. O. BOX 5000A
HONOLULU, HAWAII
96850

January 3, 1989

Mr. Michael N. Scarfone, Director,
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

'89 JAN -6 P1:43
DEPT OF HOUSING
COMM DEVELOPMENT

Dear Mr. Scarfone:

Subject: Environmental Impact Statement Preparation Notice (EISP) for
Proposed Waioala Estates Subdivision Situated in Waipio, Oahu.

The above-mentioned notice has been reviewed as requested. The following
comments are provided for consideration:

The draft EIS should identify any potential erosion or sedimentation that
may result from the proposed project and identify needed corrective actions
that will be taken. The effect of the proposal on any prime agricultural
land in the area should also be discussed.

Sincerely,

Warren M. Lee

WARREN M. LEE
State Conservationist

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

890 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 833-4437



FRANKY PAI
198908

MICHAEL N. SCARFONE
DIRECTOR
MEHANE RAMAKA
DEPUTY DIRECTOR

February 2, 1989

Mr. Warren M. Lee
U.S. Department of Agriculture
Soil Conservation Service
P. O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Lee:

Subject: Environmental Impact Statement Preparation Notice
Waioala Estates Subdivision

We have received your Agency's comments dated January 3, 1989.
The comments on erosion and impact on prime agricultural lands
will be discussed in the Draft Environmental Impact Statement
currently under preparation.

Thank you for your comments.

Sincerely,

Michael N. Scarfone

MICHAEL N. SCARFONE
Director



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

MINUTE REFER TO
 89 JAN 30 11 39
 DEPT. OF HOUSING & COMM. DEVELOPMENT
 1181A
 SEP 26 1989

Mr. Michael N. Scarfone, Director
 Department of Housing & Community Development
 650 South King St., 5th Floor
 Honolulu, HI 96813

Dear Mr. Scarfone:

CHAPTER 343, HAWAII REVISED STATUTES
 ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
 PROPOSED WAIOLA ESTATES SUBDIVISION SITUATED IN WAIPIO, OAHU

In response to your letter of January 19, 1989, we would like to be consulted in the preparation of the Environmental Impact Statement for the subject project.

Sincerely,

W. K. LIU
 Assistant State Civil Engineer
 In direction of
 the Commissioner

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
 CITY AND COUNTY OF HONOLULU
 830 SOUTH KING STREET, 8TH FLOOR
 HONOLULU, HAWAII 96813
 PHONE 522-2427



FRANCO FARM
 24108

MICHAEL N. SCARFONE
 DIRECTOR
 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

February 8, 1989

Mr. W. K. Liu
 Department of the Navy
 Commander, Naval Base Pearl Harbor
 Box 110
 Pearl Harbor, Hawaii 96860-5020

Dear Mr. Liu:

Subject: Environmental Impact Statement Preparation Notice
 Waiola Estates Subdivision

We have received your Agency's request dated January 26, 1989 to be a consulted party.

Thank you for your continuing interest.

Sincerely,

MICHAEL N. SCARFONE
 Director



JOHN WALKER
SUPERINTENDENT



STATE OF HAWAII
DEPARTMENT OF EDUCATION

P. O. BOX 2344
HONOLULU, HAWAII 96814

CHARLES T. TOGUCHI
SUPERINTENDENT

Mr. Michael N. Scarfone -2-

January 10, 1989

Waipahu Intermediate and High schools are both operating at capacity. Funding for portable classrooms will be needed to meet the immediate short-term impact. Permanent buildings will be needed for the long-term needs.

Should you have any questions, please call our Facilities Branch at 747-4743.

Sincerely,
Charles T. Toguchi
Charles T. Toguchi
Superintendent

CTT:jl

cc E. Imai, OBS
; E. Makano, Leeward Dist.

January 10, 1989
RECEIVED
COMM DEVELOPMENT
JAN 23 AM 10:32

Mr. Michael N. Scarfone, Director
Department of Housing and Community Development
650 S. King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

SUBJECT: Chapter 343, Hawaii Revised Statutes
EIS Preparation Notice, Proposed Waioala Estates
Subdivision Situated in Waipio, Oahu

Our review of the proposed housing development indicates that it may generate the following student enrollment in our area schools:

SCHOOL	GRADES	APPROXIMATE ENROLLMENT
Unnamed Elem.	K-6	300 - 500
Waipahu Inter.	7-8	100 - 200
Waipahu High	9-12	150 - 250

There are a number of alternatives we will need to monitor to accommodate the K-6 grades. The alternatives are: 1) build the school located in the Waioala Estates development, 2) send the students to Kanoelani Elementary in the Gentry subdivision, 3) send the students to the proposed schools in the Waioala subdivision, or 4) bus the students to the Pearl City area schools.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 8TH FLOOR
HONOLULU, HAWAII 96813
PHONE 533 4437



FRANK F. JAR
MAYOR

MICHAEL N. SCARFONE
DIRECTOR
MIRIAM KAMALA
DEPUTY DIRECTOR

February 2, 1989

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

Dear Mr. Toquchi:

Subject: Environmental Impact Statement Preparation Notice
Waiala Estates Subdivision

We have received your Department's comments dated January 10, 1989. The impacts that you have identified will be included in the Draft Environmental Impact Statement (DEIS).

Our staff will continue to work with your Facilities Branch and Leeward District offices to insure that this aspect of project design is carried through to our mutual satisfaction.

We look forward to your review of the DEIS and thank you for your continuing interest.

Sincerely,

MICHAEL N. SCARFONE
Director

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT

JOHN W. SCARFONE
DIRECTOR
ROGER A. ULVELING
DEPUTY DIRECTOR
BARBARA KAI SLAYTON
DEPUTY DIRECTOR
LISE S. MAZURARA
DEPUTY DIRECTOR

KAMAMALU BUILDING, 250 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
MAILING ADDRESS: PO BOX 2391, HONOLULU, HAWAII 96813
TELEPHONE: (808) 537-4427

January 20, 1989

Mr. Michael N. Scarfone, Director
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Chapter 343, Hawaii Revised Statutes
Environmental Impact Statement Preparation Notice
Proposed Maiola Estates Subdivision Situated in Waipio, Oahu

The Department of Business and Economic Development requests to become a consulted party on the preparation of the EIS.

The EIS should address the energy impacts of the proposed project pursuant to Chapter 226, Hawaii Revised Statutes.

If you have any questions, please call Maurice H. Kaya, Energy Program Administrator, at 548-4150.

Sincerely,

Roger A. Ulveling
Roger A. Ulveling

89 JAN 24 AM 11:27
DEPT OF BUS & COMM DEVELOPMENT

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 933-4427



MICHAEL N. SCARFONE
DIRECTOR
MICHAEL N. SCARFONE
DIRECTOR

February 2, 1989

Mr. Roger A. Ulveling, Director
Department of Business and Economic Development
Kamamalu Building
250 South King Street
Honolulu, Hawaii 96813

Dear Mr. Ulveling:

Subject: Environmental Impact Statement Preparation Notice
Maiola Estates Subdivision

We are in receipt of your Department's request dated January 20, 1989 to be a consulted party. We will address your specific comment regarding the energy impacts in the Draft Environmental Impact Statement.

Thank you for your continuing interest.

Sincerely,

Michael N. Scarfone
MICHAEL N. SCARFONE
Director



OFFICE OF STATE PLANNING
Office of the Governor

STATE CAPITAL, HONOLULU, HAWAII 96813 TELEPHONE (808) 548-3000

ENVIRONMENTAL CONTROL

January 23, 1989

89 JAN 27 10 30
COMMUNICATIONS SECTION

Mr. Michael N. Scarfone, Director
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

SUBJECT: Environmental Impact Statement Preparation Notice (EISPN)
Proposed Maloia Estates Subdivision Situated in Maipio, Oahu

We have reviewed the subject EISPN for the Maloia Estates Subdivision. According to the preliminary development plan (Figure 3), the proposed project is comprised of single and multifamily units, a school, childcare facility, park and ride facility, two parks, and a 9-hole golf course. The municipal golf course and regional park are described as "tentative plans" in the EISPN.

Based on our review of the proposed project and concerns expressed during our review of other development projects previously proposed for this site, we suggest that the Draft Environmental Impact Statement (DEIS) contain, at a minimum, a discussion relative to the following subjects in addition to those already identified in the EISPN.

1. The EISPN does not address the interrelationship of Maloia Estates' infrastructure development with the adjoining Waikale residential community. The DEIS should contain a proposed development or phasing schedule for infrastructure development as compared to infrastructure improvements planned for Waikale. If construction of the Waikale project is delayed, the DEIS should also propose appropriate mitigative measures which could be implemented by the City to alleviate the infrastructural interdependence of the two projects.
2. The DEIS should describe the total number of dwelling units, dwelling unit type, dwelling unit pricing, size of recreational/open space, and final configuration of proposed land use elements. Inasmuch as the DEIS findings will be derived from a proposed development plan, the Petitioner should commit to implementation of the plan as presented in the EIS.

Mr. Scarfone
Page 2
January 23, 1989

3. The DEIS section on financial capability should contain a discussion on the Petitioner's commitment to provide affordable "for-sale" housing as it relates to the City's overall housing policy. The City Council's position on the subject project should also be clarified in the DEIS.
4. The DEIS should discuss whether sound attenuating mitigation measures along Kamehameha Highway will be necessary.
5. The DEIS should discuss whether the project will utilize brackish or reused water as previously suggested and also identify the proposed potable and possible non-potable water source for the project. The impacts to groundwater resulting from urban development relative to (a) the Pearl Harbor Ground Water Control Area (PHGWCA) and (b) the Waipahu wells should be addressed.
6. A traffic impact study should be provided in the DEIS to assess how the current configuration of the project's land uses will impact local and regional transportation facilities.
7. The criteria or weight factors used to develop the Public Services and Facilities rating system should be described in the DEIS.

We appreciate this opportunity to comment.

Sincerely,

Harold S. Masumoto
Director



DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 8TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 933-4437



MICHAEL N. SCARFONE
DIRECTOR
MORIAN K. MARIAGA
DEPUTY DIRECTOR

Mr. Harold S. Masumoto, Director
February 8, 1989
Page 2

February 8, 1989

Mr. Harold S. Masumoto, Director
Office of State Planning
Office of the Governor
State Capitol
Honolulu, Hawaii 96813

Dear Mr. Masumoto:

Subject: Environmental Impact Statement Preparation Notice
Waioala Estates Subdivision

We have received your Agency's comments dated January 23, 1989 on the Waioala Estates EIS Preparation Notice. Please be assured that the comments raised in your letter will be covered to the extent that the data is available. We respond as follows to the specific points raised:

1. A preliminary master plan will be developed by our engineering consultants and the project's relationship with the adjoining Waikole project will be analyzed.
2. The Draft EIS will describe the project to be implemented as accurately as possible; however, market demands may require that we modify the project just as market demands force other public and private developers to modify their projects. The demonstrated interest expressed at the City's West Loch project is one of the indicators to be used in finalizing the unit mix for Waioala Estates.
3. The statements to be made relative to the City's overall housing policy will continue to reflect the pent up demand for housing affordable to all segments of the community. The City Council's position on this project is best left to the Council in its official actions on the proposal.
4. A Noise Impact Study will be provided as an appendix in the Draft EIS.

5. The possible use of non-potable water for irrigation purposes and impacts to groundwater resources will be discussed in the Draft EIS.
 6. A traffic study will be provided in the Draft EIS as an appendix.
 7. We do not plan to use a rating system in the Draft EIS to discuss public services or facilities.
- Thank you for your comments.

Sincerely,

Michael N. Scarfone

MICHAEL N. SCARFONE
Director



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 347
HONOLULU, HAWAII 96831
February 1, 1989

JOHN G. LUTHE, M.D.
DIRECTOR OF HEALTH
FEB 10 1989
DEPT. OF HEALTH
COMM. DEVELOPMENT

MEMORANDUM

To: Mr. Michael N. Scarfone, Director, Department of Housing & Community Development, City & County of Honolulu

From: Deputy Director for Environmental Health

Subject: Environmental Impact Statement Preparation Notice (EISP/N) for Waialea Estates Subdivision Situated in Waipahoehoe, Oahu, TMK 9-4-07, 1

Thank you for allowing us to review and comment on the subject EISP/N. In the preparation of an EIS of the subject project, the following concerns must be addressed:

Wastewater Disposal

1. Wastewater generated from the project must be connected to the Honouliuli WWTP for treatment and disposal.
2. The Honouliuli WWTP may have to be expanded to accommodate the flows from this project.

Drinking Water

The Department of Health has concerns regarding groundwater contamination that may result from an urban subdivision of over 1,000 homes. This is a critical recharge area for the Pearl Harbor aquifer. Several important drinking water wells are located in the Waialea Military Reservation (used as a back-up well for drinking water), and the Oahu Sugar Waipahoehoe Well. The Waipahoehoe Well is known to be contaminated with ethylene dibromide (EDB), either from agricultural use or fuel spills, pointing to the vulnerability of groundwater in this area. Additional contamination may occur due to the application of pesticides for home and garden uses as well as for the maintenance of the proposed golf course and other uses. In addition, the use of brackish water or gray water for irrigation may contaminate these wells. It must be demonstrated that urban development of this area will not pose a threat of contamination to the groundwater.

Any proposed new well(s) will be subject to approval by the Drinking Water Program. The Department of Health is vested with the responsibility to ensure that the public water systems in the State are providing water which is in compliance with the State's drinking water regulations known as Chapter 20, Title 11, Administrative Rules, and are in compliance with all other applicable terms and conditions of Chapter 20.

Mr. Michael N. Scarfone
February 1, 1989
Page 2

Noise

1. Potential noise problems which may arise due to the integration of various land uses within the project location. These include:
 - a. Noise from activities occurring at the proposed golf course and parks, such as grounds maintenance or club activities.
 - b. Noise resulting from activities at the proposed school/playground, such as paging systems, band practices, and athletic events.
 - c. Noise from stationary equipment, such as air conditioning/ventilation units, and exhaust fans.
2. Since most of the residential units/homes will be in close proximity to one another, these units/homes should be designed so as to maximize the containment of noise.
3. Noise from vehicular traffic along Kamehameha Highway, east of the planned site, may result in adverse noise impacts on adjacent residential units/homes.
4. Noise associated with existing agricultural operations from surrounding areas may have a negative impact on the proposed residential development. Disturbances may also occur from heavy vehicles utilized to transport agricultural products.
5. Activities associated with the construction phase must comply with the provisions of Title 11, Administrative Rules Chapter 43, Community Noise Control for Oahu.
 - a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the rules.
 - b. Construction equipment and on-site vehicles 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 rules and conditions issued with the permit.
6. Traffic noise from heavy vehicles travelling to and from the construction site must be minimized near existing residential areas, and must comply with the provisions of Title 11, Administrative Rules Chapter 42, Vehicular Noise Control for Oahu.

Vector Control

All requirements of Title 11, Chapter 26, paragraph 35 (Rodents); demolishing of structure and clearing of sites and vacant lots) must be adhered to.

Prospective residents of the development should be made aware of periodic rodent influx and seasonal problems with the pineapple sourcing beetle.

Bruce S. Anderson
BRUCE S. ANDERSON, Ph.D.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 933-4437



FRANK P. ZAM
DIRECTOR

MICHAEL H. SCARFONE
DIRECTOR
MICHAEL H. SCARFONE
DEPUTY DIRECTOR

February 21, 1989

Bruce S. Anderson, Ph.D.
February 21, 1989
Page 2

4. Vector Control

The general contractor involved in the site preparation will by conditions in the bid documents be responsible for compliance with Title 11, Administrative Rules, Chapter 26, paragraph 35 (Rodents). Your advice on the "pineapple souring beetle" will be referred to the Department's sales staff.

Thank you for your comments.

Sincerely,

MICHAEL H. SCARFONE
Director

Bruce S. Anderson, Ph.D.
Deputy Director for Environmental
Health
Department of Health
P. O. Box 3378
Honolulu, Hawaii 96801

Dear Dr. Anderson:

Subject: Environmental Impact Statement Preparation Notice
Maioa Estates Subdivision

We have received your comments dated February 1, 1989 and respond as follows:

1. Wastewater Disposal

Connections for the treatment and disposal of sewage effluent generated from this project will be approved by the Department of Public Works, Wastewater Management Division and provided to your agency for concurrent approval.

2. Drinking Water

Potable water source development for this project as well as other urban developments in the Pearl Harbor Ground Water Control Area will be reviewed by both the State Department of Health, Department of Land and Natural Resources, and the City Board of Water Supply. All requirements for compliance imposed by these agencies to prevent groundwater contamination will be observed.

3. Noise

A Comprehensive Noise Impact Study will be appended to the Draft EIS to provide your agency with the anticipated noise impacts and proposed mitigation methods to be employed by design. The balance of the noise containment features will be in compliance with Title 11, Administrative Rules Chapter 43, Community Noise Control for Oahu.

FORM 100-1
DEPARTMENT OF LAND



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 411
HONOLULU, HAWAII 96809

WILLIAM W. PATY, COMMISSIONER
DEPARTMENT OF LAND AND NATURAL RESOURCES
HONOLULU, HAWAII 96809

RECEIVED
JAN 27 1989
STATE DEPARTMENT OF LAND AND NATURAL RESOURCES
HONOLULU, HAWAII 96809

FILE NO.: 89-147
DOC. NO.: 8925E

JAN 27 1989

The Honorable Michael N. Scarfone, Director
Department of Housing and Community
Development
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

SUBJECT: EIS Preparation Notice - Waiola Estates Subdivision,
Waipio, Ewa, Oahu
TMK: 9-4-07: 01

Thank you for giving our Department the opportunity to comment on this matter. We have reviewed the materials you submitted and have the following comments.

Our Department's Historic Sites Section indicates that since this parcel has been in pineapple production for years, we do not expect that significant historic sites are still present on the property. The EIS should contain a section stating that there are no known historic sites, or sites listed on the Hawaii or National Register of Historic Places on the property, and that the Historic Sites Section believes that the project will have "no effect" on significant historic sites because any significant historic sites are likely to have been destroyed by pineapple cultivation.

From the Aquatic Resources Division standpoint, there is no objection to the proposal, provided appropriate mitigating measures are addressed in the upcoming EIS to minimize erosion, and prevent the release of chemicals, petroleum products, building materials and other pollutants into Kipapa Gulch/Stream. Kipapa Gulch/Stream merges with Waialele Stream and enters into West Loch of Pearl Harbor where the local pole-and-line aku fishery depends heavily on baitfish taken from Pearl Harbor.

Honorable Michael N. Scarfone - 2 - DOC. NO.: 5025E

Please feel free to call me or Roy Schaefer of our Office of Conservation and Environmental Affairs, at 548-7837, if you have any questions.

Very truly yours,

William W. Paty
WILLIAM W. PATY

FEB 3 1989

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

890 SOUTH KING STREET, 8TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 533-4427



FRANK F. ZIM
MAYOR

MICHAEL N. SCARFONE
DIRECTOR
MEARIE KAMALEA
DEPUTY DIRECTOR

February 21, 1989

Mr. William W. Paty, Chairperson
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

Subject: Environmental Impact Statement Preparation Notice
Waiala Estates Subdivision

We have received your comments dated January 27, 1989. We have reviewed your comments and respond as follows:

1. The Historic Sites section in the draft EIS will incorporate your comments including your statement that the Historic Sites Section believes that the project will have "no effect" on significant historic sites because any significant historic sites are likely to have been destroyed by pineapple cultivation.
2. There will be a section describing the surface runoff and impacts that could accrue as the result of urbanization of this site. Engineering design in conformance with applicable City and County standards will be provided to mitigate those potential impacts.

Thank you for your comments.

Sincerely,

MICHAEL N. SCARFONE
Director

JOHN WAIHEE
GOVERNOR



YUKIO KITAGAWA
CHAIRPERSON, BOARD OF AGRICULTURE
SUZANNE D. PETERSON
DEPUTY TO THE CHAIRPERSON

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 So. King Street
Honolulu, Hawaii 96814-2512

Mailing Address:
P. O. Box 22159
Honolulu, Hawaii 96822-0159

January 19, 1989

RECEIVED
DEPT. OF AGRICULTURE
JAN 23 10 00 AM '89

Mr. Michael N. Scarfone, Director
Department of Housing and Community Development
City and County of Honolulu
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Environmental Impact Statement Preparation Notice
(EISPNI) for Proposed Waioala Estates Subdivision
THK: 9-4-07: 1 Waipio, Oahu
Area: 269.454 acres

The Department of Agriculture has reviewed the subject
EISPNI and offers the following comments.

According to the EISPNI, your Department is seeking to
develop a residential subdivision with approximately 1,345
dwelling units and appurtenant infrastructure and facilities.
The proposed project area involves the same site as that
proposed for similar developments in 1986 and 1988. Therefore,
the concerns expressed in our comments to the earlier EISPNI
remain applicable to the subject EISPNI.

The Draft EIS should include discussion of the following
issues:

- A complete soils description with references to the
Agricultural Lands of Importance to the State of
Hawaii (ALISH) system, Land Study Bureau Overall
Productivity Rating system, and the Soil Conservation
Service Soil Survey which indicate the suitability of
agricultural use on the site;

- The full impact on the economic viability of Dole
Wahilawa Plantation resulting from the cessation of
pineapple production on affected fields. This would
include the loss in tons of pineapples per acre, lost



Mr. Michael N. Scarfone
January 20, 1989
Page -2-

revenues, location and cost of replacement field
preparation (if any), and any other indicators of
adverse impact;

- The impact of this development on future agricultural
production requirements and expansion of diversified
agriculture, as identified in the Final Report of the
Land Evaluation and Site Assessment (LESA) Commission
(February 1986);

- The relationship of the proposed project to the
findings of the "Castle and Cooke Hierarchy of
Agricultural Lands Study--Central Oahu Lands" study,
dated March, 1984;

- The potential of establishing viable alternative
agricultural uses on the project site;

- The relationship of the proposal to existing and
proposed urban development in the Central Oahu and Eva
Development Plan areas;

- The impact on agriculture resulting from the
withdrawal of water for the project's domestic
consumption from the Pearl Harbor Groundwater Control
Area;

- The impact the project of Chapter 165 of the Hawaii
Revised Statutes, which limits the circumstances under
which existing farming operations may be deemed a
nuisance;

- The broader economic and resource impact on the State
from the irrevocable loss of prime agricultural lands;

- Conformity to the State Agriculture Functional Plan
and its objectives and policies, particularly,
Implementing Action B(5)(c); and

- The relationship of the project to the following
Hawaii State Plan objectives, policies and priority
guidelines:

226-7(b)(6) "Assure the availability of agriculturally
suitable lands with adequate water to accommodate
present and future needs."

Mr. Michael N. Scarfone
January 20, 1989
Page -3-

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
180 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE 923-4487



MICHAEL N. SCARFONE
DIRECTOR
HONOLULU, HAWAII
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

226-103(c)(1) "Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries."

226-103(d)(1) "Identify, conserve and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands."

226-104(b)(2) "Make available marginal or non-essential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district."

Thank you for the opportunity to comment. We will provide further comment upon our receipt and review of the Draft Environmental Impact Statement.

Sincerely,

Yukio Kitagawa
YUKIO KITAGAWA
Chairperson, Board of Agriculture

cc: DGP
OSP (Attn: LUD)
LUC
OEQC

February 2, 1989

Mr. Yukio Kitagawa, Chairperson
Department of Agriculture
State of Hawaii
1428 South King Street
Honolulu, Hawaii 96814-2512

Dear Mr. Kitagawa:

Subject: Environmental Impact Statement Preparation Notice
Waioala Estates Subdivision

We have received your Agency's comments dated January 19, 1989 which, as you indicated, do not differ from your comments in 1986. Your comments will be addressed in the Draft EIS. Thank you for your assistance.

Sincerely,

Michael N. Scarfone

MICHAEL N. SCARFONE
Director

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
 110 SOUTH KING STREET, 5TH FLOOR
 HONOLULU, HAWAII 96813
 PHONE: 533 4437



MICHAEL N. SCARFONE
 DIRECTOR
 MITSUO SHITO
 DEPUTY DIRECTOR

FAKATY FAN
 12/18/88

ENCLOSURE

RE: NEW YORK

TO:



STATE OF HAWAII
 DEPARTMENT OF HUMAN SERVICES
HAWAII HOUSING AUTHORITY
 P. O. BOX 17907
 HONOLULU, HAWAII 96817

89:PLNG/6A

January 4, 1989

Mr. Michael N. Scarfone, Director
 Department of Housing and
 Community Development
 650 South King Street, 5th Floor
 Honolulu, Hawaii 96813

Subject: Chapter 343, Hawaii Revised Statutes
 Environmental Impact Statement Preparation Notice
 Proposed Waiola Estates Subdivision
 Situated in Waipio, Oahu

Dear Mr. Scarfone:

This responds to your letter of December 23, 1988, regarding
 the proposed Waiola Estate Subdivision.

The Hawaii Housing Authority would like to comment on the project
 and be consulted during your preparation of the Environmental Impact
 Statement.

Thank you.

Sincerely,

Mitsuo Shito
 Mitsuo Shito
 Executive Director
 Hawaii Housing Authority

dta

February 2, 1989

Mr. Mitsuo Shito, Executive Director
 Hawaii Housing Authority
 State of Hawaii
 P. O. Box 17907
 Honolulu, Hawaii 96817

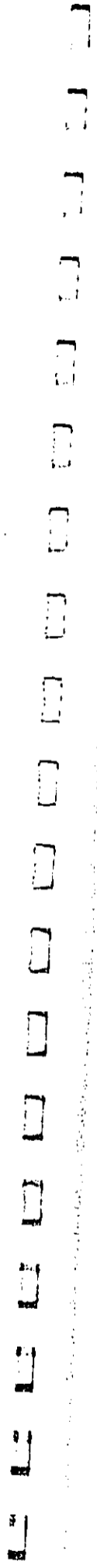
Dear Mr. Shito:

Subject: Environmental Impact Statement Preparation Notice
 Waiola Estates Subdivision

We have received your Agency's request dated January 4, 1989 to
 be a consulted party for this EIS. We look forward to your
 review of the Draft EIS and thank you for your interest.

Sincerely,

Michael N. Scarfone
 MICHAEL N. SCARFONE
 Director



DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
 650 SOUTH KING STREET, 5TH FLOOR
 HONOLULU, HAWAII 96813
 PHONE 933-4427



MICHAEL N. SCARFONE
 DIRECTOR
 MURAM E. SAWARA
 DEPUTY DIRECTOR

February 8, 1989

Mr. Joseph J. Conant, Executive Director
 Housing Finance and Development Corporation
 P. O. Box 29360
 Honolulu, Hawaii 96820-1760

Dear Mr. Conant:

Subject: Environmental Impact Statement Preparation Notice
 Waiola Estates Subdivision

We acknowledge your Agency's request to be a consulted party.
 Thank you for your interest.

Sincerely,

 MICHAEL N. SCARFONE
 Director



STATE OF HAWAII
 DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT
 HOUSING FINANCE AND DEVELOPMENT CORPORATION
 P. O. BOX 29360
 HONOLULU, HAWAII 96820-1760

January 24, 1989

Mr. Michael N. Scarfone, Director
 Department of Housing and
 Community Development
 650 South King Street, 5th floor
 Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Re: Environmental Impact Statement Preparation Notice for the
 Proposed Waiola Estates Subdivision

Thank you for sending us a copy of the subject report.
 We apologize for the late response, and would appreciate
 having the opportunity to provide comments on the project
 during the preparation of the EIS.

Sincerely,

 JOSEPH J. CONANT
 Executive Director

89 JAN 27 12:00
 DEPT OF BUS & ECON DEV
 & COMM DEVELOPMENT

JOSEPH E. CONANT
 EXECUTIVE DIRECTOR

FRANK F. PALM
 SALES

W. RENT MEYER

TO:

89:PLNG/275B JT

STATE OF HAWAII
DEPARTMENT OF BUSINESS
AND ECONOMIC DEVELOPMENT



LAND USE COMMISSION

Room 106, 818 Federal Building, 318 Merchant Street
Honolulu, Hawaii 96813 Telephone: 548-4411

JOHN BUNCE
Governor
REYNOLD L. KIP
Chairman
LAURENCE F. DUH
Vice Chairman

COMMISSION MEMBERS:

James S. Wilson
Freddie Phil Tealio
Allen Kajima
Robert Tange
Frederic P. Wittmann
Tom Szalai
Allen E. Ng

LESTER UEDA
Executive Officer

December 27, 1988

Mr. Michael N. Scarfone, Director
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: EIS Preparation Notice - Proposed Waiola Estates
Subdivision, Waipio, Oahu

This is to acknowledge receipt of the subject EIS
Preparation Notice.

Please include the Land Use Commission in your list of
consulting parties.

Sincerely,

Esther Ueda
ESTHER UEDA
Executive Officer

EU:to

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE 523-4427



FRANK F. YAM
Mayor

MICHAEL N. SCARFONE
DIRECTOR
HELENE KAMARA
DEPUTY DIRECTOR

February 2, 1989

Mrs. Esther Ueda, Executive Officer
State Land Use Commission
Old Federal Building, Room 104
335 Merchant Street
Honolulu, Hawaii 96813

Dear Mrs. Ueda:

Subject: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

We have received your Office's request dated December 27, 1988
to be a consulted party for this EIS. Thank you for your
continuing interest.

Sincerely,

Michael N. Scarfone
MICHAEL N. SCARFONE
Director

RECEIVED
DEPT. OF HOUSING
& COMM. DEVELOPMENT
JAN 3 1989





University of Hawaii at Manoa

Environmental Center
Crawford 317 • 2150 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7361

RECEIVED
COMMUNITY DEVELOPMENT
JAN 10 1987
PN:0067

Mr. Michael N. Scarfone, Director
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Preparation Notice
Environmental Impact Statement
Waiola Estates Subdivision
Waipio, Oahu

Thank you for your letter of December 23rd apprising us of the above referenced action. Ordinarily, we reserve our comments for the Draft stage of the public review process under Chapter 343, HRS. Since the proposed project is substantially similar to one previously considered, we direct your attention to our letter of September 8, 1986, to Mr. John Whalen in which we provided comments germane to the present project.

We appreciate the opportunity to provide comments at this time, and we look forward to reviewing the Draft EIS when it is published.

Sincerely,

John T. Harrison
Environmental Coordinator

cc: OEQC
L. Stephen Lau
Steven Armann

Unit of Water Resources Research Center

AN EQUAL OPPORTUNITY EMPLOYER



University of Hawaii at Manoa

Environmental Center
Crawford 317 • 2150 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7361

September 8, 1986
RE:0441

Mr. John P. Whalen, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Draft Environmental Impact Statement
Waiola Estates Subdivision
Waipio, Ewa, O'ahu

The Environmental Center has reviewed the Draft EIS for the proposed Waiola Estates Subdivision with the assistance of Paul Ekern, Soils and Agronomy; Yu-Si Fok, Civil Engineering; Peter Flachsbarth, Urban and Regional Planning; and Scott Derrickson, Environmental Center.

Hydrological Characteristics

The section on drainage (p. V-6) states "the project site is naturally well drained and should not be susceptible to flooding" is inconsistent with the section on flooding (p. V-6) where the reader is told "most of the development will occur in a designated zone D, an area of undetermined, but possible flooding. Disposal of drainage water may well be a problem worth more detailed discussion in the Final EIS. Milliani Town has experienced severe problems in the past due to poor design of a storm drainage system. The Final EIS should discuss what will be done with storm runoff and surface drainage due to occasional heavy seasonal rainfall and include a map locating the runoff patterns and drains. Careful design needs to be carried out to insure that problems of downstream flooding, such as occurred in Milliani Town, are not repeated.

Indirect Air Quality Impact of Increased Traffic

The statements on pages VII-18 and VII-19 give the impression that the air pollution from increased motor vehicle traffic will not be a problem due to replacement of the vehicle fleet with newer cars that meet more stringent Federal emission standards. While the statement is true, the discussion on these two pages omits the major findings provided by the consultant, Mr. Barry Root, in Appendix F. Mr. Root projected that the worst case carbon monoxide levels would exceed State of Hawaii ambient air quality standards off-site along H-1 with or without the proposed

AN EQUAL OPPORTUNITY EMPLOYER

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 8TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 813-4457



MICHAEL N. SCARFONE
DIRECTOR
MURAM K. HARRIS
DEPUTY DIRECTOR

Mr. John P. Whalen -2- September 8, 1986

project, and that standards would be met along the feeder road to and from the project only if highway improvements occur. The text of the EIS and Appendix P should be consistent, and the text should mention the mitigative measures recommended by Mr. Root.

Mr. Root used a 1981 model (MOBILE2) to project emissions from motor vehicles. Currently, EPA recommends that consultants use a newer model (MOBILE3), which has been available since 1985. The newer model is more accurate, because it accounts for the fact that many motorists contaminate their catalytic converters with leaded gasoline or have the converters removed from their cars. Thus, the MOBILE2 model underpredicts air pollutant concentrations.

Water Supply and Development

The subject of water availability and supply are not covered in any detail within this EIS. Further studies seem warranted regarding the ability of the proposed Waiala wells to provide sufficient water for the development, the possible draw down problems, and whether the withdrawal of water will exceed the "sustainable yield" of the Pearl Harbor Aquifer. If any such studies have been or will be undertaken they should be provided in the final EIS along with a detailed discussion of the proposed water supply system for the subdivision.

Alternatives Considered

There is no discussion of alternative sites for the proposed development. Since the land presently proposed is considered "important Agricultural Lands", and several other significant concerns have been raised during the review process including traffic congestion and water supply issues, it would seem necessary to include a discussion of alternative sites.

We appreciate the opportunity to offer comments on this document.

Yours truly,
Jaquelin N. Miller
Jaquelin N. Miller
Acting Associate Director

cc: Patrick Takahashi
OECC
Howard Murai
Peter Flachsbart
Paul Ekern
Yi-Si Fok
Scott Darrickson

February 2, 1989

Mr. John T. Harrison
Environmental Center
University of Hawaii
2550 Campus Road
Honolulu, Hawaii 96822

Dear Mr. Harrison:

Subject: Environmental Impact Statement Preparation Notice
Waiala Estates Subdivision

We have received your comments dated January 3, 1989. Your comments of 1986 will be reviewed again and we will respond to the best of our ability in the Draft EIS currently under preparation.

Thank you for your comments.

Sincerely,

Michael N. Scarfone

MICHAEL N. SCARFONE
Director

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
 430 SOUTH KING STREET, 21ST FLOOR
 HONOLULU, HAWAII 96813
 PHONE 533-4437



MICHAEL N. SCARFONE
 DIRECTOR
 FRANK E. RAMAGE
 DEPUTY DIRECTOR

February 2, 1989

RUSSEL S. HAGATA
 CHIEF CLERK
 DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT
 LETTER NO. (P)2110.8

1989 JUN 4 10:07 AM



STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 DIVISION OF PUBLIC WORKS
 P. O. BOX 112, HONOLULU, HAWAII 96810

Mr. Mike Moon, Director
 Department of Housing and
 Community Development
 City and County of Honolulu
 Honolulu, Hawaii

Dear Mr. Moon:

Subject: EIS Preparation Notice
 Waioia Estates Subdivision
 Waipio, Oahu, Hawaii

In response to your December 23, 1988 request for
 comments on the subject EISPN, we provide the following:

1. The land area set aside for the proposed elementary school should be set in accordance with the Department of Education's educational specifications as follows:
 - a. Six acres if the site is adjacent to a County park which has a joint-use agreement with the DOE to meet the school's playground requirements.
 - b. Eight acres if the site is not adjacent to a park.
2. The ideal shape of the school site should be rectangular with a length/width ratio of 1.5:1.0.

Thank you for the opportunity to comment on the subject EISPN. If there are any questions on this matter, please have your staff contact Mr. Stephen Miwa of the Planning Branch at 548-3921.

Very truly yours,

 TEUANE TOMINAGA
 State Public Works Engineer

SM:jnt
 cc: Mr. Charles Toguchi

Mr. Teuane Tominaaga
 Department of Accounting and
 General Services
 Division of Public Works
 P. O. Box 119
 Honolulu, Hawaii 96810

Dear Mr. Tominaaga:

Subject: Environmental Impact Statement Preparation Notice
 Waioia Estates Subdivision

We have received your Agency's comments dated January 3, 1989. Your specific references to school site requirements will be referred to our consultants for coordination with the Department of Education Facilities Branch. Please be assured that all technical code standards and requirements will be observed. Thank you for your assistance.

Sincerely,

 MICHAEL N. SCARFONE
 Director

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



FRANK P. FARM
DIRECTOR

DONALD A. CLEGG
CHIEF PLANNING OFFICER
GENE CONNELL
DEPUTY CHIEF PLANNING OFFICER

January 4, 1989

RH/DGP 12/88-5262

89 JAN -6 AM 124
DEPT. OF HOUSING AND COMM. DEVELOPMENT

MEMORANDUM

TO: MICHAEL N. SCARFONE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: DONALD A. CLEGG, CHIEF PLANNING OFFICER
DEPARTMENT OF GENERAL PLANNING

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES
ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
PROPOSED WAIOLA ESTATES SUBDIVISION SITUATED IN
MAIPIO, OAHU

Please add Department of General Planning to the list of parties to be consulted during the preparation of the subject EIS.

DAC:tt

Donald A. Clegg
DONALD A. CLEGG
Chief Planning Officer

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
830 SOUTH KING STREET, 15TH FLOOR
HONOLULU HAWAII 96813
PHONE: 533-4437



FRANK P. FARM
DIRECTOR

MICHAEL N. SCARFONE
DIRECTOR
WENDY E. KAWAHA
DEPUTY DIRECTOR

February 2, 1989

MEMORANDUM

TO: Donald A. Clegg, Chief Planning Officer
Department of General Planning

FROM: Michael N. Scarfone

SUBJECT: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

We have received your request dated January 4, 1989 to be a consulted party during the preparation of the subject EIS. Thank you for your continuing interest.

Michael N. Scarfone
MICHAEL N. SCARFONE
Director

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING
430 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANKIE FARM
DATE:

JOSEPH M. MAGALDI, JR.
ACTING DIRECTOR

TE-8298
PL1.1397

DEPT. OF HOUSING AND
COMM. DEVELOPMENT

January 27, 1989

89 JAN 30 AM 11:48

MEMORANDUM

TO: MICHAEL N. SCARFONE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: JOSEPH M. MAGALDI, JR., ACTING DIRECTOR

SUBJECT: WAIOLA ESTATES SUBDIVISION
ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
TMK: 9-4-07: 1

This is in response to your memorandum dated December 23, 1988 requesting our comments prior to the preparation of the Environmental Impact Statement for the subject project.

As part of the Traffic Impact Study, roadway widths and cross-sections within the proposed development should be determined and specified based on the anticipated number of vehicles being generated by each discrete area or land use. Access to major roadways should be minimized and should occur only at major intersections. Intersections should be placed at locations causing the least disruption to traffic while maintaining maximum sight distance lengths. The need for traffic signals should also be addressed.

JOSEPH M. MAGALDI, JR.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 31st FLOOR
HONOLULU, HAWAII 96813
PHONE: 922-6037



FRANKIE FARM
DATE:

MICHAEL N. SCARFONE
DIRECTOR
MIRIAM KAMATA
DEPUTY DIRECTOR

February 8, 1989

MEMORANDUM

TO: Joseph M. Magaldi, Jr., Acting Director
Department of Transportation Services

FROM: Michael N. Scarfone

SUBJECT: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

We have received your Department's comments dated January 27, 1989 and will provide them to the traffic and engineering consultants. Thank you for your comments.

MICHAEL N. SCARFONE
Director

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU

830 SOUTH KING STREET, 5TH FLOOR
HONOLULU HAWAII 96813
PHONE 533-4437

HONOLULU MUNICIPAL BUILDING
430 SOUTH KING STREET
HONOLULU HAWAII 96813



MICHAEL N. SCARFONE
DIRECTOR
HERBERT K. MURAKA
SUPERINTENDENT

FRANK P. FARR
DIRECTOR

HERBERT K. MURAKA
DIRECTOR AND BUILDING SUPERINTENDENT

PB 89-57

February 2, 1989

January 20, 1989

89 JAN 23 12:56
RECEIVED
COMM. DEVELOPMENT

MEMORANDUM

MEMO TO: MR. MICHAEL N. SCARFONE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: HERBERT K. MURAKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
PROPOSED WAIOLA ESTATES SUBDIVISION
HAIPIO, OAHU

TO: Herbert K. Muraka, Director and Building
Superintendent
Building Department

FROM: Michael N. Scarfone

SUBJECT: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

We have reviewed the Environmental Impact Statement
Preparation Notice for the proposed Waiola Estates Subdivision
and have no comment.

We have received your Department's comments dated January 20,
1989 on the proposed project noting No Comment.

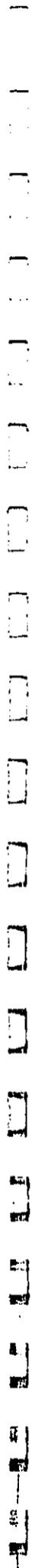
Thank you for the opportunity to review the preparation
notice.

Thank you.

Herbert K. Muraka
HERBERT K. MURAKA
Director and Building Superintendent

Michael N. Scarfone
MICHAEL N. SCARFONE
Director

cc: J. Harada



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



FRANK F. YAM
DIRECTOR

January 19, 1989

MEMORANDUM

TO: MIKE SCARFONE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE (EISP)
WAIOLA ESTATE SUBDIVISION (TK: 2-4-7: 1)

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

1. A drainage report and drainage master plan should be submitted to the Drainage Section, Division of Engineering, for review and approval.
2. The project description indicates that the proposed project "will conform in large part with all standard subdivision requirements," (page 2). Can the proposed deviations be identified at this time?
3. Our new sewer allocation policy requires that after the approval of sewer adequacy for the proposed project has been granted, the final construction plans have to be completed and approved by the City within two (2) years and that construction shall commence within a year thereafter. If the project fails to meet its schedule, then the wastewater commitment will be withdrawn.
4. For your information, the City has applied for a waiver from secondary treatment requirements for Honolulu WTP which is scheduled to be issued this year. This discharge waiver sets standards for effluent quality as well as maximum flow limits during the five-year life of the permit. Should these limits be surpassed, we may have to disallow sewer connections in order to avoid permit violations and possible loss of the waiver.

Sam Callejo
SAM CALLEJO
Director and Chief Engineer

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
150 SOUTH KING STREET, 21ST FLOOR
HONOLULU HAWAII 96813
PHONE: 533-4437



FRANK F. YAM
DIRECTOR

February 2, 1989

MEMORANDUM

TO: Sam Callejo, Director and Chief Engineer
Department of Public Works

FROM: Michael N. Scarfone

SUBJECT: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

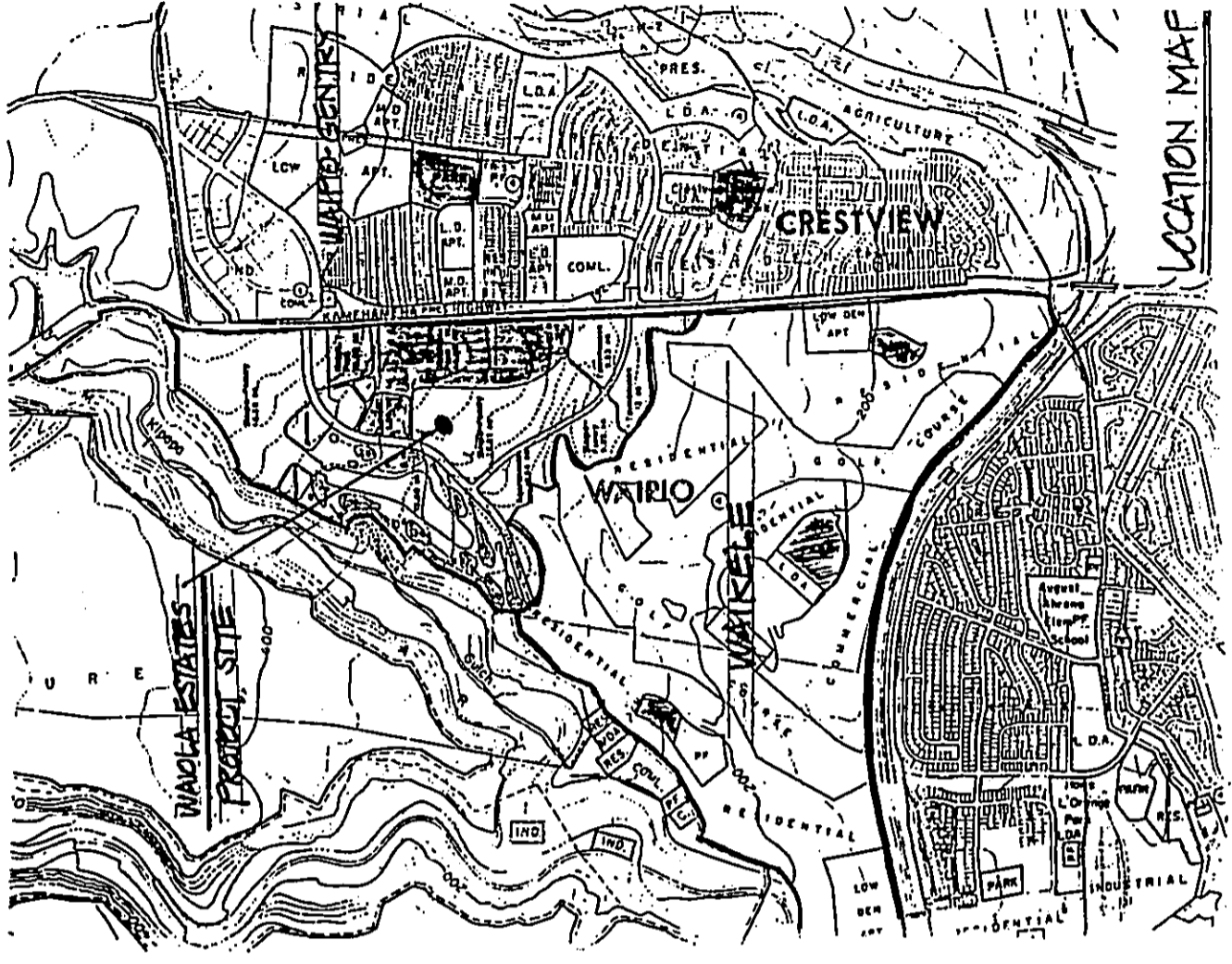
We have received your Department's comments dated January 19, 1989 and will provide them to our civil engineering consultant. Unfortunately, we will not be able to identify all the proposed deviations from subdivision standards until a detailed subdivision plan is prepared. Please be assured that we will, in our scheduling, observe the sewer allocation policy. Finally, our plan is to meet with your wastewater staff to insure that all connections to the Honouliuli Treatment Plant will be in accordance with your operating requirements.

Thank you for your comments.

Michael N. Scarfone
MICHAEL N. SCARFONE
Director

RECEIVED AS FOLLOWS

EXISTING PARKS
PROPOSED PARKS



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



January 24, 1989

WALTER M. OZAWA
DIRECTOR

'89 JUN 25 P3:40
DEPT. OF PARKS AND RECREATION
& COMM. DEVELOPMENT

TO: MIKE M. SCARFONE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: WALTER M. OZAWA, DIRECTOR

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE (EISPN)
WAIOLA ESTATES DEVELOPMENT - WAIPIIO
TAX MAP KEY 9-4-07: 1

We have reviewed the EISPN for the proposed Waiola Estates subdivision and make the following comments.

The 45-acre, nine-hole golf course, 10-acre neighborhood park and the 44-acre district park amply provide for the proposed residential development of 1,345 units and district and regional recreational needs.

Walter M. Ozawa
WALTER M. OZAWA, Director

WMO:ei
Attach.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET, 37TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 533-4437



FRANK F. JAR
DIRECTOR

MICHAEL N. SCARFONE
DIRECTOR
DEPUTY DIRECTOR

February 8, 1989

MEMORANDUM

TO: Walter M. Ozawa, Director
Department of Parks and Recreation

FROM: Michael N. Scarfone

SUBJECT: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

We have received your Department's comments dated January 24, 1989 and acknowledge your determination of adequacy regarding district park development for our project and regional recreational needs.

Thank you for your comments.

MICHAEL N. SCARFONE
Director

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
830 SOUTH BERETAMA STREET
HONOLULU, HAWAII 96813



FRANK F. FAS, Mayor
DORNA B. GOIN, Chairman
JOYCE ISON, Vice Chairman
SISTER E. DAVID, AHOMOKI, O.S.F.
EDWARD Y. HEKIA
SAM CALLEJO
ERNESTA WHITAN
MARGUERITE YALAGATO
KAZU HAYASHIDA
Manager and Chief Engineer

January 11, 1989

TO: MICHAEL N. SCARFONE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER *KH*
BOARD OF WATER SUPPLY

SUBJECT: YOUR MEMORANDUM OF DECEMBER 23, 1988 ON THE
ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE FOR PROPOSED WAIOLA ESTATES SUBDIVISION,
WAIPIO, OAHU

Thank you for allowing us to review the EIS Preparation Notice.

The proposed development will require the following:

1. The submission of a water master plan for both the on-site and off-site water system improvements for our review and approval.
2. If new wells cannot be developed for the subdivision, your department should discuss with us the possibility of participating in the development of the sources which we are currently undertaking.

We request that we be consulted during the preparation of the EIS.

If you have any questions, please contact Lawrence Whang at 527-6138.

89 JAN 19 AM 10:04
CITY AND COUNTY OF HONOLULU
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
830 SOUTH BERETAMA STREET, 8TH FLOOR
HONOLULU, HAWAII 96813
PHONE 522-4437



FRANK F. FAS
MAYOR

February 2, 1989

MEMORANDUM

TO: Kazu Hayashida, Manager and Chief Engineer
Board of Water Supply

FROM: Michael N. Scarfone

SUBJECT: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

We have received your Agency's comments dated January 11, 1989. Your office will be included as a consulted party during the review of the Draft EIS.

Your comments will be provided to our civil engineering consultants.

Thank you for your comments.

Michael N. Scarfone

MICHAEL N. SCARFONE
Director

**FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU**
1433 S. BERKELEY STREET ROOM 303
HONOLULU HAWAII 96813



FRANK P. FAR
DIRECTOR

FRANK K. KAHOOHANOHO
DIRECTOR
LIQUOR & GAMING
REGULATORY DIVISION

FRANK P. FAR
DIRECTOR

**DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU**
680 SOUTH KING STREET 5TH FLOOR
HONOLULU HAWAII 96813
PHONE: 833-4437



MICHAEL N. SCARFONE
DIRECTOR
FRANK K. KAHOOHANOHO
DEPUTY DIRECTOR

January 20, 1989

February 2, 1989

89 JAN 24 11:22
DEPT. OF HOUSING & COMM. DEVELOPMENT

**TO: MICHAEL N. SCARFONE, DIRECTOR
DEPARTMENT OF HOUSING & COMMUNITY DEVELOPMENT**

FROM: FRANK K. KAHOOHANOHO, FIRE CHIEF

**SUBJECT: EIS PREPARATION NOTICE (EISPN)--PROPOSED WAIOLA ESTATES
SUBDIVISION SITUATED IN MAIPIO, OAHU**

MEMORANDUM

**TO: Frank K. Kahooahano, Fire Chief
Fire Department**

FROM: Michael N. Scarfone

**SUBJECT: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision**

We have reviewed the EISPN information for the subject proposal and have no objections to the project.

Fire protection for the proposed project would be provided by engine companies from Pearl City and Milliani Stations and a ladder company from Waiolu Fire Station. A new fire station housing an engine and a ladder company are planned for the Waialeale area pending that project's timetable.

Fire protection service and facilities planned and now provided are considered adequate as indicated in the rating schedule on page 7 of the EISPN.

Should you have any questions, please contact Battalion Chief Kenneth Word of our Administrative Services Bureau at local 3838.

KAM:ny

Frank K. Kahooahano
FRANK K. KAHOOHANOHO
Fire Chief

Thank you for your comments dated January 20, 1989 on the subject proposal. Your comments will be included in the Draft EIS.

Thank you for your assistance.

Michael N. Scarfone
MICHAEL N. SCARFONE
Director

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

1435 SOUTH BERTANHA STREET
HONOLULU, HAWAII 96814 - AREA CODE (808) 534-3111



FRANK FAN
MAYOR

OUR REFERENCE SS-LX

January 9, 1989

TO: MICHAEL N. SCARFONE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: DOUGLAS G. GIBB, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES
ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE (EISPN) FOR THE
PROPOSED WAIOLA ESTATES SUBDIVISION SITUATED IN WAIPIO, OAHU

We have reviewed the EISPN for the above-referenced project and would like to offer the following comments.

During the construction phases of the project, we recommend that adequate safety and environmental health measures be taken to minimize hazardous conditions to passing motorists and nearby residents.

As the Waiola Estates project develops and more people move into the area, we can expect that additional manpower will be needed to accommodate the increased calls for service.

In addition, we can expect that, with added vehicles on the roadways, there will be increased traffic congestion on Kamehameha Highway and Interstate H-1 and H-2. It is hoped that the widening of Kamehameha Highway and the new interchanges planned and under construction will help to ease the flow of traffic.

According to the project plans, a park-and-ride facility will be included in the development. We recommend that further study be conducted to develop incentives for motivating residents to use this and other park-and-ride facilities being developed on the island.

Thank you for the opportunity to offer comments.

DOUGLAS G. GIBB
Chief of Police
By *Ronald Souza*
RONALD SOUZA
Assistant Chief of Police
Support Services Bureau

89 JAN 10 P1:40
DEPT. OF HOUSING
& COMM. DEVELOPMENT

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

610 SOUTH KING STREET 2ND FLOOR
HONOLULU, HAWAII 96813
PHONE 533-4427



FRANK FAN
MAYOR

MICHAEL N. SCARFONE
DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

February 2, 1989

MEMORANDUM

TO: Douglas G. Gibb, Chief of Police
Honolulu Police Department

FROM: Michael N. Scarfone

SUBJECT: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

We have received your Office's comments dated January 9, 1989.
Thank you for your comments.

Michael N. Scarfone
MICHAEL N. SCARFONE
Director

OFFICE OF HUMAN RESOURCES
CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING, 6TH FLOOR
650 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 537-5311



FRANK F. JAM
-11100

January 12, 1988

MEMORANDUM

TO: MICHAEL N. SCARFONE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: *Victoria Bunye*
MARIA VICTORIA BUNYE, DIRECTOR
OFFICE OF HUMAN RESOURCES

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION
NOTICE PROPOSED WAIOLA ESTATES SUBDIVISION

The Office of Human Resources has reviewed the above cited document. The project proposes to construct a single and multi-family residential subdivision, with such appurtenant facilities as a forty-four acre park and a four acre combined park-and-ride/child care facility.

Data on the Central Oahu area between Waipahu and Wahiawa indicate that there is an immediate and growing need to expand the inventory of child care. When this project, Millilani Mauka, and the proposed military housing between Millilani and Wheeler Air Force Base are constructed, at least two child care centers serving a total of four hundred (400) children will be required. The City and County of Honolulu has acquired land at Millilani Mauka to construct a child care center serving up to two hundred fifty (250) children. Thus, an additional center at Waiola will be necessary to serve that project as well as overflow from Wahiawa and Millilani.

The Office of Human Resources fully supports the Waiola plan and urges your favorable consideration of it.

MARIA VICTORIA BUNYE
DIRECTOR
OFFICE OF HUMAN RESOURCES

JAN 19 09:27 AM '88
DEPT. OF HOUSING & COMM. DEVELOPMENT

FRANK F. JAM
-11100

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 533-4437



MICHAEL N. SCARFONE
DIRECTOR
OFFICE OF HUMAN RESOURCES

February 2, 1989

MEMORANDUM

TO: Maria Victoria Bunye, Director
Office of Human Resources

FROM: Michael N. Scarfone

SUBJECT: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

We have received your Department's comments dated January 12, 1989. This project has been re-designed to provide a day care site that will meet your Department's concerns. We thank you for identifying the other proposed child care projects which will serve the families of Leeward Oahu.

Thank you for your comments and support.

Michael N. Scarfone

MICHAEL N. SCARFONE
Director

ENV 2-1
JA/G

January 30, 1989



William A. Bonnet
Manager
Environmental Design/Inc.

89 FEB -1 P136
COMMUNICATIONS

Mr. Michael N. Scarfone, Director
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Environmental Impact Statement Preparation Notice
Proposed Waiola Estates Subdivision Situated in Waipio,
Oahu

We have reviewed the subject document and have determined that HECO's 46 KV lines on easements (see Attachment 1) cross the proposed development and will possibly have to be either re-routed or buried. In addition, due to the proximity of the 46 KV lines, the following comments shall be included as part of the final construction drawings:

1. The Contractor is to exercise extreme caution when the excavation and construction crosses or is in close proximity to our lines; he shall maintain 13'-0" clearance for his equipment while working close to and/or under the overhead facilities.
2. The Contractor is to comply with the directions of the State of Hawaii Occupational Safety and Health Law (DOSH).
3. When excavation is adjacent to or under existing structures or facilities, the Contractor is responsible for properly sheeting and bracing the excavation and stabilizing the existing ground to render it safe and secure from possible slides, cave-ins and settlement, and for properly supporting existing structures and facilities with beams, struts or underpinning to fully protect them from damage.
4. Should it become necessary, any work required to relocate HECO facilities shall be done by HECO. The Contractor shall be responsible for all costs and coordination.

An HEI Company

Mr. Michael N. Scarfone, Director
January 30, 1989
Page 2

5. The Contractor shall be liable for any damages to HECO's facilities.
6. The Contractor shall report any damages to HECO's facilities to the HECO Trouble Dispatch at phone 543-7961.

Sincerely,

Attachment

RECEIVED AS FOLLOWS

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

850 SOUTHERND STREET, 5TH FLOOR
HONOLULU HAWAII 96813
PHONE 522-4237



MICHAEL N. SCARFONE
DIRECTOR
MURRAY S. BARBER
DEPUTY DIRECTOR

February 10, 1989

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

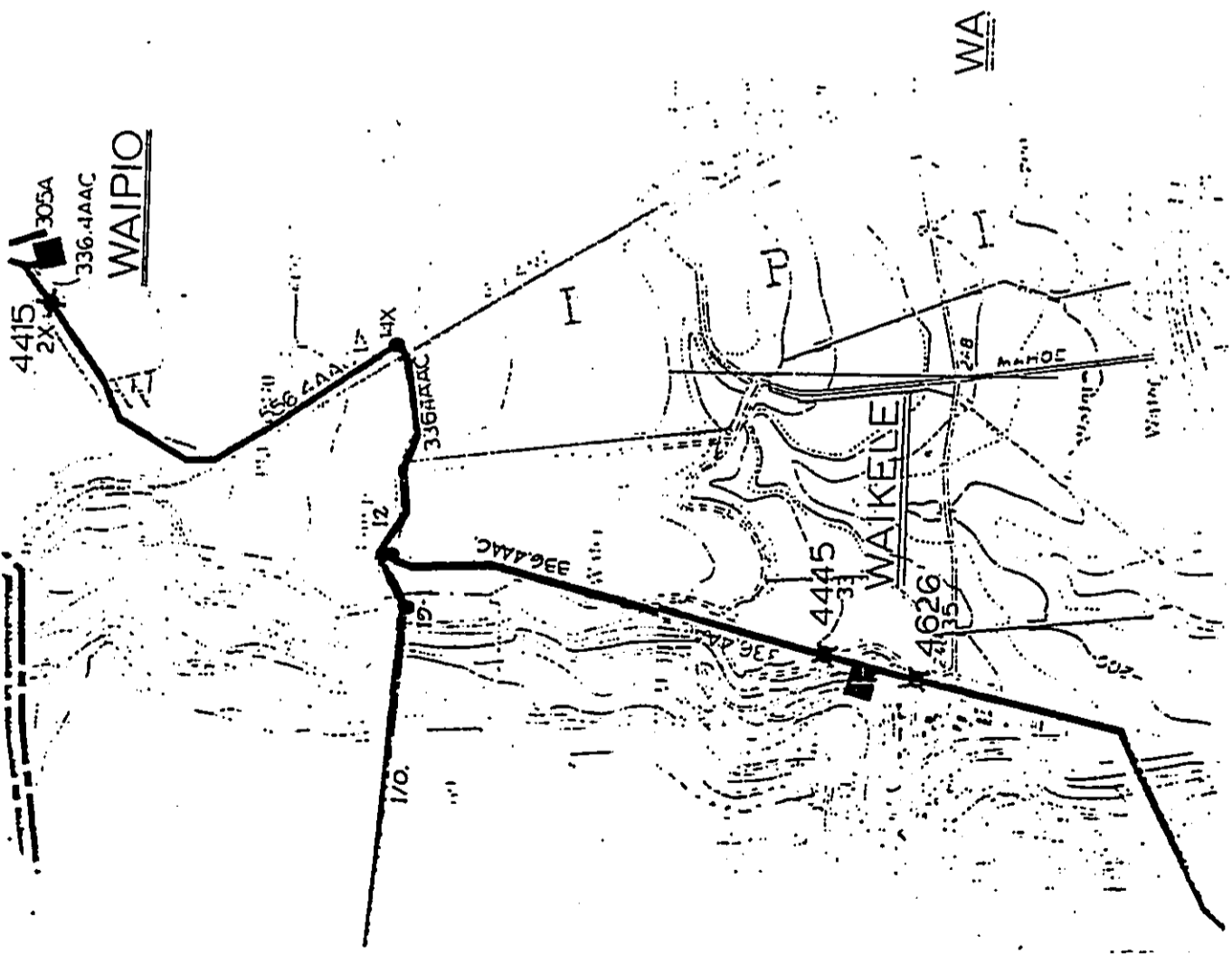
Dear Mr. Bonnet:

Subject: Environmental Impact Statement Preparation Notice
Maioia Estates Subdivision

Thank you for your comments dated January 30, 1989. We will include these comments in the construction drawings as you have suggested.

Sincerely,

Michael N. Scarfone
MICHAEL N. SCARFONE
Director



GTE Hawaiian Tel

20 BY 200
HAWAIIAN TEL
TELEPHONE 486-5454

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
450 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE 833 4417



MICHAEL N. SCARFONE
DIRECTOR
WALTER M. MATSUMOTO
DEPUTY DIRECTOR

FRANK P. FAH
MAILER

January 9, 1989

Mr. Michael N. Scarfone
Director of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Environmental Impact Statement Preparation Notice (EISPN)
for Waiola Estates Subdivision
Waipio, Oahu

We have reviewed the Environmental Impact Statement Preparation Notice for the Waiola Estates Subdivision dated December, 1988 and have no objections to this development project.

We would like to be kept abreast of the progress on this development and be consulted during the infrastructure design phase of the project.

Sincerely,

Walter M. Matsumoto
Oahu Engineering and
Construction Manager

LX/SS/st(0142)

February 2, 1989

Mr. Walter M. Matsumoto
GTE Hawaiian Telephone
P. O. Box 2200
Honolulu, Hawaii 96841

Dear Mr. Matsumoto:

Subject: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

We have received your Company's comments dated January 9, 1989. Your firm will be included as a consulted party during the Draft EIS review process.

Sincerely,

MICHAEL N. SCARFONE
Director

89 JAN 11 P2:16
DEPT OF HOUSING
& COMM DEVELOPMENT



245 North Kukui Street, Honolulu, Hawaii 96817, Telephone (808) 537-5066

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

150 SOUTH KING STREET, 8TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 533-4437



MICHAEL N. SCARFONE
DIRECTOR
MIRIAM KAMATA
DEPUTY DIRECTOR

FRANK F. JAIN
UNIT 8

February 2, 1989

AMERICAN LUNG ASSOCIATION of Hawaii
The Christmas Seal People

January 4, 1989

Mr. Michael N. Scarfone, Director
Department of Housing and Community Development
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: EIS Preparation Notice
Waiola Estates Subdivision

Pursuant to State EIS Rules §11-200-15, we hereby request consulted party status for the subject project and offer the following suggestions for your consideration during preparation of the environmental impact statement.

The proposed action is likely to have a variety of air quality-related impacts which should be addressed in the EIS. These include, but are not limited to, the following:

1. traffic generated by the project which should be cumulatively analyzed;
2. indirect offsite impacts such as electrical generation and solid waste disposal necessary to serve the project;
3. construction related activities, e.g., fugitive dust, vehicle activity, concrete batching, asphalt concrete batching, etc.

All the aforementioned sources of air pollution emissions should be evaluated cumulatively along with other existing and proposed sources in order to assess as accurately as possible the impact of the project on local air quality as well as the impact of local air quality on the project.

Should you have any questions concerning these suggestions and comments, do not hesitate to contact us.

Sincerely yours,
James W. Morrow
James W. Morrow
Director
Environmental Health

JWM:ct
18901

Christmas Seals Fight TB, Asthma, Emphysema, Air Pollution

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

Dear Mr. Morrow:

We have received your agency's comments dated January 4, 1989. These comments will be provided to the Traffic Study and the Air Quality study preparers for their use. These studies will be included in the Draft EIS currently under preparation.

Thank you for your comments.

Sincerely,

Michael N. Scarfone

MICHAEL N. SCARFONE
Director



"REPRESENTING ALL THE PEOPLE OF WAIPAHU"

Waipahu Community Association

HONOLULU FEDERAL SAVINGS AND LOAN BUILDING
94-229 WAIPAHU DEPOT STREET
WAIPAHU, HAWAII 96797

TELEPHONE 677-4550

FRANK P. TAN
14108A

'89 JAN 19 P1:14
DEPT. OF HOUSING,
& COMM. DEVELOPMENT

January 12, 1989

Mr. Michael N. Scarfone
Director
Department of Housing and
Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

SUBJECT: Proposed Waiola Estates Project

We accept your invitation to comment on this project and to be consulted with during the preparation of the EIS.

Please have your staff keep us informed on the status of the project and the timing of events to complete the EIS.

Sincerely,

Clarence K. Nishihara
Clarence K. Nishihara
President

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT CITY AND COUNTY OF HONOLULU

830 SOUTH KING STREET, 8TH FLOOR
HONOLULU, HAWAII 96813
PHONE 522-4427



MICHAEL N. SCARFONE
DIRECTOR
MICHAEL N. SCARFONE
DEPUTY DIRECTOR

February 2, 1989

Mr. Clarence K. Nishihara, President
Waipahu Community Association
Honolulu Federal Savings & Loan Building
94-229 Waipahu Depot Road
Waipahu, Hawaii 96797

Dear Mr. Nishihara:

Subject: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

We have received your Organization's comments dated January 12, 1989. Your organization will be included as a consulted party during the preparation of this EIS.

Sincerely,

Michael N. Scarfone
MICHAEL N. SCARFONE
DIRECTOR



MILILANI/WAIPIO/MELEMANU NEIGHBORHOOD NO. 25
P.O. BOX 3116
MILILANI, HAWAII 96789



January 17, 1989

Nike Moon, Director
Department of Housing and
Community Development
650 S. King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Moon:

On January 2, 1989, I received your letter in regards to the Environmental Impact Statement Preparation Notice for the Proposed Waioala Estates Subdivision. Your deadline for comment is January 23, 1989.

I believe this is a most unacceptable time frame since 1) our Board does not meet until January 25, 1989 and 2) the late receipt of your letter renders any decision making or preview virtually impossible by our Board. This is a most volatile issue in our community. I sincerely request that you extend your deadline for comments from our Board until we have had sufficient time to review this application.

Sincerely,

Linda Fritz McKenzie

Linda Fritz McKenzie
Chair

cc: Neighborhood Commission

'89 JAN 18 P3:26
DEPT. OF HOUSING
& COMM. DEVELOPMENT

FRANK FARI
WAIPIO

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE 832-4427



January 23, 1989

Ms. Linda "Fritz" McKenzie, Chair
Mililani/Waipio/Melemanu Neighborhood
Board No. 25
P. O. Box 3116
Mililani, Hawaii 96789

Dear Ms. McKenzie:

Subject: Waioala EIS Preparation Notice

As you know, the Board is not limited to commenting during the 30-day EIS Preparation Notice comment period. We would like to update the Board at one of its meetings and will send the Board a copy of the Draft EIS when it is available.

Sincerely,

Michael H. Scarfone

MICHAEL H. SCARFONE
Director

cc: Neighborhood Commission

MICHAEL H. SCARFONE
DIRECTOR
MICHAEL H. SCARFONE
DEPUTY DIRECTOR

CENTRY WAIPIO COMMUNITY ASSOCIATION

**DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 922-4427

January 11, 1989

Mr. Michael N. Scarfone
Director
DEPARTMENT OF HOUSING AND
COMMUNITY DEVELOPMENT
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Re: DH&CD Ltr. of 12/23/89

Dear Mr. Scarfone:

Subject: Proposed Waiola Estates Project/EIS

We welcome your invitation to comment on this project and to be consulted during the preparation of the EIS.

Please have your staff keep us apprised on the status of the project and the scheduling of events necessary to complete the EIS.

The point of contact for the Association will be Bob Heffernan our General Manager. He can be reached at the Association's office.

Sincerely,

Paul J. Cathcart
Paul J. Cathcart
President
Board of Directors

94-515 Uke'e Street, No. 15 Waipahu, Hawaii 96797
671-2272

FRANK PAIN
1989



February 2, 1989

Mr. Bob Heffernan
General Manager
Gentry Waipio Community Association
94-515 Uke'e Street, No. 15
Waipahu, Hawaii 96797

Dear Mr. Heffernan:

Subject: Environmental Impact Statement Preparation Notice
Waiola Estates Subdivision

We have received your Organization's request dated January 11, 1989 to be a consulted party. Thank you for your interest.

Sincerely,

Michael N. Scarfone
MICHAEL N. SCARFONE
Director

MICHAEL SCARFONE
DIRECTOR
DEPARTMENT OF HOUSING AND
COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU



CASTLE & COOKE, INC.

P. O. BOX 2990 • HONOLULU, HAWAII 96802-2990
TELEPHONE (808) 544-8611

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

810 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE 533-2427



MICHAEL SCARFONE
DIRECTOR
FRANK JAMARA
DEPUTY DIRECTOR

December 30, 1988

86 JAN -3 P1:21
DEPT. OF HOUSING
& COMM. DEVELOPMENT

February 2, 1989

Mr. Michael N. Scarfone, Director
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Chapter 343, Hawaii Revised Statutes
Environmental Impact Statement Preparation Notice
Proposed Waiala Estates Subdivision, Waipio, Oahu

In response to your letter of December 23, 1988, we wish to be consulted in the preparation of the EIS regarding the subject project.

Very truly yours,

G. Yim
George Yim, President
CASTLE & COOKE LAND COMPANY

Mr. George Yim, President
Castle and Cooke Land Company
P. O. Box 2990
Honolulu, Hawaii 96802-2990

Dear Mr. Yim:

Subject: Environmental Impact Statement Preparation Notice
Waiala Estates Subdivision

We have received your request dated December 30, 1988 to be a consulted party.

Thank you for your continuing interest.

Sincerely,

Michael N. Scarfone

MICHAEL N. SCARFONE
Director

XII. AGENCIES AND ORGANIZATIONS CONSULTED DURING THE DRAFT ENVIRONMENTAL IMPACT STATEMENT PERIOD

Agencies and Organizations

<u>Agency</u>	<u>Date of Comment</u>	<u>Date Comment Received</u>	<u>Date of Response</u>
<u>Federal</u>			
Department of Housing & Urban Development	-----	-----	-----
U.S. Army Corps of Engineers	4/10/89	4/14/89	NRN
U.S. Department of the Interior, Fish & Wildlife Service	3/14/89	3/15/89	4/04/89
U.S. Army Engineering Division, Real Estate Branch	-----	-----	-----
U.S. Department of Agriculture, Soil-Conservation Service	-----	-----	-----
Department of the Navy	4/14/89	4/17/89	4/18/89
<u>State</u>			
Department of Defense	3/22/89	3/23/89	NRN
Department of Education	-----	-----	-----
Department of Business & Economic Development - Energy Division	4/21/89	4/25/89	4/27/89
Office of State Planning, Governor's Office	4/21/89	4/25/89	5/02/89
Department of Health	-----	-----	-----
Department of Land and Natural Resources	4/07/89	4/10/89	4/17/89
Department of Land and Natural Resources, Historic Preservation Office	-----	-----	-----
Office of Environmental Quality Control	-----	-----	-----
*No Response Needed (NRN)			

<u>State</u>	<u>Date of Comment</u>	<u>Date Comment Received</u>	<u>Date of Response</u>
Department of Transportation	3/07/89(EISPN)	3/14/89	4/18/89
Department of Agriculture	4/20/89	4/24/89	4/27/89
Hawaii Housing Authority	-----	-----	-----
Housing Finance & Development Corp.	4/11/89	4/14/89	4/17/89
Land Use Commission	3/13/89	3/15/89	4/04/89
Environmental Center	4/24/89	4/25/89	5/02/89
Department of Accounting & General Services	3/14/89	3/16/89	4/04/89
Office of Hawaiian Affairs	3/28/89	4/05/89	4/11/89
 <u>City</u>			
Department of General Planning	4/25/89	4/26/89	5/01/89
Department of Land Utilization	4/24/89	4/26/89	5/01/89
Department of Transportation Services	-----	-----	-----
Building Department	3/13/89	3/17/89	NRN
Department of Public Works	3/23/89	4/04/89	4/05/89
Department of Parks and Recreation	4/17/89	4/21/89	4/24/89
Board of Water Supply	3/22/89	3/29/89	4/17/89
Fire Department	3/17/89	3/20/89	4/05/89
Honolulu Police Department	3/22/89	3/24/89	4/17/89
Office of Human Resources	-----	-----	-----
Department of Finance	-----	-----	-----
Rene Mansho - City Council	4/24/89	4/24/89	5/01/89

<u>Others</u>	<u>Date of Comment</u>	<u>Date Comment Received</u>	<u>Date of Response</u>
Hawaiian Electric Co.	4/13/89	4/17/89	4/18/89
Hawaiian Telephone Co.	-----	-----	-----
The Gas Company	-----	-----	-----
American Lung Assoc.	4/24/89	4/26/89	5/02/89
Waipahu Community Association	-----	-----	-----
Waipahu Businessmen's Association	-----	-----	-----
Hawaii's Thousand Friends	-----	-----	-----
Waipahu Neighborhood Board No. 22	-----	-----	-----
Mililani Neighborhood Board No. 25	-----	-----	-----
Wahiawa Neighborhood Board No. 26	-----	-----	-----
Castle & Cooke Land Company	-----	-----	-----
Waipio Gentry Community Assoc.	-----	-----	-----
Ewa Beach Library	3/21/89	3/29/89	NRN



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 210
FT SHAFTER HAWAII 96861-5400

April 10, 1989

REPLY TO
ATTENTION OF
Planning Branch

Dr. Marvin Miura
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Dr. Miura:

Thank you for the opportunity to review the Draft Environmental Impact Statement (DEIS) for the proposed Maiola Estates Subdivision, Waipio, Ewa, Oahu, Hawaii. Our review comments on the EIS Preparation Notice (letter dated January 24, 1989) have been incorporated into the DEIS. We have no additional comments.

Sincerely,

Ksuk Cheung
Chief, Engineering Division

Copies Furnished:

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

City and County of Honolulu
Department of Housing
and Community Development
650 South King Street
Honolulu, Hawaii 96813

✓
Mr. Fred Rodriguez
Environmental Communications, Inc.
1146 Fort Street Mail #200
Honolulu, Hawaii 96813

NO RESPONSE NEEDED



United States Department of the Interior
FISH AND WILDLIFE SERVICE
 PACIFIC ISLANDS OFFICE
 P.O. BOX 50167
 HONOLULU, HAWAII 96850

ES
 Room 6307
 MAR 14 1989

Dr. Marvin Miura, Director
 Office of Environmental Quality Control
 465 South King Street, Room 104
 Honolulu, Hawaii 96813

Re: Draft Environmental Impact Statement (EIS), Waiola Estates
 Subdivision, Ewa, Oahu

Dear Dr. Miura:

We have reviewed the referenced EIS dated March 1989. To the best of our knowledge, no listed or proposed endangered species, migratory birds, or anadromous fishes within our jurisdiction occur in the proposed project area(s). However, due to current manpower and budget restrictions, the Office of Environmental Services cannot devote the time necessary to conduct a thorough review of fish and wildlife concerns associated with the referenced action at this time. We strongly recommend that you consult directly with the Department of Land and Natural Resources.

Please be advised that this notification does not represent Service approval of, or support for, the proposed activity. The Service may review future actions related to this proposal should administrative constraints be alleviated or if adverse impacts to significant fish and wildlife resources are identified. Please continue to keep this office apprised of the project's status.

Sincerely yours,

Ernest Kosaka

Ernest Kosaka
 Field Office Supervisor
 Environmental Services

cc: DLNR
 Dept. of Land Utilization
 Dept. of Housing & Comm. Development
 Environmental Communications, Inc.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
 610 SOUTH KING STREET, 5TH FLOOR
 HONOLULU, HAWAII 96813
 PHONE 523 4437



FRANKIE KAH
 MAIL ROOM

MICHAEL H. SCARFONE
 DIRECTOR
 MARAM K. WAKAMA
 DEPUTY DIRECTOR

April 4, 1989

Mr. Ernest Kosaka
 United States Department
 of the Interior
 Fish and Wildlife Service
 Pacific Islands Office
 P. O. Box 50167
 Honolulu, Hawaii 96850

Dear Mr. Kosaka:

Subject: Draft Environmental Impact Statement
 Kipapa Ridge Estates (formerly Waiola Estates)
 Subdivision

We have received your comments dated March 14, 1989 on the Draft Environmental Impact Statement.

We acknowledge your qualified statement that "To the best of our knowledge, no listed or proposed endangered species, migratory birds, or anadromous fishes within our jurisdiction occur in the proposed project area(s)." We will be reviewing the comments from the State Department of Land and Natural Resources on this subject.

Thank you for your comments.

Sincerely,

Michael H. Scarfone
 MICHAEL H. SCARFONE
 Director

MAR 15 1989



DEPARTMENT OF THE NAVY
 COMMANDER
 NAVAL BASE PEARL HARBOR
 BOX 110
 PEARL HARBOR, HAWAII 96805-020

IN REPLY REFER TO:
 11010
 Ser 03(09P2)/1036
 14 APR 1989

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

Dear Sir:

WAIOLA ESTATES SUBDIVISION
 WAIPIO, EWA, OAHU, HAWAII

We have reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Waioia Estates Subdivision which was sent to us by your letter in March 1989.

The following comments are provided:

- a. On pages 9 and 23, "Kipapa Military Reservation" should be changed to "Waikale Branch, Naval Magazine Lualualei".
- b. The proposed development is adjacent to the Naval Magazine Waikale operations. Locating a Par 3 Golf Course next to the Naval Magazine is considered prudent planning and fully compatible with Navy operations.
- c. The DEIS should address possible changes in the stream flow rate of Kipapa Stream through the Naval Magazine Waikale Branch due to the project.

The Navy's point of contact is Mr. Bill Liu, telephone 471-3324. Thank you for the opportunity to review the DEIS.

Sincerely,

W. K. Liu
 Assistant Base Civil Engineer
 by Appointment
 Commander

Copy to:
 Office of Environmental Quality Control
 Department of Housing & Community Development
 Environmental Communications, Inc. →

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
 650 SOUTH KING STREET, 31st FLOOR
 HONOLULU, HAWAII 96813
 PHONE 533-4427



FRANKIE KASB
 MAIL ROOM

MICHAEL SCARFONE
 DIRECTOR
 WENDY KAMAKA
 DEPUTY DIRECTOR

April 16, 1989

Mr. William K. Liu
 Department of the Navy
 Commander, Naval Base Pearl Harbor
 Box 110
 Pearl Harbor, Hawaii 96850-5020

Dear Mr. Liu:

Subject: Draft Environmental Impact Statement
 Kipapa Ridge Estates (formerly Waioia Estates)
 Subdivision

We have received your Agency's comments dated April 14, 1989 on the Draft Environmental Impact Statement (DEIS). We respond as follows:

- a. The corrections you indicated on pages 9 and 23 with reference to the Waikale Branch, Naval Magazine Lualualei, will be made in the final EIS.
- b. Your comment that placement of the par-3 golf course adjacent to the Naval Magazine is duly noted.
- c. The civil engineering consultant is developing the preliminary drainage report for the proposed project and all potential impacts due to the project on Kipapa Stream will meet applicable City requirements.

Thank you for your timely review and comments.

Sincerely,

MICHAEL N. SCARFONE
 Director

REPRODUCED AT GOVERNMENT EXPENSE

APR 17 1989

JOHN WILSON
Colonel



STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
2795 DIAMOND HEAD ROAD, HONOLULU, HAWAII 96819

ALBERT S. LIM
Major General
Adjutant General

WALTER M. HARRIS
Major General
Adjutant General

March 22, 1989

Engineering Office

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

Dear Sir:

Maioia Estates Subdivision
Ewa, Oahu

Thank you for providing us the opportunity to review the above subject project.

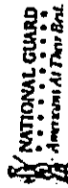
We have no comments to offer at this time regarding this project.

Sincerely,

Jerry H. Matsuda
Major, Hawaii Air
National Guard
Contr & Engr Officer

cc:
State Office of Environmental Quality Control
& C Dept. of Housing & Community Development
Mr. Fred Rodriguez, Environmental Communications, Inc.

NO RESPONSE NEEDED



MAR 23 1989

104/89 2442



DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT

ONE SIXTY SEVEN DIVISION, 335 KING STREET, 2ND FLOOR, HONOLULU, HAWAII 96813 FAX: (808) 541-5200

89:709e

JOHN WAIHEE GOVERNOR ROGER A. LIVINGSTON DEPUTY GOVERNOR BARBARA J. BARNETT DEPUTY GOVERNOR LESLIE S. MATHIAS DEPUTY GOVERNOR

April 21, 1989

Mr. John Whalen, Director Department of Land Utilization 650 South King Street Honolulu, Hawaii 96813

Dear Mr. Whalen:

Subject: Draft Environmental Impact Statement for Maioia Estates Subdivision

The Energy Division has received the above-referenced Draft Environmental Impact Statement (DEIS) and has the following comments:

We note that the DEIS contains no discussion of energy impacts that will result from the proposed project. The DEIS does not contain an estimate of total electricity consumption, a description of available power supply, or a discussion of energy conservation or renewable energy sources that might help meet the project's energy requirements.

We note also that in Chapter VI, the State Plan's objectives, policies, and guidelines were not examined for their relationship to the proposed project. The requirement for such an examination is spelled out in the enclosed excerpt from the OEQC Bulletin.

We believe that the DEIS should fully address the above-noted omitted items. Thank you for the opportunity to comment on this DEIS. We hope these comments will be useful to you.

Sincerely,

Maurice H. Kaya Energy Program Administrator

MHK/PE:do Enclosure cc: Fred Rodriguez DHCO OEQC

104/89 2442

OEQC BULLETIN

JOHN WAIHEE GOVERNOR MARVIN T. MIURA, Ph.D. DIRECTOR

September 23, 1988

REGISTER OF CHAPTER 343, HRS DOCUMENTS

All Chapter 343, HRS documents submitted for publication in the OEQC Bulletin must be addressed to the Office of Environmental Quality Control, 465 South King Street, Room 104, Honolulu, Hawaii 96813. Documents addressed otherwise will not be considered for publication.

NEGATIVE DECLARATIONS

The following are Negative Declarations or determinations made by proposing or approving agencies that certain proposed actions will not have significant effects on the environment and therefore do not require EISs (EIS Rules 11-200-11). Publication in the Bulletin of a Negative Declaration initiates a 60-day period during which litigation measures may be instituted. Copies are available at 25 cents per page upon request to the office. Parties wishing to comment may submit written comments to the agency responsible for the determination (indicated in project title). The Office would appreciate a copy of your comments.

KAUAI

GOLF COURSE AT HYATT REGENCY, POLO, Aiea Resort Associates-Grove Farm Properties, Inc./County of Kauai Planning Commission

The applicant proposes to develop an 18-hole championship-calibre golf course and operate it in association with the planned 605-room Hyatt Regency Kauai at Keonelo Bay. The proposed development will be maintained as a resort-oriented facility but will be opened to the public. It will be developed also to accommodate an increasing demand for golf play in Poipu and to make South Kauai more competitive with other visitor destination areas on the island.

The golf course will consist of 18 holes, a driving range, putting green, and clubhouse. The clubhouse will be located near the planned Hyatt Regency Kauai and will include parking and access from Poipu Road extension. The clubhouse will include a golf pro shop, restaurant, golf club storage room and golf cart maintenance area. Also proposed are a golf course maintenance building and temporary field nursery that will be located within the golf fairways away from the golf clubhouse.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
830 SOUTH KING STREET, 9TH FLOOR
HONOLULU, HAWAII 96813
PHONE 532-4637



MICHAEL W. SCARFONE
DIRECTOR
MURRAY S. HARRIS
DEPUTY DIRECTOR

FRANCIS P. FAH
DIRECTOR

April 27, 1989

Mr. Maurice H. Kaya
Energy Program Administrator
Department of Business and
Economic Development
335 Merchant Street, Room 110
Honolulu, Hawaii 96813

Dear Mr. Kaya:

Subject: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Maioia Estates) Subdivision

We have received your Department's comments dated April 21, 1989 on the Draft EIS. We respond as follows:

We direct your attention to page 55, Long Term Direct Impact on Air Quality, which answers your specific request for:

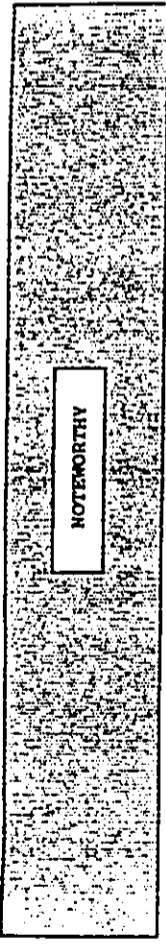
- a. Total electricity consumption - 6.6 million kilowatt hours.
- b. Available power supply - Kahe Power Plant.
- c. Energy conservation measures - solar water heaters; landscaping and positioning of windows.

Regarding the State Functional Plan on Energy, we did not give as full a discussion as might be required in your Office's perspective. This will be corrected in the Final EIS.

Thank you for your comments.

Sincerely,

Michael W. Scarfone
MICHAEL W. SCARFONE
Director



NOTWORTHY

NEWS FROM THE EPA

Rule Finalized for Premanufacture Notification Fees

The EPA Administrator signed a final rule requiring fees from manufacturers, importers, and processors who are seeking Agency review of premanufacture notices (PMNs) for new chemicals, exemption applications and significant new-use notices submitted under Section 5 of the Toxic Substances Control Act (TSCA). The rule will be published in the Federal Register within two weeks. Contact: TSCA Assistance Information Service (202) 554-1404.

Chemical Fact Sheets

EPA has distributed about 180 fact sheets prepared by the State of New Jersey on chemicals which must be reported under Section 313 of Title III (annual toxic chemical release reports). EPA and New Jersey have committed to developing fact sheets on the remaining Section 313 chemicals by December 31, 1988. Each fact sheet contains a 2- to 3-page summary of relevant information on each chemical and is developed primarily for individuals working with chemicals, and also offers relevant and important information for general use. To obtain copies of the fact sheets, call the TSCA Infor-

nation Assistance Service (202) 554-1404.

Lead in Drinking Water

Safe Drinking Water Hotline's correct number: 1-800-426-4791 or (202) 382-5533 in the Washington metropolitan area.

ENERGY IMPACTS

Draft Environmental Impact Statements should comply with the requirements found in State laws for evaluating any energy impacts that the project will have. The mandate for such an evaluation is found in Chapter 344, HRS ("State Environmental Policy") and Chapter 226, HRS ("Hawaii State Planning Act"). In particular, Chapter 226-18(a)(2) and (c)(3); 226-52(a)(2) and (b)(2)(D); and 226-103(f)(1) and (2) should be noted.

ENVIRONMENTAL COUNCIL MEETINGS

The Environmental Council is currently updating its list of individuals, organizations, and agencies that receive notices of its meetings. All those wishing to be kept on or added to the list are asked to submit their names and addresses to: Environmental Council, 465 S. King Street, Room 104, Honolulu, HI 96813.



OFFICE OF STATE PLANNING

Office of the Governor

STATE CAPITAL, HONOLULU, HAWAII 96813 TELEPHONE (808) 548-5971

DIVISION OF GOVERNMENT

APR 25 11:10

Mr. Michael N. Scarfone, Director
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

April 21, 1989

Dear Mr. Scarfone:

SUBJECT: Draft Environmental Impact Statement (DEIS) Proposed Maioia Estates Subdivision Situated in Waipio, Oahu

We have reviewed the subject DEIS and your Agency's comments dated February 8, 1989, (contained in the DEIS) on the Maioia Estates EIS Preparation Notice.

The proposed project is currently comprised of 1,345 single and multifamily residential dwelling units, a school site, childcare facility, park and ride facility, a district park, and a 9-hole golf course. Forty percent (40%) of the proposed units will be sold at market prices and the remaining 60 percent (60%) sold at "affordable" prices.

We note that the conceptual plan addressed in the EISPM has been modified to reflect a smaller district park and deletion of a neighborhood park.

In our January 23, 1989 letter regarding the EISPM, we recommended that the EIS address the shared infrastructure and regional impacts associated with the proposed Maioia residential community. Your agency responded that "A preliminary master plan will be developed by our engineering consultants and the project's relationship with the adjoining Waiokele project will be analyzed". Inasmuch as the master plan is not provided in the DEIS, we are unable to determine the proposed development or phasing schedule for infrastructure development as compared to infrastructure improvements planned for Waiokele. The infrastructural interdependence of the two projects must be analyzed.

Appendix D of the DEIS states that the proposed improvements to Kamehameha Highway and the construction of the Waipio and Paiva Interchange would mitigate much of the traffic problems currently experienced, as well as the impacts anticipated for the Maioia Estates project. The timing of these improvements should be discussed as a critical factor in the mitigation of regional traffic impacts. Furthermore, we note that the proposed Paiva Interchange, Paiva Street, Ka Uka Boulevard and the Waipio Interchange are parts of a functional system dependent on the implementation of the Waiokele Project.

Mr. Michael N. Scarfone
Page 2
April 21, 1989

The DEIS should also contain more information on unit pricing to assess the affordability of the proposed units. We understand the need to maintain flexibility as market demands require, however, it is not unreasonable to estimate housing prices in relation to the current market.

In addition, we suggest that the DEIS contain a more detailed review on project funding relative to the City's proposed budget and potential impacts of the proposed project on (a) availability of potable water from the Pearl Harbor Ground Water Control Area (PHGWCA) and (b) potential for groundwater contamination of the Waipahu wells located down-gradient of the proposed project.

We appreciate this opportunity to comment.

Sincerely,

Harold S. Masumoto
Director

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

890 SOUTH KING STREET, 37th FLOOR
HONOLULU, HAWAII 96813
PHONE 933 4627



FRANK P. BASH
MAYOR

MICHAEL H. SCARFONE
DIRECTOR
MURRAY KAMAKA
DEPUTY DIRECTOR

Mr. Harold S. Masumoto
May 2, 1989
Page 2

May 2, 1989

Mr. Harold S. Masumoto, Director
Office of State Planning
Office of the Governor
State Capitol
Honolulu, Hawaii 96813

Dear Mr. Masumoto:

Subject: Draft Environmental Impact Statement (DEIS)
Kipapa Ridge Estates (Maioia Estates) Subdivision
Waipio, Ewa, Oahu

We have received your office's comments dated April 21, 1989 on the subject document and we respond as follows:

1. Your initial comment on the lack of development schedules or phasing plans tied to or coordinated with the adjacent Amfac, Inc., Waikale project is well taken. We are not ignoring your reference and have noted in the Draft EIS that delays in the Waikale schedule will not mean a delay for Waioia where sewage and drainage are concerned.
2. We appreciate your concern that the adjacent Waikale project is closely tied to the scheduling of Kipapa Ridge Estates. This is especially true in the traffic mitigation aspects as implementation of the Waikale project will provide Kipapa Ridge with badly needed access relief via the Paiwa interchange. The latest available schedule provided by Amfac for the Paiwa interchange indicates a start construction date of mid-1989 with completion by the end of 1990. The State Department of Transportation informs us that Waipio interchange is expected to be completed in the second quarter of 1990.
3. Unit pricing for this project will be significantly below comparable units available on the market.

At the present time, estimated price ranges are:

Affordable single family units: \$113,000 to \$171,000
Affordable townhouse units: \$62,000 to \$75,000 and
\$90,000 to \$100,000
Market single family units: \$220,000

These estimated price ranges are in 1988 dollars and are subject to adjustment at the time of construction.

4. Project Funding. At the present time, the City Council has not finalized the City budget for the 1989-90 fiscal year.
5. Potable Water Availability. Potable water for this project will be made available through development of a spring source at the HECO Waiau power plant which currently flows into Pearl Harbor. Development of this source will not affect the sustainable yield of the Pearl Harbor aquifer. The estimated daily demand from the Maioia Estates/Kipapa Ridge project is calculated at .850 mgd. for potable water and .172 mgd. for non-potable water for irrigation purposes.
6. Groundwater Contamination. At the present time, there is no definitive data on the potential to contaminate down gradient wells at Waipahu.

Thank you for your comments.

Sincerely,

MICHAEL H. SCARFONE
Director

JOHN WALSH
DIRECTOR OF LAND



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 437
HONOLULU, HAWAII 96813

REF: OCEA-SOR

APR 7 1989

FILE NO.: 89-491
DOC. NO.: 5454E

WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

SECRET

LUREN S. LANGOLF
MANAGER / FACSIMILE
MUSSELL E. PALUMOTO

AGRICULTURE DEVELOPMENT
PROGRAMS
ACQUISITION
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSTRUCTION AND
RECONSTRUCTION DEPARTMENT
CONTRACTS
PLANNING AND DESIGN
LAND MANAGEMENT
STATE PLANNING
UTILITIES AND LAND DEVELOPMENT

Honorable Donald A. Clegg - 2 - FILE NO.: 89-491

1. On Page 27, the water demand for the golf course and parks needs clarification as to whether it should be 0.72 or 0.072.
2. On page 25, the meaning of basal line should be clarified.
3. On page 40, under State Water Resources Plan, project water demand is stated to be 0.85 mgd, while elsewhere 1 mgd plus park usage is indicated. The second paragraph should be clarified.
4. The water sources for this project should be addressed fully.

Please feel free to call me or Roy Schaefer of our Office of Conservation and Environmental Affairs, at 548-7837, if you have any questions.

Very truly yours,

WILLIAM W. PATY

cc: C&C Dept. of Housing and Community Development
Environmental Communications, Inc.
Fred Rodriguez

The Honorable Donald A. Clegg
Chief Planning Officer
Department of General Planning
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Clegg:

SUBJECT: Draft EIS - Waiala Estates Subdivision
TRK: 9-4-07: 1, Ewa, Oahu

Thank you for giving our Department the opportunity to comment on this matter. We have reviewed the materials you submitted and have the following comments.

Our Department's Historic Sites Section anticipates that the project will have "no effect" on significant historic sites, as the project area has been in agricultural production for many years.

Our Aquatic Resources Division has no objection to the proposal; it is not expected to adversely affect aquatic resource values significantly. Appropriate mitigating measures should be incorporated into the construction plans to reduce erosion and the release of chemicals, petroleum products and building materials into Kipapa and Waialeale Gulches and Streams, inasmuch as the State's pole-and-line aku fishery relies heavily on baitfish taken in West Loch.

The Water and Land Development Division points out that since this project is within the Pearl Harbor Ground Water Management Area, any source development will require a water use allocation permit from the Commission on Water Resource Management.

In addition, our comments on this EIS are as follows:

APR 10 1989

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

630 SOUTH KING STREET, 31ST FLOOR
HONOLULU, HAWAII 96813
PHONE 533-2421



FRANK J. GARDNER
DIRECTOR

MICHAEL N. SCARFONE
DIRECTOR
WILLIAM W. PATY
DEPUTY DIRECTOR

Mr. William W. Paty
April 17, 1989
Page 2

April 17, 1989

Mr. William W. Paty, Chairperson
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

Subject: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Waioala Estates)
Subdivision

We have received your Department's comments dated April 7, 1989 on the Draft Environmental Impact Statement (DEIS). These comments have been reviewed by both our staff and our consultants and we respond as follows:

1. DLNR/Historic Sites Section comments are consistent with previous comments made earlier in prior EIS documents.
2. Aquatic Resources Division comments will be duly noted and all efforts to mitigate surface runoff/drainage impacts on West Loch will be complied with in accordance with City standards on grading and site preparation work.
3. Water and Land Development Division references to the requirement to obtain a water use allocation permit from the Commission on Water Resource Management will be coordinated through the Board of Water Supply. On the specific DEIS comments made on page 2, we are revising the anticipated potable and non-potable water demands for the Project. These demand figures will be based on potable demand for residential use and non-potable demand for golf course and landscaping irrigation use. Our responses are as follows:

- a. Page 27: Non-potable water demand for the proposed golf course and park will require 182,000 gallons per day (gpd). Changes will be made in the narrative to reflect this latest calculation.
- b. Page 25: The reference to "basal line" is in error and will be corrected to say "basal lens."
- c. Page 40: The confusion has been corrected by our civil engineering consultant and the current calculations now indicate that the total water demand for the Project is: potable water - 850,600 gpd and non-potable water - 182,000 gpd. These corrected figures will be included in the Final EIS.

d. The water source for this Project is the Board of Water Supply's source development program at the Hawaiian Electric Company Waiuu Project. HECO has a tunnel and well sources to obtain water for cooling its generators. The Board of Water Supply will construct facilities to pump the tunnel water and obtain approximately 3 to 5 million gallons of water per day. The Kipapa Ridge Estates project will pay its pro-rata share of the source development costs.

Thank you for your timely and thorough review of the DEIS.

Sincerely,

MICHAEL N. SCARFONE
Director

JOHN WALKER
Governor



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
100 KANEHOHOLE AVENUE, 21ST FLOOR
HONOLULU, HAWAII 96813

March 7, 1989

Mr. Michael N. Scarfone
Department of Housing and Community
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Mr. Scarfone:

Re: Environmental Impact Statement Preparation Notice
Proposed Waioala Estates Subdivision, Waipio, Oahu

We have reviewed the EIS Preparation Notice for the proposed
Waioala Estates Subdivision and offer the following comments:

1. A revised/updated Traffic Impact Analysis Report should
be included in the EIS and submitted for our review and approval.

The developer should design the subdivision's internal
roadway system to provide easy access to Paia Interchange/Paiwa
Street. This roadway should serve as the main access to the
subdivision and the accesses to Kamehameha Highway should be
as the secondary ingress/egress points. Proper coordination
with the Waialeale developer should be undertaken regarding this
internal roadway design. Since the Paia Interchange was
designed without consideration given to this Waioala development,
any changes necessary to accommodate traffic from Waioala should
be funded by the developer.

3. The developer should be responsible for widening
Kamehameha Highway including the acquisition of any needed
rights-of-way.

4. Timing of the proposed Waioala Estates subdivision is very
important. Occupancy of any new homes should not be allowed
until the following transportation improvements are completed.

a. Construction of the Waipio and Paia Interchanges
and their connecting roadways to Waioala Estates.

EDWARD Y. HITATA
DIRECTOR
DEPUTY DIRECTORS
JOHN K. LUCAS
RONALD W. HIRATA
DAVID T. KOON
JEANNE K. SCHWARTZ

IN REPLY REFER TO

STP 8.3357

8 25 14 22:14

2 b. Widening of Kamehameha Highway fronting both the
Waialeale and Waioala developments, including intersection
improvements and traffic signals.

5. The EIS should incorporate the widening of Kamehameha
Highway and include a discussion on his resulting impacts such
as air, noise, rights-of-way acquisition, etc.

6. The developer should be informed that we are seriously
concerned about the effects of developments such as Waioala
Estates on downstream sections of our highway system.
Consequently, we will be considering methods to obtain developer
assistance to fund needed improvements.

7. The developer should also consider implementing traffic
management programs such as ridesharing, subscription bus
service, carpools, carpool computer matching service, provision
of park-and-ride and daycare facilities, etc., as appropriate.

Thank you for this opportunity to provide comments.

Very truly yours,

Edward Y. Hitata
Edward Y. Hitata
Director of Transportation

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE 533-6277



PLANNING DIVISION

MICHAEL M. SCAFFONE
DIRECTOR
MICHAEL M. SCAFFONE
DIRECTOR

Mr. Edward Y. Hirata
April 18, 1989
Page 2

April 18, 1989

Mr. Edward Y. Hirata, Director
State Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Hirata:

Subject: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Waiola Estates)
Subdivision

We received on March 14, 1989 your Department's comments dated March 7, 1989 on the Environmental Impact Statement Preparation Notice (EISPN). Unfortunately these comments were received after the Draft Environmental Impact Statement (DEIS) was prepared and circulated for comment on March 7, 1989 and therefore your comments could not be included in the Draft EIS. The 45-day comment period on the DEIS will end on April 24, 1989 and we look forward to your Agency's comments at that time.

Our response to your comments on the EISPN are as follows:

1. An updated traffic impact report has been included as an appendix to the Draft EIS as you have suggested.
2. Coordination with the adjacent Waialae project will be an ongoing process, not only transportation concerns, but also for drainage, sewerage and potable water.
3. The costs for widening Kamehameha Highway along the subdivision's frontage are included in the development budget for the Kipapa Ridge project.

4. We agree that timing of construction is important; however, the City has no control over construction schedules for the Waipio and Paia Interchanges or widening of Kamehameha Highway fronting Waialae. We will make every effort to properly phase the Kamehameha Highway widening fronting the Kipapa Ridge project.


5. The Draft EIS does contain noise and air quality studies which address the impacts of widening Kamehameha Highway. The Final EIS will include a statement that no additional right-of-way need be acquired along the Kipapa Ridge frontage as the additional right-of-way has been provided for in the landscaped buffer along the Waipio by Gentry subdivision.

6. The City and County of Honolulu is the developer of the Kipapa Ridge Estates project. We do not believe it is equitable for new developments to bear the costs of long-standing infrastructure inadequacies when other developments were not similarly assessed. Further, your Department's consideration of developer funding for highway system improvements should be coordinated with the City's efforts to develop a community benefit assessment system.

7. The Kipapa Ridge project does contain a site for a park and ride facility adjacent to a child care facility and the Department does plan to implement a traffic management program to encourage bus use and carpooling.

Thank you for your comments.

Sincerely,


MICHAEL M. SCAFFONE
Director

JOHN WAIHEE
GOVERNOR



YUKIO KITAGAWA
CHAIRPERSON, BOARD OF AGRICULTURE
SUZANNE D. PETERSON
DEPUTY TO THE CHAIRPERSON

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 So. King Street
Honolulu, Hawaii 96814-2512

Mailing Address:
P. O. Box 22159
Honolulu, Hawaii 96822-0159

April 20, 1989

Mr. John P. Whalen
April 20, 1989
Page -2-

MEMORANDUM

To: Mr. John P. Whalen, Director
Department of Land Utilization
City and County of Honolulu

Subject: Draft Environmental Impact Statement (DEIS) for
Waiala Estates Subdivision
City and County of Honolulu
TKK: 9-4-07: 1 Waipio, Ewa, Oahu
Area: 269.454 acres

The Department of Agriculture has reviewed the subject DEIS
and offers the following comments.

According to the DEIS, the applicant is seeking to
redesignate the subject property from Agriculture to various
Urban designations for 1,345 housing units for "gap group",
low/moderate income, and market price purchasers.

The DEIS satisfactorily addresses most of the concerns
found in our letter of January 19, 1989 to Mr. Michael H.
Scarfone regarding the Environmental Impact Statement
Preparation Notice for the project. However, the following
items need to be addressed in the FEIS:

- Conformity to the State Agriculture Functional Plan
and its objectives and policies, particularly,
Implementing Action B(5)(c); and
- The relationship of the project to the following
Hawaii State Plan objectives, policies and priority
guidelines:

226-7(b)(6) "Assure the availability of agriculturally
suitable lands with adequate water to accommodate
present and future needs."

226-103(c)(1) "Provide adequate agricultural lands to
support the economic viability of the sugar and
pineapple industries."

226-103(d)(1) "Identify, conserve and protect
agricultural and aquacultural lands of importance and
initiate affirmative and comprehensive programs to
promote economically productive agricultural and
aquacultural uses of such lands."

226-104(b)(2) "Make available marginal or
non-essential agricultural lands for appropriate urban
uses while maintaining agricultural lands of
importance in the agricultural district."

We would like to receive a copy of the FEIS.
Thank you for the opportunity to comment.

Yukio Kitagawa
YUKIO KITAGAWA

Chairperson, Board of Agriculture

cc: OEQC
DHCD
Environmental Communications, Inc.



APR 24 1989

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

530 KOUSSING STREET, 21ST FLOOR
HONOLULU, HAWAII 96813
PHONE 923-4227



FRANK PARI
MAIL ROOM

MICHAEL H. SCARFONE
DIRECTOR

MURAKI KAWADA
DEPUTY DIRECTOR

April 27, 1989

Mr. Yukio Kitagawa, Chairperson
Department of Agriculture
1428 South King Street
Honolulu, Hawaii 96814

Dear Mr. Kitagawa:

Subject: Draft Environmental Impact Statement (DEIS)
Kipapa Ridge Estates (formerly Ma'ola Estates) Subdivision

We have received your Department's comments dated April 20, 1989 on the subject DEIS and we respond as follows:

Conformity with the State Agricultural Functional Plan and its objectives and policies, in particular, Implementing Action 815)(c), will prove difficult if not impossible for this Agency to meet due to our efforts to meet the basic objectives and policies of the Housing Functional Plan. Housing development competes for the same quality lands that are to be preserved by the Agricultural Functional Plan and as you know, the Hawaii State Plan has not assigned housing or agriculture a higher priority over the other. As to the relationship of the proposed subdivision to Hawaii State Plan policies in Hawaii Revised Statutes Sections 226-71b)(6), 226-103(c)(1), 226-103(d)(1), and 226-104(b)(2), the project generally will be viewed as contrary to these objectives because the project involves the conversion of agricultural land. However, landowner Castle and Cooke, Inc., has stated that conversion of these lands to urban use will not affect pineapple production or jobs over the long term since other surplus lands have been converted to pineapple as part of the overall land utilization program of Castle and Cooke, Inc., and its subsidiaries.

Thank you for your timely comments on the Draft EIS. We will provide your office with a copy of the Final EIS.

Sincerely,

Michael H. Scarfone

MICHAEL H. SCARFONE
Director

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
430 SOUTH KING STREET, 3TH FLOOR
HONOLULU, HAWAII 96813
PHONE 523 8827



MICHAEL SCARFONE
DIRECTOR
HONOLULU, HAWAII
96813

'89 APR 14 /NI
DEPT OF HOUSING
& COMM DEVELOPMENT
89:PLNG/232R JT

April 11, 1989

April 17, 1989

MEMORANDUM

TO: Dr. Marvin Miura, Director
Office of Environmental Quality Control

FROM: Joseph K. Conant

SUBJECT: Draft Environmental Impact Statement for the Proposed
Maioia Estates Subdivision

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

The draft State Housing Functional Plan proposes the integration of special needs housing in new and existing neighborhoods. (Special needs housing is generally defined as housing for persons for whom social problems, age, or physical or mental handicaps impair their ability to live independently and for whom such ability can be improved by more suitable housing conditions.) The draft housing plan advocates that developers of residential projects should make at least one percent of the total number of units in the project available for special needs groups.

Thank you for the opportunity to comment.

cc: JOSEPH K. CONANT
Executive Director
Department of Housing & Community Development
Environmental Communications, Inc.
Department of Land Utilization

Mr. Joseph K. Conant
Executive Director
Housing Finance and Development
Corporation
P. O. Box 29360
Honolulu, Hawaii 96820-1760

Dear Mr. Conant:

Subject: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Waioia Estates)
Subdivision

We have received your Agency's comments dated April 11, 1988 and we respond as follows:

As you know, the City and County has provided funding for several special needs housing projects. While we cannot at this time make a firm commitment to set aside a certain percentage of units in the Kipapa Ridge Estates Subdivision for special needs groups, we are certainly open to specific proposals from any of the qualified nonprofit corporations that have been working with. In addition, we have already provided that twenty percent of the total units would be available to low- and moderate-income households including the elderly.

Thank you for your comments.

Sincerely,

MICHAEL H. SCARFONE
Director

STATE OF HAWAII
 DEPARTMENT OF BUSINESS
 AND ECONOMIC DEVELOPMENT



LAND USE COMMISSION

Room 104, Old Federal Building, 335 Merchant Street
 Honolulu, Hawaii 96813 Telephone: 548-4111

JOHN WILHE
 Governor
 DENYON L.K. NIP
 Chairman
 LAWRENCE F. OAH
 Vice Chairman

COMMISSION MEMBERS:
 Samuel S. Hwang
 Leslie Pail Jackson
 Allan Kujala
 Robert Tappan
 Frederick S. Williams
 Tom Sobel
 Allan S. Lee
 STEVEN WEA
 Executive Officer

March 13, 1989

Mr. Michael N. Scarfone
 Director
 Department of Housing and
 Community Development
 City and County of Honolulu
 650 S. King Street, 5th Floor
 Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Draft EIS for the Proposed Waiola Estates
 Subdivision

The subject property is located within the State Land Use
 Agricultural District and we understand a petition for a
 district boundary amendment will be submitted to the Commission
 at a later date.

We have no further comments at this time.

Sincerely,

 ESTHER UEDA
 Executive Officer

EU:to

89 MAR 15 AM 10:06
 CITY AND COUNTY OF HONOLULU
 DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT

MIKE N. SCARFONE
 DIRECTOR
 MIKEME KAMARA
 DEPUTY DIRECTOR



DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
 CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR
 HONOLULU, HAWAII 96813
 PHONE 933-4217

FRANKER ZASH
 WRITER

April 4, 1989

Ms. Esther Ueda, Executive Officer
 State Land Use Commission
 Room 104, Old Federal Building
 335 Merchant Street
 Honolulu, Hawaii 96813

Dear Ms. Ueda:

Subject: Draft Environmental Impact Statement
 Kipapa Ridge Estates (formerly Waiola Estates)
 Subdivision

We are in receipt of your comments dated March 13, 1989. Your
 comment that the proposed project is located in presently
 Agricultural designated lands is understood and the Department
 of Housing and Community Development will be filing a petition
 to amend the District Boundary.

Thank you for your comments.

Sincerely,

 MICHAEL N. SCARFONE
 Director





University of Hawaii at Manoa

Environmental Center
Crawford 317 • 2550 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7381

April 24, 1989
RE:0528

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

Dr. Marvin Miura, Director
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Gentlemen:

Draft Environmental Impact Statement
Waiola Estates Subdivision
Waipio, Ewa, Oahu

The above referenced document proposes the development of a single and multi-family residential subdivision, containing approximately 1,345 units with appurtenant infrastructure and facilities. This project will be located in Waipio, Ewa, Oahu, bounded by Kanehale Highway to the east, Kipapa Gulch and the Kipapa military reservation to the west.

This review was conducted with the assistance of Peter Flachsbart, Urban and Regional Planning; Paul Ekern and Yu-Si Fok, Water Resources Research Center; and C. Anna Ulaszewski, Environmental Center.

General Comments

Several times, specifically regarding drainage and wastewater, this document states that delays in the Waikale development will not affect Waikale and this project. It is unclear what the relationship is between affect this project.

Also, please note that the page numbers after Section VII are incorrect.

1-82107339 5/28/89 2:24: 1 1-44

AN EQUAL OPPORTUNITY EMPLOYER

Mr. John Whalen
and Dr. Marvin Miura

-2-

April 24, 1989

In general, our reviewers find the level of detail in this document superficial and insufficient to reasonably assess both the significance of the project's impacts and the adequacy of proposed mitigative measures. We have noted specific deficiencies which are particularly serious in the following sections, but as a whole, this Draft EIS fails to achieve standards of comprehensiveness common in the documentation of similar projects which we have reviewed recently.

Archaeological Characteristics

According to page 30, "It was concluded that structural remains would have been destroyed by pineapple production long ago, so the only evidence of past human utilization would be unearthed fragments of food remains and artifact." While this assumption may be correct, it should not be taken for granted that artifacts found on the project site are insignificant. Also, it should not be assumed that significant substrata structures have been obliterated.

A field inspection was conducted by Chidiago, Inc., on August 15, 1985; however, this study was not appended to the Draft EIS. Therefore, until the field report is made available, a comprehensive review of the archaeological characteristics of the site and potential impacts is not possible.

Air Quality - Short-Term and Indirect Impacts of Project Construction

According to page 54, "the overall air quality impact of emissions from construction equipment should be insignificant compared to emissions from roadways nearby." Comparison of air pollutants generated by construction equipment with vehicular emissions from nearby roadways is not justified, since the effect of any additional air pollutants will be cumulative.

Topographic Characteristics

Soil:

The Draft EIS contains ambiguous and contradictory descriptions of the erosion potential of soils in the project area. Page 24, paragraph 4, suggests that erosion will be accelerated if the "natural landscape" is disturbed; page 17, paragraph 2, states that erosion can be moderate to severe if the land is not protected. Since the project will disturb the natural landscape, what protective measures will be employed to prevent erosion?

Climate:

Evapotranspiration data need to be known in order to assess irrigation needs. Pan-evaporation data for the area of the project should be included.

Mr. John Whalen
and Dr. Marvin Miura

-3-

April 24, 1989

Hydrological Characteristics

The methodology for computing water requirements for the project should be included in the Draft EIS. We are unable to verify the figures presented in this document. Considering the high evapotranspiration rate in Ewa, we believe they are underestimated. In addition, water requirements cited on page 27, do not correspond to those on page 40. Which is the correct figure?

The statement on page 40, "[t]he project will not prevent the attainment or maintenance of a 'sustainable yield capacity' in the amount of groundwater in the Pearl Harbor basin," cannot be verified without assessing the cumulative impacts of all projected developments presently being considered for the region. This Draft EIS conspicuously omits consideration of cumulative impacts, and thereby fails to comply with the EIS Rules, Title 11, Chapter 200, Section 17 (g) and (i).

Sanitary Sewer System

According to this section, page 66, wastewater will be treated at the Honolulu Wastewater Treatment Plant. This document does not state how much wastewater the project will generate. Because of the cumulative impacts caused by increased growth in Central Oahu and Ewa, it is important that the issue of wastewater generation be fully addressed in the Draft EIS.

Presently, Honolulu STP is near its operating capacity of 25 mgd; the first phase of expansion is not scheduled to be completed until 1993, when an additional capacity of 13 mgd will be available. According to page 11, the "project is expected to be completed over a three year period beginning 1991." If Honolulu is unable to accept the waste load generated by Waiola Estates, have any alternatives been developed?

Drainage System

We believe that a master storm water drainage plan should be included in the Draft EIS. The information provided by this document is inadequate:

- Surface runoff will be discharged into five off-site locations. Where are these sites located; what are their effective capacities; will there be any impacts on these sites?
- What methodology was used in order to determine the amount of storm water generated; what will the sediment loading be during the 10-year and 50-year storm?

Mr. John Whalen
and Dr. Marvin Miura

-4-

April 24, 1989

Public Facilities

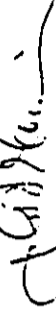
Fire Protection:

A new fire station is planned for Waikale area. If Waikale is delayed, how will this affect the fire protection for Waiola?

Extensive revisions are necessary to remedy the deficiencies of this Draft EIS. In its present form, it falls far short of content requirements specified in the EIS rules for a Chapter 343 document. Because of these shortcomings, we suggest that the present DEIS be withdrawn and rewritten, and then resubmitted for public review.

Thank for the opportunity to comment on this Draft Environmental Impact Statement.

Yours truly,



John Harrison
Environmental Coordinator

cc: DRCD
Environmental Communications ✓
L. Stephen Lau
Paul Ekern
Peter Flachsbart
Yu-Si Fok
C. Anna Ulaszewski

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

810 SOUTH KING STREET, 25TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 935-4322



FRANK FAN
MAYOR

WHEEN SCARFONE
DIRECTOR
WILLIAM BARRICK
DEPUTY DIRECTOR

May 2, 1989

Mr. John Harrison
Environmental Coordinator
University of Hawaii
Environmental Center
Crawford 317
2550 Campus Road
Honolulu, Hawaii 96822

Dear Mr. Harrison:

Subject: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Maioia Estates) Subdivision

We have received your office's comments dated April 24, 1989 on the Draft EIS. Our staff and consultants have reviewed the comments and provide the following responses:

1. General Comments

The location of the Amfac-Waikele project immediately adjacent to the project site dictates that certain physical improvements common to both projects, i.e., drainage be coordinated in planning/design. The need to address the schedule of the Waikele project in relation to this project in the EIS was noted by an agency responding to the EIS preparation notice. To address this concern, we did mention whether a delay in the Waikele schedule for specific infrastructure improvements would affect the Kipapa Ridge project.

We cannot agree with your opinion that the level of detail in the Draft EIS is insufficient to assess the project impacts and the adequacy of proposed mitigative measures. We are meeting to the best of our ability the requirements of Chapter 343, Hawaii Revised Statutes and regret that you feel that the DEIS is deficient.

2. Archaeological Characteristics

We did not include the 1985 field report by Chiniago, Inc., as an appendix in the current EIS because it was a verbal report of no significant findings. The State DLMR/SHPO advised in its comments of April 7, 1989, that the project will have "No Effect" on significant historic sites, as the project area has been in agricultural production for many years.

Mr. John Harrison
May 2, 1989
Page 2

3. Air Quality - Short-term and Indirect Impacts of Project Construction

We agree with your statement that "comparison of air pollutants generated by construction equipment with vehicular emissions from nearby roadways is not justified since the effect of any additional air pollutants will be cumulative."

4. Topographic Characteristics

Soil: In the section on erosion hazard on page 24, the "natural landscape" is taken to mean the slope or terrain features which if disturbed severely through extensive grading or excavation can lead to erosion. Page 17's statement that erosion will occur if not protected refers to a situation where if hydromulching or other soil retentive materials are not placed on freshly excavated acreage, the potential for runoff or erosion is compounded by the lack of protection. If the site is developed as proposed, proper erosion control procedures will be observed.

Climate: The landscaping plans for the basic subdivision common areas, the public park space and the par-3 golf course will be finalized by the consultants and the Department of Parks and Recreation. Care will be taken in the selection of low water consuming plant material which will be easy to maintain for these areas.

A study by Gordon L. Dugan (July 1986, pp.1, "Environmental Aspects of Storm Water Runoff") indicated that evapotranspiration for the site is expected to be nearly 70 inches per year based on previous studies using accurately measured lysimeters and long-range pan evaporation (Lau et al., 1974).

5. Hydrological Characteristics

Revised water requirement figures will be included in the Final EIS. The potable water demand is estimated to be .850 mgd and the non-potable irrigation demand to be .172 mgd. The Draft EIS statement regarding the non effect of this project on the sustainable yield recognizes the fact that the spring source to be developed at the HECO Haiau power plant is not calculated as part of the sustainable yield. If the Kipapa Ridge project water needs were proposed to be served by drilling new wells, the effect on the Pearl Harbor aquifer would have to be addressed.

Mr. John Harrison
May 2, 1989
Page 3

6. Sanitary Sewer System

The final determination of sewer flow rates has not been made but preliminary calculations estimate the volume to be approximately .430 mgd. This will be subject to change as the project continues through the land use approval process. The Department of Public Works is monitoring sewage hookups in relation to the Honolulu Treatment Plant's capacity and is aware of the Kipapa Ridge project's schedule. Alternatives to the Honolulu Treatment Plant are not under consideration at the present time.

7. Drainage System

The preliminary drainage master plan has been approved by the City Department of Public Works. Further, coordination of drainage plans with the adjacent Mailele subdivision will also occur. We will include in the Final EIS the preliminary drainage plan as well as an analysis prepared by Gordon L. Dugan, Ph.D., entitled "The Environmental Aspects of Storm Water Runoff (July 1986) contained in the earlier 1986 EIS. The latter study was for a larger project, without the benefits of the par-3 golf course on the project site, and concluded that adequate measures could be taken to mitigate any potential impacts due to sediment loading, bioicides and heavy metals. One of the proposed mitigative measures will be the use of the par-3 golf course on the perimeter of the project adjacent to the Kipapa Gulch.


The drainage report shows the five discharge locations for the project. Capacities have not been determined as the specific design has not been finalized. Any impacts will be minimized by proper design. The methodology used to determine the storm water generated is in accordance with Department of Public Works procedures. Sediment loading is discussed in the Dugan study.

8. Public Facilities

Fire Protection: The Fire Department has indicated that adequate support services exist at Pearl City and Milliani Stations to provide coverage at Kipapa Ridge Estates. Construction of the planned Mailele Fire Station will improve response time for Kipapa Ridge.

Thank you for your comments.

Sincerely,



MICHAEL H. SCARFORE, Director

LU 7/89 1575

JOHN WILSON
Director
'89 MAR 16 AM 10 16
DEPT OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS
P. O. BOX 115, HONOLULU, HAWAII 96813

MUSSEL S. HAGATA
COMPTROLLER
DEN ETIASEU
SENIOR COMPTROLLER
LETTER NO. (P)1232.9

DLU/OEQC
Page 2

Ltr. No. (P)1232.9

provide alternate routes from Waiola to the proposed school in Waikale.

Should there be any questions, please have your staff contact Mr. Cedric Takamoto of the Planning Branch at 548-5742.

Very truly yours,

Teuane Tomimaga
TEUANE TOMINAGA
State Public Works Engineer

CT:jnt
cc: Department of Housing and Community Development, C&C
Mr. Fred Rodriguez, Environmental Communications
Mr. Eugene Imai, DOE

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

Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Gentlemen:

MAR 14 1989

Subject: Waiola Estates Subdivision
Draft Environmental Impact Statement

We have reviewed the subject document and have the following comments to offer:

1. Figure 3 - Project Site Plan
The 5-acre site shown for a future elementary school is too small to accommodate the needs of the Department of Education. We recommend setting aside 8 acres of land with a generally rectangular shape having an ideal length to width ratio of 1.5:1.0.
2. Section VII, Subsection I., Item 1. - Schools
The section should be expanded to include mitigation measures for each of the DOE alternatives. For example, if students are sent to Kanoelani Elementary, provisions should be considered for vehicular/pedestrian traffic across Kamehameha Highway.
3. General
We recommend close coordination with the adjacent Waikale Subdivision to incorporate a network of interconnecting streets which would alleviate the congestion on Kamehameha Highway. This would also

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 BOWLING STREET, 3TH FLOOR
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PHONE 527-4427



FRANK KASI
DIRECTOR

MICHAEL H. SCARFONE
DIRECTOR

MORIMU KANAMA
DEPUTY DIRECTOR

April 4, 1989

Mr. Teuana Tomimaga
Division of Public Works
Department of Accounting and
General Services
P. O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Tomimaga:

Subject: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Maioia Estates) Subdivision

We have received your agency's comments dated March 14, 1989 on the Draft Environmental Impact Statement (DEIS). We respond as follows:

1. Figure 3 - Project Site Plan

We will be working closely with the State Department of Education (DOE) to resolve the noted discrepancy of adequate school site size when the school site is in preliminary land planning. At this time, the DOE has no firm position on development of this school site.

2. Section VII, Subsection 1, Item 1. - Schools.

Similarly, we will coordinate this aspect of site development with the State DOE. To the extent practicable within the fiscal constraints of the project development costs, we will examine that final selected site in accordance with the concerns of DOE and DAGS as well as the Department of Transportation (DOT).

3. General

Please be assured that we will make every effort to ensure close planning coordination with the Waikale development. We share your concern that there will be technically correct circulation patterns for both Waikale and Kipapa Ridge (Maioia) Estates. In regards to the ability of the interior street systems to alleviate congestion on Kam Highway, we will be reviewing this with the State DOT as well as our own City Department of Transportation Services.

Thank you for your comments.

Sincerely,

Michael H. Scarfone
for MICHAEL H. SCARFONE, Director



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
1008 KAPOLANI BLVD., SUITE 1004
HONOLULU, HAWAII 96813
TELEPHONE 541-5900
(808) 541-7012

March 26, 1989

C-189-0015

Dr. Marvin Miura, Director
Office of Environmental Quality Control
465 S. King St., Room 104
Honolulu, Hawaii 96813

Subject: Draft EIS: Waiola Estates Subdivision, Waipi'o, O'ahu. TRK: 9-4-07:1

Dear Dr. Miura:

Thank you for sending our office a copy of the Draft EIS, and for the opportunity to comment.

Our office is concerned about the routine procedure of giving archaeological clearance to development projects in agricultural areas. Two important kinds of sites that might be found in such areas are human burial sites and deeply buried early habitation sites, even in areas where plowing and other land disturbing activities have destroyed all evidence of surface sites. Another kind of archaeological resource that can be found in disturbed areas is soil layers that provide a stratigraphic record of environmental changes. Such remains may seem insignificant when compared with better preserved sites elsewhere, but they may also contain fragmentary clues to such interesting problems as the dates for early settlement in Hawaii. It should not be taken for granted that there is nothing of archaeological interest in the project area. We recommend that project work plans and scopes-of-work include provisions for contacting the State Historic Preservation Office whenever human bones, charcoal deposits, stone artifacts and other kinds of archaeological remains are discovered during construction.

Sincerely,

Richard K. Paglinawan
Richard K. Paglinawan
Administrator

RRP:EN:klr

cc: DLNR/Historic Sites
DLU/City and County of Honolulu
DHCDE/City and County of Honolulu
Environmental Communications
Environmental Center/U.H.
Anthropology Dept./U.H.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

830 SOUTH KING STREET, 21ST FLOOR
HONOLULU, HAWAII 96813
PHONE 533-4427



FRANK PESH
11-11-89

MICHAEL N. SCARFONE
DIRECTOR
MIRIAM KEMMEL
DEPUTY DIRECTOR

April 11, 1989

Mr. Richard K. Paglinawan, Director
State of Hawaii
Office of Hawaiian Affairs
1600 Kapiolani Boulevard
Honolulu, Hawaii 96814

Dear Mr. Paglinawan:

Subject: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Waiola Estates)
Subdivision

We have received your comments dated March 28, 1989. The concerns that you express in your letter will be duly noted by the staff and consultants who will be working on the project site plans, so that they can exercise due caution and attention to potential archaeological sites. Further, our construction specifications require that the contractor cease all construction related activities when archaeological remains are uncovered, and notify the State Historic Preservation Office immediately.

Thank you for your response.

Sincerely,

Michael N. Scarfone
MICHAEL N. SCARFONE
Director

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



FRANK F. PASTOR
DIRECTOR

DONALD A. CLEGG
CHIEF PLANNING OFFICER

GENE CONNELL
DEPARTMENT OF GENERAL PLANNING OFFICER

MH/DGP 3/89-886

April 25, 1989

APR 26 1989

MEMORANDUM

TO: JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: DONALD A. CLEGG, CHIEF PLANNING OFFICER
DEPARTMENT OF GENERAL PLANNING

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED WAIOLA ESTATES SUBDIVISION, WAIPIO, OAHU
TAX MAP KEY 9-4-07: 1

The Department of General Planning has reviewed the above referenced Draft Environmental Impact Statement (DEIS) and offers the following comments:

General Plan Conformance

The proposed Waiola Estates project will provide affordable housing and recreational opportunities to the general public in conformance with General Plan policies and objectives related to housing and recreation. While the project area is presently in agricultural use, Castle and Cooke has indicated that the project will not affect production or jobs as other surplus lands have been located that will replace any lost acreage.

The Central Oahu Development Plan area has reached its population ceiling based on the General Plan population distribution guidelines. A waiver under Section 201(E) will be required.

Development Plan Conformance

The project site is presently designated Agriculture on the Development Plan (DP) Land Use Map for Central Oahu. The project would require a change in DP designation in order to reflect the uses proposed.

John P. Whalen, Director
Department of Land Utilization
Page 2
April 25, 1989

The Development Plan Public Facilities Map does indicate certain proposed public facility improvements to be located on the Waiola Estates site, however, these proposed facilities are associated with regional infrastructure improvements or with the adjacent Waialeale project. The DP Public Facilities Map would need to be amended to appropriately identify those public facilities necessary to support the Waiola Estates project.

Should a waiver under Section 201(E) be granted, the Waiola Estates would not be required to conform to Development Plan guidelines.

Infrastructure Issues

The Final EIS should address system capacities for water, sewage treatment and traffic as well as identify, where necessary, appropriate mitigating measures. The Final EIS should also address the possible realignment of Kamehameha Highway fronting the proposed site. The realignment of the highway and the construction of the project should be integrated in order to resolve any possible design conflicts.

Conclusion

There are certain General Plan and Development Plan issues related to this project. These issues could be rendered moot through the granting of a Section 201(E) waiver. Infrastructure issues should be addressed in the Final EIS.

DAC:lh

cc: Office of Environmental Quality Control
Department of Housing and Community Development
Fred Rodriguez, Environmental Communications, Inc.

Donald Clegg
DONALD A. CLEGG
Chief Planning Officer

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

830 SOUTH KING STREET, 3TH FLOOR
HONOLULU, HAWAII 96813
PHONE 533-4227



FRANK P. KAHU
MAYOR

MICHAEL H. SCARFONE
DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

Memorandum to Donald A. Clegg
May 1, 1989
Page 2

3. Infrastructure Issues

The appropriate agencies have been notified of the proposed project. The Department of Public Works has indicated that there is adequate sewage treatment capacity at the Honolulu Wastewater Treatment Plant for this project and a potable water source has been identified at the HECO Waiuu power plant. The traffic impact analysis addresses highway capacity and recommends mitigating measures. We will be working closely with the adjacent Amfac, inc., project at Waikale to insure that timing and design are coordinated for Kamehameha Highway improvements in order to minimize duplication of effort and maximize benefits of capital investment. Similar coordination will occur for other infrastructure systems.

Conclusion

We concur with your findings and will be relying on your assistance as this project proceeds through the land use approval process.

Thank you for your timely comments and continuing assistance.

Michael H. Scarfone
MICHAEL H. SCARFONE
Director

May 1, 1989

MEMORANDUM

TO: Donald A. Clegg, Chief Planning Officer
Department of General Planning

FROM: Michael H. Scarfone

SUBJECT: Draft Environmental Impact Statement
Kipapa Ridge Estates (Maioia Estates) Subdivision
Waipio, Oahu
Tax Map Key: 9-4-07: 1

We have received your Department's comments dated April 25, 1989 on the subject document and we respond as follows:

1. General Plan Conformance

It is anticipated that at the appropriate time, a waiver from the General Plan population guidelines under Section 201E-210, Hawaii Revised Statutes, will be prepared and submitted to public agencies for review and comment and subsequently to the City Council for review and approval. As you are aware, we are preparing the State Land Use Commission petition for redesignation of the Agricultural district boundary to Urban. Upon approval, we will begin processing the exemption request.

2. Development Plan Conformance

We may also exercise the prerogative of applying for a Section 201E(E) exemption from the Development Plan requirements.

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU

450 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 522-6131



FRANK P. WEAVER
DIRECTOR

JOHN P. WHALEN
DIRECTOR

WILLIAM S. LEE
DEPUTY DIRECTOR

LU3/89-1376(MBEM)

April 24, 1989

MEMORANDUM

TO: MICHAEL N. SCARFONE, DIRECTOR
DEPARTMENT OF HOUSING & COMMUNITY DEVELOPMENT

FROM: JOHN P. WHALEN, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR
WAIOLA ESTATES SUBDIVISION, WAIPIO, EWA, OAHU
TAX MAP KEY 9-4-07: 01

We have reviewed the DEIS for the Waiola Estates Subdivision and have the following comments:

1. Alternative Agricultural Use, p. 19
Reference should be made to Appendix B for the summary listing of crops considered to have an agronomic potential on the Waiola lands.
2. Ground Water, p. 25, and State Water Resources Development Plan, p. 40

In light of recent information regarding the sustainable yield capacity of the Pearl Harbor aquifer, and a 13 percent reduction in yield, (see Honolulu Advertiser, Monday, April 17, 1989, p. A-1), will the Waiola Estates development have more of an impact than what was previously anticipated on the aquifer and the development of Ewa?

3. Water Quality, p. 27

Reference is made to a table showing water quality data for Kipapa Stream for the period 1973-75. No table exists. In addition, updated water quality data from the gauging station should be provided.

MEMO: MICHAEL N. SCARFONE, DIRECTOR
Page 2

4. Air Quality, p. 33-34

Mention should be made that nitrogen dioxide monitoring at Sand Island has been discontinued. Dates of studies of measurement for particulates, sulfur dioxide, lead, carbon monoxide, and ozone should be provided.

5. Proposed Golf Course.

What fertilizers and pesticides will be used on the golf course? What impacts will they have on the Pearl Harbor aquifer?

6. Consideration of Comments Made by Agencies and Organizations During the DEIS Consultation and Preparation Notice Comment Period.

- a. Comments made during the Preparation Notice Comment Period should be responded to either by incorporation of the responses into the Final EIS or by letter (with point-by-point responses) appended to Section XIII.
- b. Comments made during the DEIS Period should be responded to either by incorporation of the responses into the Final EIS or by letter (with point-by-point responses) appended to Section XIV.
- c. If the responses are incorporated in the text, please note where in the Final EIS (by section and page number) the concerns are addressed.

If there are any questions regarding these comments, please call Maureen St. Michel of our staff at 527-5349.

JPM:s1
0253N

John P. Whalen
JOHN P. WHALEN
Director of Land Utilization

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

830 SOUTH KING STREET, 21ST FLOOR
HONOLULU, HAWAII 96813
PHONE 521-4427



FRANK P. FISH
DIRECTOR

MICHAEL H. SCARFONE
DIRECTOR
IRVING K. KAMATA
DEPUTY DIRECTOR

Memorandum to John P. Whalen
May 1, 1989
Page 2

May 1, 1989

MEMORANDUM

TO: John P. Whalen, Director
Department of Land Utilization

FROM: Michael H. Scarfone

SUBJECT: Draft Environmental Impact Statement (DEIS)
Kipapa Ridge Estates (Maioa Estates) Subdivision
Haipio, Ewa, Oahu
Tax Map Key: 9-4-07: 01

We have received your Department's comments dated April 24, 1989 on the subject project and we respond as follows:

1. Alternative Agriculture Use, p. 19
We have included the reference to Table 3 of Appendix 8 on page 19.
2. Ground Water, p. 25 and State Water Resources Development Plan, p. 40
The potable water source for Kipapa Ridge has been identified as spring water at HECO's Maiau power plant which will not affect the sustainable yield of the Pearl Harbor aquifer.
3. Water Quality, p. 27

We have included in the Final EIS the table referenced in the narrative section as well as the requested updated information, and pH factor. The other parameters currently available is Discharge (cfs) regular basis. The other parameters are not being tested for on a

4. Air Quality, p. 33-34

We acknowledge the deletion of nitrogen dioxide monitoring at Sand Island by the State Department of Health.

The State DOH conducted studies in 1985, 1986 and 1987 for the following pollutants: particulates, sulfur dioxide, lead, carbon monoxide, and ozone. These are tabulated on pp. 18, 19, 20, 21 of Appendix E in Tables 1, 2, and 3.

5. Proposed Golf Course

All chemicals to be used on the proposed golf course will be of the type prescribed and approved by the Federal Environmental Protection Agency for such use. The anticipated impacts on the Pearl Harbor aquifer should not be of a magnitude greater than the agricultural usage at present.

6. Consideration of Comments Made by Agencies and Organizations During the DEIS Consultation and Preparation Notice Comment Period

a, b, c. We will be responding to all comments received within the 45-day review period. These responses with the comments will be appended to the Final EIS together with the earlier comments and responses on the EIS Preparation Notice.

Michael H. Scarfone
for
MICHAEL H. SCARFONE
Director

PB 89-210

March 13, 1989

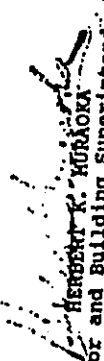
MEMO TO: JOHN WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
FOR WAIOLA ESTATES SUBDIVISION

We have reviewed the subject DEIS and have no comments to offer.

Thank you for the opportunity to review the Draft EIS.


HERBERT K. MURAOKA
Director and Building Superintendent

RM:jo
cc: J. Harada
Housing & Comm. Develop. Dept
Environmental Communications, Inc.

NO RESPONSE NEEDED

MAR 17 1989

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



FRANK FASI
DIRECTOR

SAM CALLEJO
DIRECTOR AND CHIEF ENGINEER
ENV 89-41

March 23, 1989

TO: JOHN P. WALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
WAIOLA ESTATES SUBDIVISION
TRK: 9-4-07: 1

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

1. A sewer master plan should be submitted to the Planning Section, Division of Wastewater Management for review so that the adequacy of the existing sewer lines can be determined.
2. The Waikale Development will be connected to the 15-inch sewer line on Palua Street not the Milliani Effluent Disposal System as stated in the DEIS.
3. Also, future effluent discharge requirements (by EPA) for the Honolulu WWS may require us to disallow connection of the project. We have applied and received tentative approval of our request for a waiver from secondary treatment requirements. The proposed waiver discharge permit, which is tentatively scheduled to be issued later this year, contains effluent quality and maximum flow limits that should not be exceeded during the five-year life of the permit. If these limits are surpassed, we may be required to disallow connections to avoid permit violations and possible loss of the waiver.

cc: Department of Housing & Community Development
Environmental Communications, Inc.
DEQC

Sam Callejo
SAM CALLEJO
Director and Chief Engineer

APR 4 1989

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
630 SOUTH KING STREET, 3TH FLOOR
HONOLULU, HAWAII 96813
PHONE: 522-4227



FRANK FASI
DIRECTOR

MICHAEL N. SCARFONE
DIRECTOR
FRANK RAMAKA
DEPUTY DIRECTOR

April 5, 1989

MEMORANDUM

TO: Sam Callejo, Director and Chief Engineer
Department of Public Works

FROM: Michael N. Scarfone

SUBJECT: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Waiola Estates)
Subdivision

Your Department's comments dated March 23, 1989 have been reviewed by our staff and we respond as follows:

1. A sewerage master plan is under development by our civil engineering consultant and will be provided to your Wastewater Management Division for review and approval.
2. The correct sewer connection for the Waikale project will be duly noted in the Final EIS.
3. We acknowledge the Federal intervention into future effluent discharge requirements and will abide by your Department's directions regarding connections.

Thank you for your prompt review of the Draft EIS.

Michael N. Scarfone
MICHAEL N. SCARFONE
Director

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



FRANCIS PASH
 DIRECTOR

WALTER H. OZAWA
 DIRECTOR

April 17, 1989

Dr. Marvin Miura, Director
 Office of Environmental Quality Control
 State of Hawaii
 Kekuanaoa Building, Room 104
 465 South King Street
 Honolulu, Hawaii 96813

Dear Dr. Miura:

Subject: Environmental Impact Statement (EIS)
 Maioia Estates Subdivision - Ewa
 Tax Map Key: 9-4-07:1

We have reviewed the Environmental Impact Statement for the proposed Maioia Estates Subdivision and offer the following comments and recommendations:

The 42-acre park site will be adequate to serve the recreational needs of the proposed Maioia Estates project.

We recommend that the 42-acre site be reclassified to a regional park. The reclassification will allow our department to provide additional facilities and programs to also serve the Maipio-Gentry, Crestview-Waipahu and proposed Waikale communities.

Thank you for the opportunity to comment on the EIS.

Sincerely,

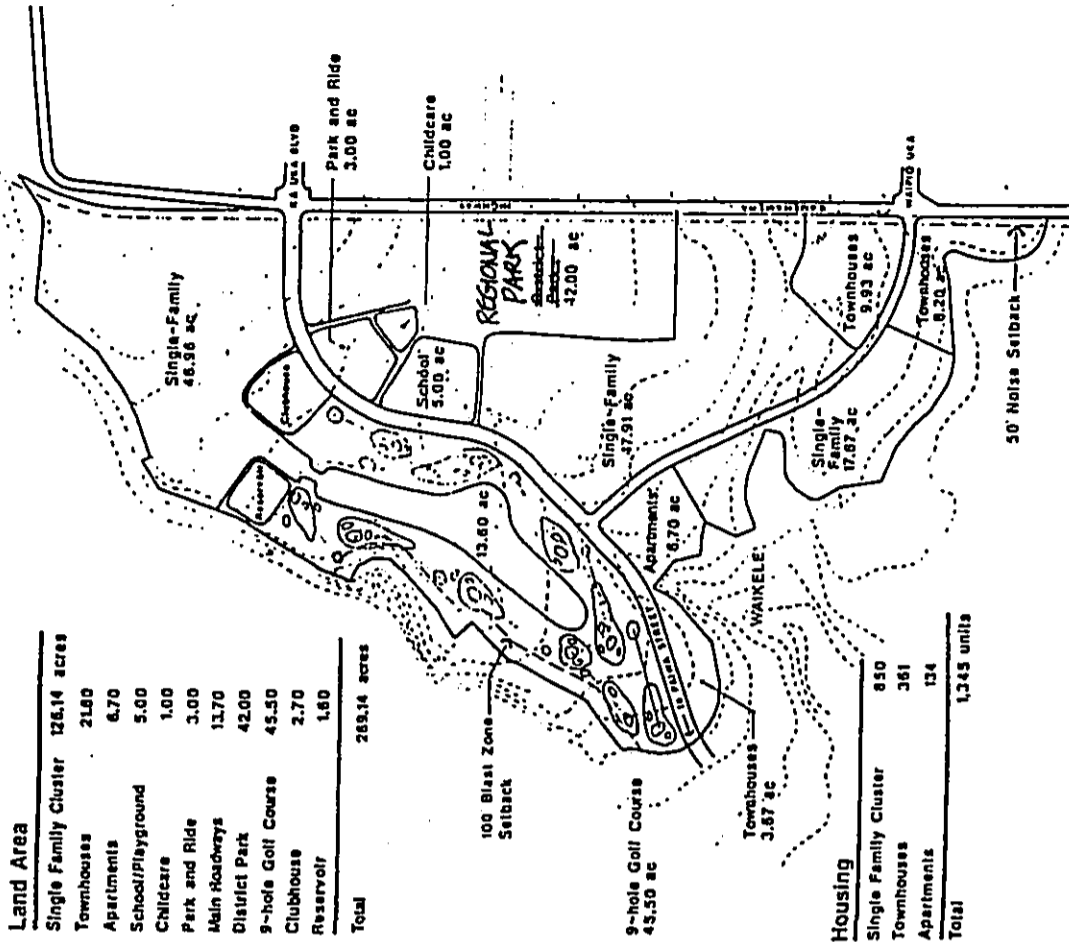
Walter H. Ozawa
 WALTER H. OZAWA, Director

WMO:JF

Attach.

cc: Environmental Communications, Inc.
 Department of Land Utilization
 Department of Housing and Community Development

APR 21 1989



February 21, 1989
WAIOLA ESTATES
PROJECT SITE PLAN
 FIGURE 3
 0 200 400 800
 North
 Graphic Scale in Feet

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

4105 DUMFRIES STREET, 31ST FLOOR
HONOLULU, HAWAII 96813
PHONE 323-4427



MICHAEL N. SCARFONE
DIRECTOR
PLANNING DIVISION
HONOLULU, HAWAII
PHONE 323-4427

April 24, 1989

MEMORANDUM

TO: Walter M. Ozawa, Director
Department of Parks and Recreation

FROM: Michael N. Scarfone

SUBJECT: Draft Environmental Impact Statement (DEIS)
Kipapa Ridge (Waiala Estates) Subdivision

We have received your Department's comments dated April 17, 1989 on the Draft EIS. We will adopt your recommendation that the 42-acre park site be reclassified to a regional park.

Thank you for your timely response. We look forward to your input during the design phase.

MICHAEL N. SCARFONE
Director



COPY



COPY

March 22, 1989

Marvin T. Miura, Ph.D.
Page 2
March 22, 1989

Marvin T. Miura, Ph.D.
Director
Office of Environmental Quality
Control
State of Hawaii
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Dr. Miura:

Subject: Your Letter Received on March 8, 1989 on the
Environmental Impact Statement (EIS) for Waiala
Estates Subdivision

We have the following comments on the proposed project:

1. Please make the following corrections in Section V,
Part C, 1) "Ground Water" of the EIS:

- a. The first paragraph should be changed to read:
"The project site is located over the Pearl
Harbor basal lens aquifer. The groundwater
head in the aquifer is between 12 to 20 feet
above mean sea level. Groundwater, in general,
should not be a problem in the project area
since water in the basal aquifer is
approximately 280 to 405 feet below the
surface."

- b. The second sentence in the third paragraph
should be corrected to read: "There are places
where this caprock cover is not particularly
thick and an average of approximately 50 mgd of
groundwater leaks out as spring discharge."

- c. The second sentence in the fourth paragraph
should be corrected to read: "Water levels
rise rapidly when draft diminishes significantly."

2. Our previous comments on the project dated January 11,
1989, and which is published in Section XI of the EIS,
are still valid and applicable to the project.

If you have any questions, please contact Lawrence Whang at
527-6138.

Very truly yours,
Kazu Hayashida

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Dept. of Housing and Community Development
Environmental Communications, Inc.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

410 SOUTH KING STREET, 27TH FLOOR
HONOLULU, HAWAII 96813
PHONE 213-4427



FRANK FARI
MAYOR

MICHAEL N. SCARFONE
DIRECTOR
HAWAIIAN HOMES
DEPARTMENT

April 17, 1989

MEMORANDUM

TO: Kazu Hayashida, Manager and Chief Engineer
Board of Water Supply

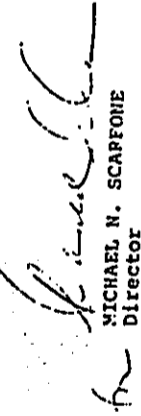
FROM: Michael N. Scarfone

SUBJECT: Draft Environmental Impact Statement (DEIS)
Kipapa Ridge Estates (formerly Waioala Estates)
Subdivision

We have received your Agency's comments dated March 22, 1989 on the DEIS prepared for the Kipapa Ridge Estates subdivision. Our staff and consultants have reviewed the comments and respond as follows:

1. Corrections to the section on ground water as requested will be made in the Final EIS.
2. Previous comments made on January 11, 1989 will be observed and complied with.

Thank you for your timely review of the-Draft EIS.


MICHAEL N. SCARFONE
Director

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
1425 K. WAIKIKIA STREET, ROOM 202
HONOLULU, HAWAII 96814



FRANK F. FAST
MAYOR

FRANK E. KAHOOHANOHANO
FIRE CHIEF
LIONEL E. CAMARA
DEPUTY FIRE CHIEF

FRANK F. FAST
MAYOR



MICHAEL N. SCARFONE
DIRECTOR
FRANK E. CAMARA
DEPUTY DIRECTOR

March 17, 1989

April 5, 1989

TO: JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION
HARVIN HIURA, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
FROM: FRANK K. KAHOOHANOHANO, FIRE CHIEF
SUBJECT: WAIOLA ESTATES SUBDIVISION
ENA, OAHU, TRK: 9-4-07:1

MEMORANDUM
TO: Frank K. Kahooohanano, Fire Chief
Fire Department
FROM: Michael N. Scarfone
SUBJECT: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Waiola Estates)
Subdivision

We have reviewed the subject material provided and foresee no adverse impact in Fire Department facilities or services, planned or now provided. We have no additional comments at this time
Should you have any questions, please contact Battalion Chief Kenneth Mord of our Administrative Services Bureau at 943-3838.

We have received your comments dated March 17, 1989 and acknowledge your determination that you "foresee no adverse impact in Fire Department facilities or services, planned or now provided."

Thank you for your prompt review of the Draft FIS.

Frank K. Kahooohanano
FRANK K. KAHOOHANOHANO
Fire Chief

Michael N. Scarfone
MICHAEL N. SCARFONE
Director

FKK/AL:bn
cc: Michael Scarfone, Director
Dept. of Housing & Community Development
Fred Rodriguez
Environmental Communications, Inc.

MAR 20 1989

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

1433 SOUTH BERKELEYA STREET
HONOLULU, HAWAII 96813 AREA CODE 808/535-3111

FRANK P. PAH
MAYOR



DOUGLAS G. GIBB
CHIEF
WARREN ROSENZWEIG
DEPUTY CHIEF

John P. Whalen, Director
March 22, 1989
Page 2

OUR REFERENCE SS-1C

March 22, 1989

Thank you for allowing us to comment on this matter.

DOUGLAS G. GIBB
Chief of Police
BY *Joseph Aveiro*
JOSEPH AVEIRO
Assistant Chief of Police

TO: JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: DOUGLAS G. GIBB, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR
THE MAIOLA ESTATES SUBDIVISION
TMK: 9-4-07: 1. EWA, OAHU

Attachment

cc: Office of Environmental Quality Control
Department of Housing and Community
Development
Environmental Communications, Inc.

We have reviewed the above EIS and would like to provide the following comments:

1. We refer you to our January 9, 1989 response to Michael N. Scarfone, Director of the Department of Housing and Community Development, as it reflects our primary concerns. See attached copy.
2. As mentioned in the EIS, the proposed highway improvements to Kamehameha Highway and the completion of the Waipio Interchange which is expected to mitigate many of the traffic problems currently experienced and anticipated for the Maiola Estates, will alleviate our concern.

We also support the recommendations made by the traffic consultants to deal with the anticipated impact to Interstate Route H-1/Kamehameha Highway corridor in Pearl City.

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

1415 SOUTH BERKELENA STREET
HONOLULU, HAWAII 96813-3111



FRANK P. PAI
MAYOR

DOUGLAS G. GIBB
CHIEF
HONOLULU POLICE DEPARTMENT
DEPUTY CHIEF

OUR REFERENCE SS-LK

FRANK P. PAI
MAYOR

January 9, 1989

TO: MICHAEL N. SCARFONE, DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: DOUGLAS G. GIBB, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES
(ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
(EISP) FOR THE PROPOSED WAIOLA ESTATES SUBDIVISION
SITUATED IN WAIPIO, OAHU

We have reviewed the EISP for the above-referenced project and would like to offer the following comments.

During the construction phases of the project, we recommend that adequate safety and environmental health measures be taken to minimize hazardous conditions to passing motorists and nearby residents.

As the Waiola Estates project develops and more people move into the area, we can expect that additional manpower will be needed to accommodate the increased calls for service.

In addition, we can expect that, with added vehicles on the roadways, there will be increased traffic congestion on Kamehameha Highway and Interstate H-1 and H-2. It is hoped that the widening of Kamehameha Highway and the new interchanges planned and under construction will help to ease the flow of traffic.

According to the project plans, a park-and-ride facility will be included in the development. We recommend that further study be conducted to develop incentives for motivating residents to use this and other park-and-ride facilities being developed on the island.

Thank you for the opportunity to offer comments.

DOUGLAS G. GIBB
Chief of Police

By
RONALD SOUZA
Assistant Chief of Police
Support Services Bureau

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

150 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE 523-4437



MICHAEL N. SCARFONE
DIRECTOR
MIKAMA KAWATA
DEPUTY DIRECTOR

April 17, 1989

MEMORANDUM

TO: Douglas G. Gibb, Chief of Police
Honolulu Police Department

FROM: Michael N. Scarfone

SUBJECT: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Waiola Estates)
Subdivision

Your Department's comments dated March 22, 1989 have been received. We acknowledge your statement that proposed highway improvements to Kamehameha Highway and the completion of the Waipio Interchange will alleviate your concerns and your statement of support for the traffic consultant's recommendations.

Thank you for your assistance.

MICHAEL N. SCARFONE
Director



William A. Bonnet
Manager
Environmental Department

ENV 2-1
JA/G

April 13, 1989

Dr. Marvin T. Miura, Ph.D., Director
State of Hawaii
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Dr. Miura:

Subject: Environmental Impact Statement (EIS) for Waiola Estate
Subdivision

We have reviewed the subject EIS and note that HECO has an existing 46 KV and 12 KV overhead pole line traversing the Waiola (Northern) half of the development (see Attachment 1). If this pole line is to be relocated out of the development, the developer is to coordinate this matter by contacting Ms. Alice Lam at 543-7846 of HECO's Customer Planning Division of the Distribution Engineering Department. If the pole line is to remain during construction of the development, the following HECO notes are to be included in the EIS:

1. The Contractor is to exercise extreme caution when the excavation and construction cross or are in proximity to HECO lines and is to maintain a minimum of 13'-0" clearance for his equipment while working close to and/or under overhead facilities.
2. The Contractor shall comply with the State of Hawaii's Occupational Safety and Health Law (DOSH).
3. When trench excavation is adjacent to or beneath existing HECO structures or facilities, the Contractor is responsible for:
 - a. Sheeting and bracing the excavation to prevent slides, cave-ins and settlements.
 - b. Protecting existing structures or facilities with beams, struts, or under-pinning.

An HEI Company

APR 17 1989



Mr. Marvin Miura, Director
April 13, 1989
Page 2

4. If pole bracing is required, the Contractor shall call the HECO District Construction Superintendent at Waiola, phone 455-6223 a minimum of 72 hours in advance.
5. Any work required to relocate HECO facilities shall be done by HECO, and the Contractor shall be responsible for all coordination and costs incurred.
6. Should it become necessary to temporarily relocate any HECO facilities to enable the contractor to perform his work in a safe and expeditious manner in fulfilling his contract obligations, these temporary relocations will be done by HECO, or by the contractor under HECO's supervision, with all costs borne by the contractor.
7. Any damage to HECO's facilities will be reported immediately to HECO's Trouble Dispatcher at phone 543-7838.
8. All HECO overhead and underground facilities shown on these plans, or whose approximate locations within the project boundaries have been made known by any reasonable means at any time to the contractor, shall be protected at all times by the contractor during construction. Costs for damages to HECO facilities shall be borne by the Contractor. This repair work shall be done by HECO, or by the contractor under HECO's supervision.

Sincerely,

W. A. Bonnet

Attachment

cc: City and County of Honolulu
Dept. of Land Utilization

Mr. Michael N. Scarfone, Director
City and County of Honolulu
Dept. of Housing & Community
Development

Mr. Fred Rodriguez
Environmental Communications, Inc.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR
HONOLULU HAWAII 96813
PHONE 833 4437



FRANK FARI
DIRECTOR

April 18, 1989

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

Dear Mr. Bonnet:

Subject: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Waioa Estates)
Subdivision

We have received your Company's comments dated April 13, 1989 on the Draft Environmental Impact Statement (DEIS). Your comment on the possibility of relocating the existing 46 KV and 12 KV overhead pole line traversing the northern half of the development will be addressed during the final site planning phase, after the land use approval portion of the project is completed. At that time, we will be in contact with HECO staff to resolve this issue.

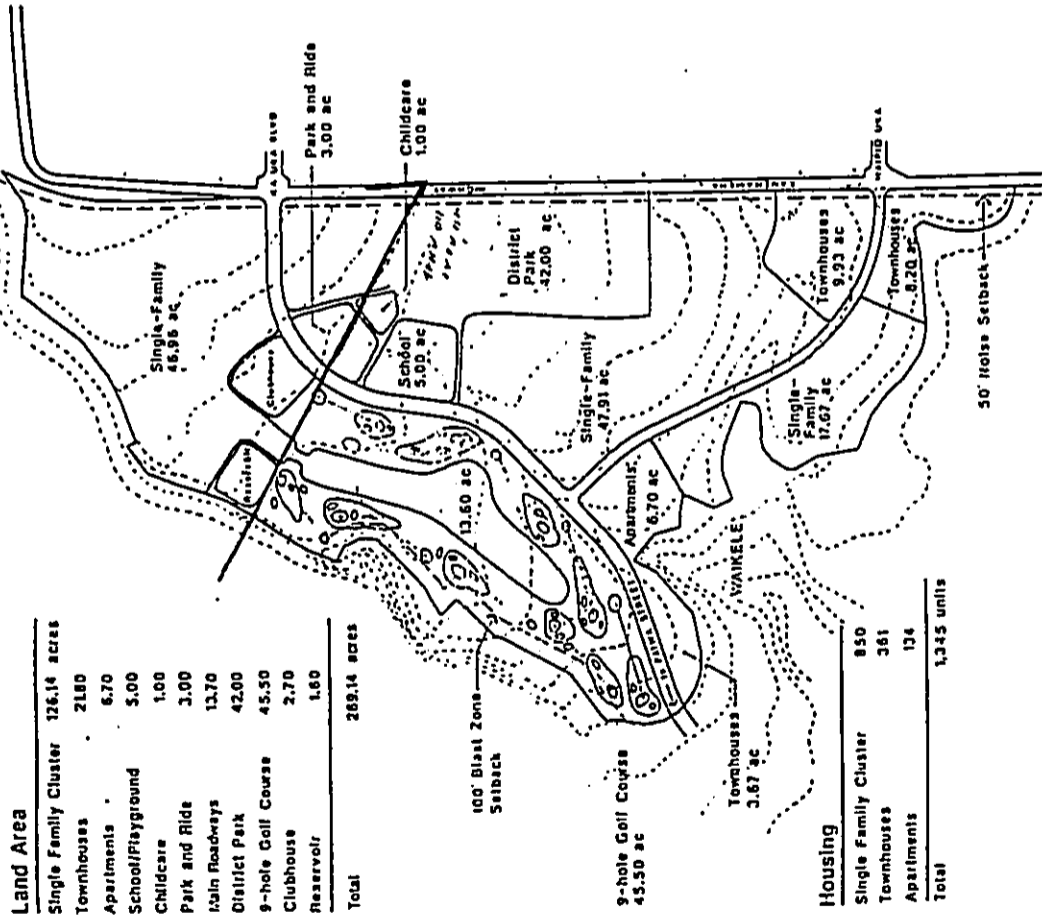
Our response to the balance of your comments is similar to our response to your comments on the EIS Preparation Notice. Your concerns will be addressed by including appropriate instructions in our construction documents.

Thank you for your timely and thorough review of the Draft EIS.

Sincerely,

[Signature]
MICHAEL N. SCARFONE
DIRECTOR

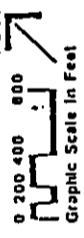
ATTACHMENT 1



Land Area	126.14 acres
Single Family Cluster	2180
Townhouses	6.70
Apartments	5.00
School/Playground	1.00
Childcare	3.00
Park and Ride	13.70
Main Roadways	42.00
District Park	45.50
9-hole Golf Course	2.70
Clubhouse	1.60
Reservoir	
Total	289.14 acres

Housing	1,345 units
Single Family Cluster	850
Townhouses	361
Apartments	134
Total	1,345 units

February 23, 1989



WAIOLA ESTATES
PROJECT SITE PLAN

FIGURE 3

For Information

AMERICAN LUNG ASSOCIATION OF HAWAII
245 North Kukui Street
Honolulu, Hawaii 96817

April 24, 1989

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

Gentlemen:

Subject: Draft Environmental Impact Statement for the
Proposed Maioia Estates Subdivision

We have reviewed the subject EIS with particular attention to the sections addressing air quality and offer the following comments:

1. Page 3, 2nd paragraph: The statement is made that NO2 represents only a long-term health hazard, hence the annual standard. We would comment that in recent years there has been considerable research and discussion about the need for a short-term NO2 standard because of its short-term effects. We would therefore recommend some elaboration if statements are made in an EIS about the potential health effects of NO2.
2. Appendix E (Air Quality Study): Table 1 on page 10 lists federal TSP standards which were repealed in 1987.

Yours truly,

James M. Morrow
Director
Environmental Health

JMM:ict
L8913

cc: DHCP
OECC
Environmental Center
Environmental Communications, Inc.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
410 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE 933 4427



FRANK P. FARNSWORTH

MICHAEL N. SCARFONE
DIRECTOR
MARK W. HANAKA
DEPUTY DIRECTOR

May 2, 1989

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

Dear Mr. Morrow:

Subject: Draft Environmental Impact Statement
Kipapa Ridge Estates (Maioia Estates) Subdivision

We have received your office's comments dated April 24, 1989 on the Draft EIS prepared for the Kipapa Ridge Estates (Maioia Estates) Subdivision. We respond to these comments as follows:

1. Discussion with the State Department of Health on the need for a short-term NO2 standard indicated that at the present time, "there is no valid need for a short-term standard." Based on DOH findings to date, residential subdivisions like the proposed project will not be of sufficient concern in terms of automobile emissions as a source of NO2. There are no industrial stack emissions in the immediate vicinity of the project site, and the only potential source would be automobile emissions that result from a zero wind condition for a prolonged period of at least 24 hours.
2. The air quality consultant has been advised that the Federal TSP standards have been repealed in 1987.

Thank you for your comments.

Sincerely,
Michael N. Scarfone
MICHAEL N. SCARFONE
Director

APR 25 1989

CORRECTION

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

RECEIVED AS FOLLOWS

For Information

AMERICAN LUNG ASSOCIATION OF HAWAII
245 North Kukui Street
Honolulu, Hawaii 96817

April 24, 1989

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

Gentlemen:

Subject: Draft Environmental Impact Statement for the
Proposed Maioia Estates Subdivision

We have reviewed the subject EIS with particular attention to the sections addressing air quality and offer the following comments:

1. Page 3, 2nd paragraph: The statement is made that NO2 represents only a long-term health hazard, hence the annual standard. We would comment that in recent years there has been considerable research and discussion about the need for a short-term NO2 standard because of its short-term effects. We would therefore recommend some elaboration if statements are made in an EIS about the potential health effects of NO2.

2. Appendix E (Air Quality Study): Table 1 on page 10 lists Federal TSP standards which were repealed in 1987.

Yours truly,

James W. Morrow
Director
Environmental Health

JWM:ct
L8913

cc: DHCH
DEDC
Environmental Center
Environmental Communications, Inc.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

630 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE 933-4227



FRANK FARI
MAYOR

MICHAEL N. SCARFONE
DIRECTOR
FRANK KAWAHA
DEPUTY DIRECTOR

May 2, 1989

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

Dear Mr. Morrow:

Subject: Draft Environmental Impact Statement
Kipapa Ridge Estates (Maioia Estates) Subdivision

We have received your office's comments dated April 26, 1989 on the Draft EIS prepared for the Kipapa Ridge Estates (Maioia Estates) Subdivision. We respond to these comments as follows:

1. Discussion with the State Department of Health on the need for a short-term NO2 standard indicated that at the present time, "there is no valid need for a short-term standard." Based on DOH findings to date, residential subdivisions like the proposed project will not be of sufficient concern in terms of automobile emissions as a source of NO2. There are no industrial stack emissions in the immediate vicinity of the project site, and the only potential source would be automobile emissions that result from a zero wind condition for a prolonged period of at least 24 hours.

2. The air quality consultant has been advised that the Federal TSP standards have been repealed in 1987.

Thank you for your comments.

Sincerely,
Michael N. Scarfone
MICHAEL N. SCARFONE
Director

APR 25 1989.



March 21, 1989

To whom it may concern:

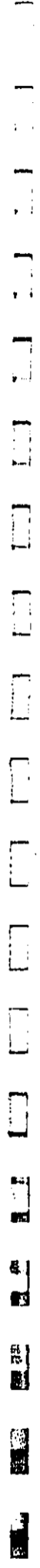
We, at the Ewa Beach Public & School Library, would like to thank you for sending a copy of the Waioala Estates Subdivision EIS Draft to us. We and our patrons have found it informative and interesting. In the past, other reports have been used to answer reference questions and the information in this report will also be useful. Once again, thank you very much.

Sincerely,
Wanda Enomoto
Wanda Enomoto
Emergency-hire Adult Services
Librarian

NO RESPONSE NEEDED

MAR 29 1989

91-950 NORTH ROAD, EWA BEACH, HAWAII 96706 TEL. 689-8391





CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII 96813 / TELEPHONE 523-4000

PRIME MINISTER
AS SIGNED BY THE PRIME MINISTER

April 24, 1989

TO: Mayor Frank F. Fasi

FROM: Councilmember Rene Mansho *R. Mansho*

RE: Analysis of Draft EIS on Waiola Estates Subdivision
March 1989

15
33
22
P4:01

PLUS FACTORS

Additional Housing with golf course, regional park, child care center, park and ride and rental units for the elderly in current plan.

MINUS FACTORS

Planned since 1986. Wasn't acceptable to the community then, and isn't now.

Increased traffic in already overloaded area. Kam Hwy. would experience an 8.6% increase in inbound traffic demand as a result of the proposed project. Kam Hwy., north of Waipahu Street, would experience a 7.8% increase in PM peak hour traffic.

Residents of the 1,345 dwelling units proposed for the project will generate an annual demand for electrical energy of about 6.6 million kilowatt hours. In the worst case this demand would be met by burning additional fuel oil in existing power plants.

By serving as an attraction for increased motor vehicle traffic, Waiola Estates must be considered to be a potentially significant indirect air pollution source.

Widening Kam Hwy and making four-way signalized intersections at these sites raises expected worst case morning peak hour carbon monoxide concentrations to allowable State of Hawaii limits.

Analysis of Draft EIS/Waiola Estates Subdivision contd.

PLUS FACTORS

MINUS FACTORS

Any proposed project along the H-1 corridor which has the potential to increase traffic volumes can only serve to intensify the magnitude of air pollution.

Peak eight hour levels of carbon monoxide will be increasing at some uncertain rate as the length of each "rush hour" increases to two to three hours.

Future traffic noise levels are expected to be in the "Significant Exposure, Normally Unacceptable" noise exposure category along the Waiola Estates Right-of-Way which fronts Kam Hwy.

To meet the water needs of the proposed development, onsite and offsite facilities must be developed.

The Department of Education has indicated that the proposed project may generate highly increased enrollment in Waipahu Intermediate and Waipahu High. Both are operating at capacity.

The project development will result in a commitment of land for a long term period, which will likely foreclose certain future use options of irreplaceable, prime Ag land.

The need for utility services will increase, along with total local waste output.

Originally 80% of the housing was intended for gap group and low/mod income people. Revised project provides for only 60% and 40% to be sold at market value (which means exorbitant prices not within the means of most people.).

CONCLUSION: Minus factors far outweigh plus factors. Against best interests of surrounding communities. Recommend re-locating proposed subdivision.



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII 96813 / TELEPHONE 523-4000

RENE MANSHO
MAYOR

APR 24 1989
10 10 AM

April 4, 1989

The Honorable Frank F. Fasi, Mayor
City and County of Honolulu
City Hall
530 S. King Street
Honolulu, Hawaii 96813

Dear Mayor Fasi:

My staff and I have been actively involved with the progress of the proposed Waiola Estates Subdivision project. We have attended all five of the presentations your staff has made to various Neighborhood Boards and Associations.

For your information to include in the final EIS, I am enclosing the many letters and petitions I've received to date, as well as a summary of the meetings.

What I have concluded is that there is an obvious lack of support for the project - not for affordable housing, but, rather, that particular site.

We who live in Central Oahu don't want to lose the beautiful vista of the Waianae Range Mountains and coastline as you drive south on Kam Hwy.

Also, as an elected official, I cannot support losing our prime agriculture land that produces the sweetest pineapple in the world.

I hope that you will abide by the consensus of the people of Central Oahu and reconsider an alternate site to provide affordable homes.

Sincerely,

Rene Mansho

Rene Mansho
Councilmember District I

RN/jc

Enclosures

ENCLOSURES DIRECTORY to letter dated April 1, 1989 to the Honorable Frank F. Fasi regarding the proposed Waiola Estates Subdivision

1. Analysis of Draft EIS on Waiola Estates Subdivision (March 1989).
2. Copy of letter dated April 13, 1989 opposing Waiola project to the Mayor from Gentry-Waipio Community Association.
3. Copy of letter dated July 28, 1989 opposing Waiola project to the Land Use Commission, State of Hawaii, from Gentry-Waipio Community Association.
4. Copy of letter dated February 14, 1989 opposing Waiola project to Arnold Morgado, Chair, City Council from Millilani Town Association.
5. Copy of letter dated March 22, 1989 to the Mayor from Millilani Town Association expressing concerns with regard to the social impact of the Waiola Estates project.
6. Copy of letter dated September 23, 1988 rejecting Waiola Estates project to Donald Clegg, Chief Planning Officer, Dept. of General Planning from Waipahu Community Association.
7. Copy of letter dated March 7, 1989 opposing Waiola project to Councilmember Rene Mansho from concerned citizen Frances Hirashima.
8. Copy of letter dated March 8, 1989 opposing Waiola project to Mike Scarfone, Dept. of Housing and Community Development from the Hawaii Society of the American Institute of Architects.
9. Copy of Memo to the Director of the Department of Health, John Lewin from the Office of State Planning, dated October 24, 1988.
10. Copy of Memo dated August 4, 1988 to Roger Ulveling, Director of the Department of Planning and Economic Development voicing "serious concerns regarding groundwater contamination that may result from conversion of agriculture lands" to urban housing.
11. Copy of Memo dated February 1, 1989 to Mike Scarfone from Deputy Director for Environmental Health, stating concerns regarding Waiola.
12. Letter dated January 23, 1989 to Mike Scarfone from Office of State Planning.
13. Five-page report of concerns expressed at five community organizations after presentation on Waiola Estates Subdivision by Mayor's Office: Millilani Neighborhood Board, Wahiawa Neighborhood Board, Waipio Community Association and Waipahu Community Association.
14. Justification Sheet Draft dated January 9, 1989 relating to a bill for land use act.
15. Newspaper clippings of editorials and articles on Waiola project.

(4)
-3C

GENTRY WAIPIO COMMUNITY ASSOCIATION

Mr. Mayor
04/13/89
Page 2.

April 13, 1989

The Honorable Frank F. Fasi
Mayor
City and County of Honolulu
Honolulu Hale
Honolulu, Hawaii 96813

Dear Mayor Fasi:

Subject: Waiola Estates Presentation to the
Gentry-Waipio Community Association

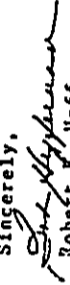
This is to express our appreciation for your staff's presentation and to summarize the reaction of the attendees.

As you know the Gentry-Waipio Community Association has strongly opposed the development of Waiola Estates (Kipapa Ridge Estates) since it was first proposed in 1986. The attitude of the Community has not changed. This fact was much in evidence during Iiram Kamaka's presentation at our Annual Meeting of the General Membership, held Wednesday, March 29th.

Our members conveyed to Mr. Kamaka their personal sentiments first hand. In their comments, they voiced strong concern over the traffic problems facing them and other nearby communities. In respect to the infrastructure to support the development, the educational system was foremost. They believe there is no coordinated effort between developers and the Department of Education other than allocating land for a proposed school. The overall impression is that Government planners wait until the system overloads before the planning begins.

Our members also believe that you are completely disregarding the concerns that have been expressed for the last two and one-half years. This was a point highlighted to Mr. Kamaka that Wednesday evening. In fact one member's comment extolled the frustrations felt deep within the Community. He stated: "If you would send one message to the Mayor - that the people in Waipio, that live here, are not interested in Waiola."

Sincerely,


Robert E. Heffernan
General Manager

cc: Councilmember
Rene Mansho

President
Board of Directors

GENTRY WAIPIO COMMUNITY ASSOCIATION

LAND USE COMMISSION
July 28, 1988
Page 2.

July 28, 1988

LAND USE COMMISSION
DEPARTMENT OF BUSINESS AND
ECONOMIC DEVELOPMENT
STATE OF HAWAII
335 Merchant Street
Honolulu, Hawaii 96813

Attn: Ms. Esther Ueda
Executive Officer

Subject: Proposed Waiola Estates Project
Docket No. A88-623

Dear Commissioner's:

On behalf of a community of over 3,000 households, the Gentry-Waipio Community Association submits this testimony in opposition to the request by the Department of General Planning, City and County of Honolulu, to reclassify approximately 269.454 acres of land currently in the Agricultural District into the Urban District at Waiola, Ewa, Oahu, Hawaii for a residential subdivision - Waiola Estates. We present our position from the prospective of the community most impacted by the prospective of location - just across the street.

As a result of the city's administration decision to again pursue the Waiola Estates Project, the Association's Board of Directors sought and received a response from the members. This response exceeded 30 percent or 827 households. Additionally, over 100 concerned members volunteered to assist the Board to achieve an acceptable solution. In a "nut shell", our members voiced their opposition based on a lowering of their property values, creating more traffic in an area where grid lock is in evidence every morning and evening and on the city's past performance developing housing projects.

The following exhibits are provided to the Commissioner's for reference:

1. Letter to the Land Use Commission dated 11/24/86.
2. Testimony presented at the Land Use Commission Meeting of December 2, 1986
3. The letter to our members explaining the city's administration newest proposals.
4. Survey form.
5. The results of the survey.

Based on the Community's belief that Waiola Estates will adversely affect surrounding residential communities the Gentry-Waipio Community Association urges the Commission to turn down the City's request for the change in land use classification.

Very truly yours

GENTRY-WAIPIO COMMUNITY ASSOCIATION

Paul J. Cathcart
By: Paul J. Cathcart
Its President

94-515 Uke'e Street, No. 15 Waipahu, Hawaii 96797
671-2272

GENTRY WAIPIO COMMUNITY AREA ASSOCIATION

c/o Gordon J. Mau
1000 Bishop Street, Suite 303
Honolulu, Hawaii 96813

November 24, 1986

State of Hawaii
Department of Planning and
Economic Development
Land Use Commission
335 Merchant Street
Honolulu, Hawaii 96813

Attention: Ms. Ester Ueda, Executive Director

Re: Waiola Estates Subdivision
Docket No. A86-606
Exhibit Three

Dear Sirs:

Please be advised that the Gentry-Waipio Community Association is strongly opposed to the Waiola Estates Subdivision. The Gentry-Waipio Community Association circulated petitions in the Gentry-Waipio community and to a limited extent, the Mililani, Waipahu, Crestview and Seaview communities. As of November 18, 1986, there are 3,874 verified signatures on file at the City Clerk's office. An additional 492 signatures are on file at our Association office. These signatures were not submitted as they arrived after the City Council debate on Waiola.

The language of the petitions read as follows:

"We, the undersigned members of the Gentry-Waipio Community Association and other concerned voters and taxpayers of the City and County of Honolulu, oppose the development of the Waiola Estates Project by the City and County of Honolulu's Department of Housing and Community Development.

For government to consider approving a project of this magnitude without considering its impact on the surrounding communities or giving the communities an opportunity to express its concerns is highly irresponsible. In addition to the obvious impact of this project on the neighboring communities must be considered. This project and its concentration of people in a certain income group is contrary to the Department of Housing and Community Development's policy of spreading this income group throughout the entire community.

We urge the City Council to take whatever action is necessary to prevent the development of the Waiola Estates Project."

The Gentry-Waipio Community Association urges the commission to turn down the City's request for change in land use classification.

State of Hawaii
Department of Planning and
Economic Development
November 24, 1986
Page 2

Please mark this letter as Exhibit Three for the Intervening party, Neighborhood Board No. 25.

Very truly yours,

GENTRY-WAIPIO COMMUNITY AREA ASSOCIATION

By *[Signature]*
Its Secretary

E-1

GENTRY WAIPIO COMMUNITY ASSOCIATION

Land Use
Commission
Page 2

This testimony has been prepared for presentation to the State of Hawaii Land Use Commission proceedings scheduled to begin at 9:00 a.m. December 2, 1986.

Re: Docket Number A86-606

Petitioner Department of General Planning, City and County of Honolulu

Project Waiola Estates

The purpose of this testimony is to express the position of the Gentry-Waipio Community Association concerning the City's proposed Waiola Estates housing project. Due to the considerable adverse response received from our 8,000 member community, the Board of Directors voted, at their meeting of May 14, 1986 to oppose the proposed project based on the following reasons:

1. Unfair Concentration of One Housing Need Group in the Waipahu Area - We are informed that a Department of Housing and Community Development (DHCD) study revealed a disproportionate concentration of low to moderate income housing in the Waipahu area. Locating the City's proposed project in Waipahu only serves to compound the negative implications of the DHCD's study. Further, this disproportionate concentration is in direct conflict with the Oahu General Plan policy which encourages the distribution of low to moderate income families throughout Oahu. Finally, the massing of such a housing group at the proposed site is in stark contrast to the adjacent communities of Hillilani and Gentry Waipio which are characterized by the diverse housing group profiles.
2. No Thorough Study has been Undertaken to Assess the Project's Impact - The proposed project should be carefully scrutinized to assess its potential social, economic and environmental effect on adjacent communities and existing public facilities and services.
3. Failure to Seek Community Input - The failure of the City Administration and the Department of Housing and Community Development to inform our community of its plans and seek community input is a callous disregard of the rights of the members of our community.

4. Project Location - Central Oahu living requires costly automobile expenses and commuting. Either the Primary Urban Center, being closer to the major employment center or the Eva Plain, where Campbell Estate desires to attain a critical mass to permit the development of a Secondary Urban Center are more logical areas to locate this project.

94-515 Uke'e Street, Ho. 15 Waipahu, Hawaii 96797
671-2272

E-2

GENTRY WAIOLOA COMMUNITY ASSOCIATION

WAIOLOA ESTATES UPDATE

Dear Member:

On Saturday, May 14, Mayor Frank Fasi announced that the City and County would be resubmitting the petition to the State of Hawaii Land Use Commission to develop the Waioala Estates housing project on the Ewa side of Kamehameha Highway, adjacent to Waipio by Gentry.

In a briefing to Covenant Manager, Bob Jefferson and me, City and County Managing Director, Jeremy Harris, presented two conceptual proposals for the subdivision. They are outlined as follows:

Concept Number One

- 1,452 single family dwellings
- Land set aside for a school and a park
- A 50 foot buffer strip along Kamehameha Highway

Concept Number Two

- A total of 1,335 dwelling units
 - 845 single family units
 - 300 townhome units
 - 190 apartment units
- An 18 hole par three golf course
- Day care center
- Park and ride facility
- Land set aside for a school and a park
- A 50 foot buffer strip along Kamehameha Highway

Under both concepts 40% of the units will be sold at current market prices, with the remaining 60% sold at below market prices for "Gap Group" families (the Gap Group is a term applied to families whose income is too high to qualify for subsidized rental housing but too low to qualify for a mortgage). In this case the Gap Group was described to be in the 80-120 percentile of median income (for a family of 4, the income range would be between \$29,000 and \$40,000).

As for highway improvements, Kamehameha Highway would be widened to four lanes and the completion of the Waipio Interchange in February 1990 should coincide with the opening of Waioala's first phase.

The primary difference between the currently proposed two concepts and what was proposed last year are (1) no low income units are proposed this year and (2) a golf course, child care center and park and ride facility is currently proposed.

Your Board of Directors would like to know how you feel about the City Administration's new concepts for Waioala Estates so that feedback can be presented to the City's decision makers. Please take the time to complete the enclosed survey and return it in the post paid envelope provided. Please do this not later than July 15.

Thank you for your interest and response!

Mahalo

Paul J. Cothcart
Paul J. Cothcart
President
Board of Directors

WAIOLA ESTATES
SURVEY

1. If Waiola Estates is to be developed, which concept would you prefer?

Concept One Concept Two

2. Do you feel the proposed unit mix of 40% selling at market value and 60% selling below market value will have an adverse impact on Waipio by Gentry?

Yes No

3. Briefly state your reasons for your response in question 2.

4. If you answered yes to question 2, what mix would you recommend?

Market Gap Group

5. Do you feel the City and County is capable of developing Waiola Estates in a manner that will enhance Waipio by Gentry and the planned Waialeale Subdivision by AHFAC?

Yes No

6. If you answered no, can you state why you feel that way?

7. Since Kamehameha Highway will be converted to four lanes and the Waipio Interchange will be operational, do you feel it would benefit traffic flow on Kamehameha Highway to have the Waipahu On-Ramp to H-1 (near Leeward Community College) increased to two lanes?

Yes No

8. Do you have any other concerns over Waiola Estates?

9. Would you be willing to assist your Board of Directors in defining and working for an acceptable solution for Waiola Estates development?

If you would, please include the following information.

Name _____
Address _____
Telephone _____ Residence/Work _____

PLEASE NOTE:

For the Board to be responsive to this issue, we need a timely response to the survey. The Board will be meeting the evening of July 20 to discuss this issue. For your response to be most effective it should be received not later than Friday, July 15.

Why not include your dues payment also. Timely dues payments will help us to operate efficiently and effectively.

GENTRY WAIPIO COMMUNITY ASSOCIATION

WAIOLA ESTATES SURVEY RESULTS

This survey was mailed to 2,735 members of the Association. As of July 27, 827 survey forms were returned. This response rate, of 30.23 per cent indicates the concern our residents have over the proposed development. It also shows that the vast majority of our members are strongly opposed to the project!

The survey was constructed with five questions designed for the member to make a choice between two responses. Three questions solicited a narrative response and the final question, number 9, asked: "Would you be willing to assist your Board of Directors in defining and working for an acceptable solution for Waioala Estates development?" Of the 827 members responding, 111 or 13.2 per cent volunteered their services.

The survey results are:

1. If Waioala Estates is to be developed, which concept would you prefer?

Concept One	Concept Two	Neither	No Choice
352	372	78	25

2. Do you feel the proposed mix of 40% selling at market value and 60% selling below market value will have an adverse impact on Waipio by Gentry?

Yes	No	No Choice
653	132	42

3. Briefly state your reasons for your response in question 2.

The overwhelming majority indicated a fear of the devaluation of their property. This was followed by compounding of the already saturated traffic corridor, with comments on crime and the inability of the service infrastructure to support it.

4. If you answered yes to question 2, what mix would you recommend?

Number of Votes	Market	Percentage	Gap
30	0	0	100
1	20	20	80
6	40	40	60
4	50	50	50
2	55	55	45
67	60	60	40
3	65	65	35
40	70	70	30
32	75	75	25
46	80	80	20
1	85	85	15
25	90	90	10
374	100	100	0

Note: The number of responses that did not have a choice selected was 196

5. Do you feel the City and County is capable of developing Waioala Estates in a manner that will enhance Waipio by Gentry and the planned Waikole Subdivision by AHFAC?

Yes	No	No Choice
208	559	60

6. If you answered no, can you state why you feel that way?

Here, the majority felt the government should not be in the development business. This was followed by a poor track record and that Waioala was political.

7. Since Kamehameha Highway will be converted to four lanes and the Waipio Interchange will be operational, do you feel it would benefit traffic flow on Kamehameha Highway to have the Waipahu On-Ramp to H-1 (near Leeward Community College) increased to two lanes?

Yes	No	No Choice
659	97	71

8. Do you have any other concerns over Waioala Estates?

Again, most members responded with their concern over the loss of value of their homes, traffic, crime and a lack of confidence in the city administration.

Milliani Town Association
95-303 Kaloapau Street
Milliani Town, Hawaii 96789
Telephone (808) 623-7300



March 22, 1989

Honorable Frank F. Fasi, Mayor
City and County of Honolulu
Honolulu, Hawaii 96813

Dear Mayor Fasi,

The Milliani Town Association wishes to express its concerns with regard to the social impact of the Malola Estates Project.

Although the Association has jurisdiction only over the common area of Milliani Town, it is our consensus that the proposed Malola Estates Project will have a negative impact on the following areas:

1. Open Space. This development will cause residents to lose the remaining open space vista leading to Mahiawa. This area should remain in agriculture to maintain the open space presently enjoyed by residents living in the Central Plains.
 2. Traffic. The traffic impact on Kamehameha Highway, taking into consideration the improvements thus far detailed will still create a bottleneck through Kipapa Gulch.
 3. Resources. This development will place added stresses on the local resources, to include water (who's to provide the added purification system, if necessary?), schools (who will build the additional school facilities?), etc.
 4. Home Ownership. Affordable homes at subsidized prices with a short ten year buy-back policy, in an area close to developments with affordable dwellings at non-subsidized prices, should not be the signal we send to the people of Hawaii, as the City's policy on home ownership.
- In conclusion, the development of the Malola Estates Project is not in the best interest of either the residents of Hawaii or resources available in the area, and therefore, should not be pursued.

Sincerely,

MILLIANI TOWN ASSOCIATION

Eric H. Hatsumoto
Eric H. Hatsumoto, President

EMH/gss

cc: Councilmember Rene Hansho
Senator Ron Heno
Representative Daniel Kihano
Representative Samuel Lee
Fritz McKenzie, Chair, Neighborhood Board #25

Handwritten notes:
MK/JC
copy to...
3/23/89

Milliani Town Association
95-303 Kaloapau Street
Milliani Town, Hawaii 96789
Telephone (808) 623-7300



February 14, 1989

Honorable Arnold Morgado, Chair
City Council
City & County of Honolulu
Honolulu, Hawaii 96813

Dear Chairman Morgado,

The Milliani Town Association wishes to express its concerns with regard to the resolution that is before the committee as a whole. Milliani Town Association is not in favor of allocating funding for the Environmental Impact Statement for the proposed Malola Estates Development.

Although this association is responsible for the common area of the community of Milliani, the proposed development of Malola Estates will definitely have an impact on the following:

1. The approved development of the Milliani Hauka Project.
2. The traffic impact on Kamehameha Highway be resolved - four lanes narrowing down to two lanes will create a bottleneck situation at Kipapa Gulch.
3. The new proposed development of affordable homes - prices of the so-called affordable homes will no longer be affordable.
4. The resources of the area - water, facilities, etc. need to be improved.

Thank you for allowing us to express our concerns.

Sincerely,

MILLIANI TOWN ASSOCIATION

Eric H. Hatsumoto
Eric H. Hatsumoto, President

EMH/gss





"REPRESENTING ALL THE PEOPLE OF WAIPAHU"

Waipahu Community Association

HONOLULU FEDERAL SAVINGS AND LOAN BUILDING
34-229 WAIPAHU DEPOT STREET
WAIPAHU, HAWAII 96797
TELEPHONE 671-4350

Mr. Donald Clegg
Chief Planning Officer
Dept. of General Planning
650 South King Street
Honolulu, HI. 96813

Dear Mr. Clegg:

On September 13, 1988, the Waipahu Community Association's Board of Directors noted to support the Gentry-Waipio Community Association's recommendation to reject the city's proposed Waiola Estates Project. This action is based upon the result of that community's survey of its residents vis a vis the project.

The MCA has been on record as supporting the need for adequate affordable housing. However, it has also recognized the legitimate concerns of our residents over the problems of traffic.

We encourage and support the concept and action of planned development as contained in the proposed amendments to the General Plan of the City and County of Honolulu through the year 2010, the 1988 annual Amendment Review to the Development Plan for Eva and Central Oahu, and the City Council's amendments to the DP for Central Oahu, Waianae, and the Primary Urban Center. Furthermore, we strongly support the population increases therein.

We look forward to continuing to be an active participant in the development process.

Sincerely Yours,

Clarence K. Nishihara

Clarence K. Nishihara
President

cc: Chairman of Gentry Waipio Community Association
Chairman of Waipahu HB #22, Mr. James Gee
Div. of State Planning, Chairman Robert J. Rauson, Jr.
Chairman of Eva HB, Richard Deamer

September 23, 1988

Rene Manaho, City Council
530 S. King
Honolulu, HI: 96813

March 7, 1989

Dear Rene,
I have written to Mayor Fasi and the Land Use Commission. Apart from the horrible traffic congestion we suffered a couple of weeks ago, Mayor Fasi's attitude about developing Waiola/Kipapa is especially upsetting. I think that this development is not properly timed considering the overcrowded elementary school in our area and the traffic.

Why do we have to develop the prime agricultural land? Can't that come later when we have used the other alternatives? I appreciate your stand against funding the study and hope you can convince

MAR 13 1989

Misc. Com. No. 3C

(
the other council members
to be less eager to develop
without regard to the
quality of life of the people
who live in these
developments.

Best wishes for your
continued success.

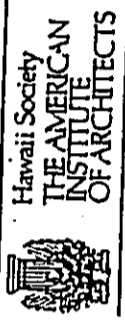
Sincerely,
Frances Hoashima

94-1020 Augusti St.
Waiapahu, HI. 96797

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HONOLULU, HAWAII

Manoa

so
Jeff



March 22, 1989

The Honorable Arnold Morgado, Jr.
and Members of the City Council
City & County of Honolulu
530 S. King Street
Honolulu, Hawaii 96814

Subject: Department of Housing & Community Development
FY 1989-90 CIP Budget Requests

Dear Chairman Morgado and Council Members:

The Hawaii Society/AIA has reviewed the budget requests and an outline of the proposed developments put forth by the Department of Housing and Community Development and have the following comments.

We support the following projects based on current information available to us:

Park Place, Kekaulike Parking Lot, Foster Gardens Estates (on both the Toyo Theatre and Hosoi/Borthwick sites) and the Kailua Elderly Housing Project.

We support the concept of placing housing on the Maunakea-Smith site but, as our attached letter to Mr. Scarfone indicates, we feel the density, and more importantly, the height of the project are major problems with it as proposed.

We support the concept of placing elderly housing at the Manoa site, but consideration must also be given to the already limited vehicular access to Manoa Valley and the possible needs of the area for more recreation space.

Haw. Com. No. 463

MAR 28 1989 1125 Nuuanu Avenue • Honolulu, Hawaii 96817 • Telephone (808) 545-4322

HSG cc members and FG



The Honorable Arnold Morgado, Jr.
and Members of City Council
March 22, 1989
Page 2

We would like to hold comment on the Waiikina Elderly Housing, West Lock Bluffs, and Hale Oia and Ewa Villages until we have had more opportunity to review the plans for these areas. We feel that all the Ewa projects are consistent with the plans to direct growth to that area.

(12) 8/9/89
The Waiioa (Kipapa Ridge Estates) project is not consistent with the General Plan limits for population growth in Central Oahu, as projects already approved by Council use up the allotment for this area. It is not consistent with good planning to violate the population limit for this area so soon after its recent refinement. We must oppose this project for this reason.

Thank you for this opportunity to testify.

Sincerely yours,


Carol Sakala, AIA
President



8 March 1989

Mr. Mike Scarfone
Department of Housing and Community Development
City & County of Honolulu
630 South King Street
Honolulu, Hawaii 96813

Subject: Smith-Maunakea Housing

Dear Mr. Scarfone:

The Hawaii Society/American Institute of Architects appreciates having had the opportunity to review the schematic design plans and model for the Smith-Maunakea project. We are pleased to offer the following comments.

The proposed design solution reconciles the various design issues involved - functional space requirements, human scale, view corridors, historic context and so forth - as practically and sensitively as possible given the parking and housing requirements programmed for the site. However, the program for the site works against other imperatives that need to be addressed if the historic low-rise character of Chinatown and its historic link to the waterfront are to be preserved.

As our Society has previously testified, it is imperative that the forty foot height limit of the Chinatown core district be maintained clear to the harborfront area of Maunakea Street and the Schnack Block in order to preserve that character and that historic link. Diamond head of Maunakea Street, the height may be stepped up to limit of seventy-five feet as a transition to downtown and in recognition of differing heights and uses on the corresponding portion of King Street.

To allow heights significantly greater than these is to allow the encirclement of Chinatown by tall structures to continue. In our view, Chinatown as we know it cannot survive such encirclement.

We certainly recognize that the existing structures on the Smith-Maunakea site have no preservation value and well could make way for new and better designed structures in keeping with the character of the area. We are also sympathetic to goals of providing new housing and adequate parking. We recognize that the City and County has limited sites available, and limited means to acquire new ones, to meet these goals.

Nonetheless, the irremediable change in the character of Chinatown that would result from proceeding with the Smith-Maunakea project as currently conceived is too great a

consequence to suffer in pursuit of those goals. We urge the City and County to consider other options.

Thank you for the opportunity to review and comment on the proposed project. We would appreciate continuing to be apprised and involved as plans for the site evolve.

Sincerely,

Carol S. Sakata
Carol S. Sakata, AIA
President, Hawaii Society

cc: Benjamin Lee, Deputy Director DLU
Phyllis Fox, President, Historic Hawaii Foundation
Michael Chu, ASLA
Don Hibbard, Preservation Director, DLMR



OFFICE OF STATE PLANNING

Office of the Governor

STATE CAPITAL, HONOLULU, HAWAII 96813 TELEPHONE: (808) 525-3471

NOV 3 1988

File

With Board

October 24, 1988

TKK.
9-4-07:1

MEMORANDUM

TO: The Honorable John Lewin, Director
Department of Health

ATTN: Kelvin Sumada

SUBJECT: State Land Use Commission Decision and Order on the
Reclassification Petition by the Department of
General Planning, City and County of Honolulu,
Docket No. A88-623 (Malolo Estates)

Enclosed for your information is a copy of the Land Use Commission's Decision and Order for the subject petition. The Commission has denied the reclassification of approximately 269.5 acres to the Urban Land Use District, therefore the property remains in the Agricultural District.

We appreciate the continuing assistance and participation of your department in the review stages of this petition and at the Land Use Commission hearings. Special thanks go to Dr. Bruce Anderson and Mr. David Higa.

Harold S. Tomimoto
Harold S. Tomimoto
Director

Enclosure

cc: Dr. Bruce Anderson, DOI
Mr. David Higa, DOI



FILE COPY

Honorable Roger Ujveling
August 2, 1988
Page 2

Air Pollution

The air quality assessment conducted by Barry D. Root for the Waiola Estates Subdivision and revised January 1987 concluded that the exceedances of the State one-hour and eight-hour carbon monoxide standards may occur as a result of the proposed project and other projects already approved in the area. The proposed project will certainly contribute to those exceedances. Mitigating actions, which should be implemented must be discussed along with the corresponding air quality impact reduction. An air quality impact study and monitoring program should be seriously considered by the applicant to verify that the State standards will not be exceeded.

Noise

We have previously commented on the EIS Preparation Notice (1986), Draft EIS (1986) and Petition for Land Use District Boundary Amendment (1986) on our concerns related to: noise emanating from the Gentry-Waipio Industrial Park; noise emanating from the proposed 10-acre park and elementary school; noise emanating from stationary equipment; noise emanating from military operations; and noise associated with the construction phase.

Noise impacts from vehicular traffic along Kamehameha Highway and proposed mitigative measures were addressed in the Preliminary Planning, Project Description and Analysis Section of the submittal.

Additional concerns related to this project include:

- a. Noise from maintenance activities at the golf course.
- b. Noise from increased vehicular traffic entering and leaving the park and ride facility.

Noise from these sources may impact nearby residents of the proposed project.

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

Robin J. Mattek

For JOHN C. LEWIN, M.D.

FILE COPY

August 4, 1988

MEMORANDUM

To: The Honorable Roger Ujveling, Director
Department of Planning and Economic Development

From: Director of Health

Subject: Petition No: A88-623 (Waiola Estates)
Petitioners: Department of General Planning, City & County
Requested Change: Agricultural to Urban
Proposed Use: Residential Community Primarily for Affordable Housing
Location: Waipio, Ewa, Oahu, TMC 9-4-07: 1
Area: Approximately 269 Acres

Thank you for allowing us to review and comment on the subject request. We submit the following comments for your consideration:

Drinking Water

We have serious concerns regarding groundwater contamination that may result from the conversion of agricultural lands to an urban subdivision of over 1,000 homes. This is a critical recharge area for the Pearl Harbor aquifer. Several important drinking water wells are located in the vicinity, including the Board of Water Supply's Waipahu Wells, the Navy's well at the Waikale Military Reservation (used as a back-up well for drinking water), and the Oahu Sugar Waipahu Well. The Waipahu Well is known to be contaminated with ethylene dibromide (EDB), either from agricultural use or fuel spills, pointing to the vulnerability of groundwater in this area. Additional contamination may occur due to the application of pesticides for home and garden uses as well as for the maintenance of the proposed golf course and other uses. In addition, the use of brackish water or grey water for irrigation may contaminate these wells. It must be demonstrated that urban development of this area will not pose a threat of contamination to the groundwater.

Should the project be approved, the proposed new well(s) at the 595-foot elevation will be subject to approval by the Drinking Water Program. The Department of Health is vested with the responsibility to assure that the public water systems in the State are providing water which is in compliance with the State's drinking water regulations known as Chapter 20, Title 11, Administrative Rules, and are in compliance with all other applicable terms and conditions of Chapter 20.

Wastewater Disposal

We do not have any objections to this project provided that the City and County of Honolulu Public Works Department approves of the increase in wastewater flow to the Honolulu WWTP as a result of the project.

FILE COPY

The Honorable Kent M. Keith
September 9, 1986
Page 2

FILE COPY

MEMORANDUM

September 9, 1986

To: The Honorable Kent M. Keith, Director
Department of Planning and Economic Development

From: Director of Health

Subject: Petition No: A86-606
Petitioner: Dept. of General Planning, City & County of Honolulu
Requested Change: Agricultural to Urban
Proposed Use: Residential development
Location: Waipio, Ewa, Oahu, TMK 9-4-07: 1
Area: 269 acres

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

Air Pollution

In the section on the air quality impact, the report should be addressing the exceedance of the State ambient air quality standards (SAAQS) for carbon monoxides as indicated in the study by Barry Root. The study indicated that with and without the Waioala Estates Project and roadway improvements, the SAAQS for carbon monoxide will be exceeded at critical receptor sites.

Although not the major cause for the exceedance, the project will be contributing to and exacerbating the carbon monoxide problem.

Noise

1. Concerns toward this project regarding environmental impacts were addressed in comments to the EIS Preparation Notice (June, 1986) and the Draft EIS (August, 1986). The following concerns were indicated:

- a. Noise emanating from the existing Gentry-Waipio Industrial Park.
- b. Noise emanating from the proposed 12-acre park and schools.
- c. Noise emanating from stationary equipment.
- d. Noise emanating from military operations.
- e. Noise associated with construction phases.

2. Noise impacts from vehicular traffic along Kamehameha Highway and mitigative measures were addressed in the Preliminary Planning, Project Description and Analysis Section of the submittal.

Drinking Water

The Department of Health's Drinking Water Program has strong reservations about the conversion of the project site from agricultural to urban development. The proposed

project will convert pineapple land to a subdivision of 1,500 homes, Waiola Estates Subdivision. The project area is situated over a recharge area for the Pearl Harbor Aquifer and will impact Waipahu and other drinking water wells in the area. Past contamination of Waipahu and other wells clearly demonstrate that groundwater in the area is susceptible to contamination. Past contamination implicates residues from agricultural activities. Urban activities could pose a greater threat to groundwater. In view of the intense application of pesticides and other chemicals in residential developments, the Drinking Water Program strongly recommends that the area be maintained as an agricultural or a watershed area.

The petition document states that the Board of Water Supply has applied for permits to drill two new wells for Waiola Estates Subdivision. These new wells will require approval by the Department of Health.

The Department of Health is vested with the responsibility to assure that public drinking water systems in the State are providing water which is in compliance with the State's drinking water regulations known as Chapter 20, Title 11, Administrative Rules, and are in compliance with all other applicable terms and conditions of Chapter 20. A public water system is defined as a system serving 25 or more individuals at least 60 days per year or having a minimum of 15 service connections. In the event that the new well is intended to serve these minimum numbers of persons or service connections, please be advised that the well and distribution system will be subject to the terms of Section 11-20-29 and Section 11-20-30 of Chapter 20 respectively.

Briefly, Section 11-20-29 of Chapter 20 requires all new sources of potable water serving public water systems to be approved by the Director of Health prior to their use to serve potable water. Such approval is based primarily upon the satisfactory submission of an engineering report which adequately addresses all concerns as set down in Section 11-20-29. The engineering report must be prepared by a registered professional engineer and bear his or her seal upon submittal.

Section 11-20-30 requires that new or substantially modified distribution systems for public water systems be approved by the Director of Health. Such approval depends upon the submission of plans and specifications for the project prior to construction and the demonstration that the new or modified portions of the system are capable of delivering potable water in compliance to all maximum contaminant levels as set down in Chapter 20 once the distribution system or modification is completed. Approval authority has been delegated to the Board of Water Supply for distribution systems under their jurisdiction.

Should there be any questions regarding Chapter 20, Title 11, Administrative Rules, please contact the Drinking Water Program at 598-2235.

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.

Leslie S. Matsubara
LESLIE S. MATSUBARA

FILE COPY

February 1, 1989

MEMORANDUM

To: Mr. Michael N. Scarfone, Director, Department of Housing & Community Development, City & County of Honolulu

From: Deputy Director for Environmental Health

Subject: Environmental Impact Statement Preparation Notice (EISP/N) for Waiola Estates Subdivision Situated In Waipio, Oahu, TMK 9-4-07: 1

Thank you for allowing us to review and comment on the subject EISP/N. In the preparation of an EIS of the subject project, the following concerns must be addressed:

Wastewater Disposal

1. Wastewater generated from the project must be connected to the Honouliuli WWTP for treatment and disposal.
2. The Honouliuli WWTP may have to be expanded to accommodate the flows from this project.

Drinking Water

The Department of Health has concerns regarding groundwater contamination that may result from an urban subdivision of over 1,000 homes. This is a critical recharge area for the Pearl Harbor aquifer. Several important drinking water wells are located in the vicinity, including the Board of Water Supply's Waipahu Wells, the Navy's well at the Waikale Military Reservation (used as a back-up well for drinking water), and the Oahu Sugar Waipahu Well. The Waipahu Well is known to be contaminated with ethylene dibromide (EDB), either from agricultural use or fuel spills, pointing to the vulnerability of groundwater in this area. Additional contamination may occur due to the application of pesticides for home and garden uses as well as for the maintenance of the proposed golf course and other uses. In addition, the use of brackish water or grey water for irrigation may contaminate these wells. It must be demonstrated that urban development of this area will not pose a threat of contamination to the groundwater.

Any proposed new well(s) will be subject to approval by the Drinking Water Program. The Department of Health is vested with the responsibility to assure that the public water systems in the State are providing water which is in compliance with the State's drinking water regulations known as Chapter 20, Title 11, Administrative Rules, and are in compliance with all other applicable terms and conditions of Chapter 20.

Mr. Michael N. Scarfone
February 1, 1989
Page 2

Noise

1. Potential noise problems which may arise due to the integration of various land uses within the project location. These include:
 - a. Noise from activities occurring at the proposed golf course and parks, such as grounds maintenance or club activities.
 - b. Noise resulting from activities at the proposed school/playground, such as paging systems, band practices, and athletic events.
 - c. Noise from stationary equipment, such as air conditioning/ventilation units, and exhaust fans.
2. Since most of the residential units/homes will be in close proximity to one another, these units/homes should be designed so as to maximize the containment of noise.
3. Noise from vehicular traffic along Kamehameha Highway, east of the planned site, may result in adverse noise impacts on adjacent residential units/homes.
4. Noise associated with existing agricultural operations from surrounding areas may have a negative impact on the proposed residential development. Disturbances may also occur from heavy vehicles utilized to transport agricultural products.
5. Activities associated with the construction phase must comply with the provisions of Title 11, Administrative Rules Chapter 43, Community Noise Control for Oahu.
 - a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the rules.
 - b. Construction equipment and on-site vehicles 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 rules and conditions issued with the permit.
6. Traffic noise from heavy vehicles travelling to and from the construction site must be minimized near existing residential areas, and must comply with the provisions of Title 11, Administrative Rules Chapter 42, Vehicular Noise Control for Oahu.

Vector Control

All requirements of Title 11, Chapter 26, paragraph 35 (Rodents); demolishing of structure and clearing of sites and vacant lots) must be adhered to.

Prospective residents of the development should be made aware of periodic rodent influx and seasonal problems with the "pineapple souring beetle."

bcc: DW

Bruce S. Anderson
BRUCE S. ANDERSON, Ph.D.



OFFICE OF STATE PLANNING
Office of the Governor

STATE CAPITAL, HONOLULU, HAWAII 96813 TELEPHONE: (808) 531-3493

DEW MAIOLA GOVERNOR

COPIES FOR YOUR INFORMATION

Mr. Scarfone
Page 2
January 23, 1989

January 23, 1989

Mr. Michael H. Scarfone, Director
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

SUBJECT: Environmental Impact Statement Preparation Notice (EISPN)
Proposed Maioia Estates Subdivision Situated in Maipio, Oahu

We have reviewed the subject EISPN for the Maioia Estates Subdivision. According to the preliminary development plan (Figure 3), the proposed project is comprised of single and multifamily units, a school, childcare facility, park and ride facility, two parks, and a 9-hole golf course. The municipal golf course and regional park are described as "tentative plans" in the EISPN.

Based on our review of the proposed project and concerns expressed during our review of other development projects previously proposed for this site, we suggest that the Draft Environmental Impact Statement (DEIS) contain, at a minimum, a discussion relative to the following subjects in addition to those already identified in the EISPN.

1. The EISPN does not address the interrelationship of Maioia Estates' infrastructure development with the adjoining Waikole residential community. The DEIS should contain a proposed development or phasing schedule for infrastructure development as compared to infrastructure improvements planned for Waikole. If construction of the Waikole project is delayed, the DEIS should also propose appropriate mitigative measures which could be implemented by the City to alleviate the infrastructural interdependence of the two projects.
2. The DEIS should describe the total number of dwelling units, dwelling unit type, dwelling unit pricing, size of recreational/open space, and final configuration of proposed land use elements. Inasmuch as the DEIS findings will be derived from a proposed development plan, the Petitioner should commit to implementation of the plan as presented in the EIS.

3. The DEIS section on financial capability should contain a discussion on the Petitioner's commitment to provide affordable "for-sale" housing as it relates to the City's overall housing policy. The City Council's position on the subject project should also be clarified in the DEIS.
4. The DEIS should discuss whether sound attenuating mitigation measures along Kamehameha Highway will be necessary.
5. The DEIS should discuss whether the project will utilize brackish or reused water as previously suggested and also identify the proposed potable and possible non-potable water source for the project. The impacts to groundwater resulting from urban development relative to (a) the Pearl Harbor Ground Water Control Area (PIHGWCA) and (b) the Maipahu wells should be addressed.
6. A traffic impact study should be provided in the DEIS to assess how the current configuration of the project's land uses will impact local and regional transportation facilities.
7. The criteria or weight factors used to develop the Public Services and Facilities rating system should be described in the DEIS.

We appreciate this opportunity to comment.

Sincerely,

Harold S. Kusumoto
Harold S. Kusumoto
Director

CONCERN OF COMMUNITY AT MILILANI NEIGHBORHOOD BOARD
WAIOLA PRESENTATION (March 22, 1989)

SCHOOL SITES

NO OTHER QUESTIONS OR COMMENTS PRO OR CON

CONCERN OF COMMUNITY AT WAIPAHU NEIGHBORHOOD BOARD
WAIOLA PRESENTATION (March 16, 1989)

ANY RENTALS?

HEIGHT OF BUILDINGS

CONCERNS OF WAIPAHU COMMUNITY ASSOCIATION

WAIOLA PRESENTATION (March 14, 1989)

GP POPULATION NUMBERS

NAVY'S RESPONSE

LAND SET ASIDE FOR CHURCHES?

ROAD THE SAME AS ORIGINAL PLAN: DOWN TO PAIWA INTERCHANGE?

WANT TO KEEP WAIPAHU CHILDREN IN WAIPAHU SCHOOLS

DOLE STARTING 18-MONTH CROP OF PINEAPPLE. HOW DOES THIS AFFECT
WAIOLA?

WILL KAH HWY. BE IMPROVED SAME TIME AS HOUSING? DON'T WANT
CONSTANT DIGGING UP OF ROADS.

CONCERN IS TRAFFIC AND QUALITY OF HOUSES.

WILL WAIOLA GOLF COURSE HAVE LIGHTS?

WHAT ABOUT WATER SUPPLY?

WHERE WOULD FIRST PHASE START?

PLANS FOR ELDERLY, LOW COST, ETC.?

AD HOC COMMITTEE ON HOUSE DESIGNS?

WHAT CHANGES FROM ORIGINAL PLANS?

CONCERNS/WAIOLA 2 2 2 2 2 2

Waipahu Community Association, contd.

HAS A SURVEY BEEN DONE REGARDING ELDERLY NEEDS? WHAT SUBSIDY?

OVERALL VIEW OF PRESENTATION: Members non-committal

CONCERNS OF COMMUNITY AT WAHIAWA NEIGHBORHOOD BOARD MEETING
WAIOLA PRESENTATION (March 20, 1989)

POPULATION? 4,000, 10% Elderly.

HANDICAPPED UNITS? 2-4%.

USE CONCRETE ON MULTI-FAMILY? Architects will consider all materials.
PARKING? Per code.

WERE 4,000 EXTRA PEOPLE IN GENERAL PLAN? No, this is additional.

WAIKELE PAYING ANY PART OF ROAD WORK? Paiva Interchange & lower Kam widening.

PRESENT LAND USE? Pineapple. Will change fields.

WHAT ABOUT THE BOTTLENECK TO MT ON ROOSEVELT BRIDGE? People can use Paiva and by-pass on Kam.

SERER & WATER? BMS need to look at Waikele first. Case of whoever gets the water first.

WE'RE TAXING WATER TOO MUCH WITH ALREADY APPROVED DEVELOPMENTS.
EIS will address this.

CONCERNS OF COMMUNITY AT WAIPIO COMMUNITY ASSOCIATION MEETING
WAIOLA PRESENTATION (March 29, 1989)

HIRAH KAMAKA, PRESENTER, COULDN'T ANSWER QUESTIONS; GROUP

INDIGNANT: "Why does Mayor send figure-heads out who can't answer our questions?"

Why is Mayor so adamant about this (Waiola) when we keep saying "no!"

Why doesn't Mayor listen to us?

What special interest group is going to make money out of Waiola? There's been no community support and yet the Council gave the Mayor \$95,000 for an EIS.

Why do you have to put it (Waiola) here? Kamaka answered, "We have to put it someplace. Every neighborhood says that."

Has project already been approved? No, said Kamaka, it has to go back to Council for approval.

What is best avenue to pursue to stop Waiola? Kamaka said to contact your Council representative and make your feelings known.

Consensus of opinion of presentation made by one resident at meeting: "Send One message back to the Mayor: Waipio people are not interested in Waiola!"

WAIOLA PRESENTATION BY MAYOR'S OFFICE - March 14, 1989

DRAFT
1/9/89

CONCERNS OF WAIPAHU COMMUNITY ASSOCIATION RE: WAIOLA SUBDIVISION

- GP POPULATION NUMBERS
- NAVY'S STAND ON PROJECT
- LAND SET ASIDE FOR CHURCHES
- ROADS
- WAIPAHU SCHOOL FOR WAIPAHU CHILDREN
- AFFECT ON DOLE AND DEL MONTE'S CROPS (Just started 18 mo. crop).
- WILL KAM HIGHWAY BE IMPROVED SAME TIME AS HOUSING?
- WILL WIDENING OF KAM HWY. HELP TRAFFIC?
- WAIPIO GENTRY'S CONCERNED ABOUT TRAFFIC AND QUALITY OF HOMES IN WAIOLA.
- LIGHTS ON WAIOLA GOLF COURSE
- WHAT ABOUT WATER SUPPLY?
- ANY CONCERNS FROM CITY COUNCIL?
- WHERE WILL FIRST PHASE START?
- HOW WILL UNITS BE SPREAD OUT RE: ELDERLY, LOW-COST HSG., ETC.
- WHO WOULD DO THE BUILDING?
- AD HOC COMMITTEE ON HOUSE DESIGNS?
- CONCERN RE CHANGES FROM ORIGINAL PLANS.
- HAS SURVEY BEEN DONE REGARDING ELDERLY NEEDS?

JUSTIFICATION SHEET

DEPARTMENT: Governor's Office
TITLE: A BILL FOR AN ACT RELATING TO LAND USE
PURPOSE: To amend the State Land Use Law to address major constitutional, statutory and socio-economic changes that have occurred since its adoption and, more specifically, since the last five-year boundary review conducted in 1975. The bill amends Chapter 205, IRS, the Land Use Law and Chapter 226, IRS, the Hawaii State Planning Act to adopt the land evaluation rating system; amend the land use commission's decision-making criteria to provide guidance for the reclassification of important agricultural lands; establish a new district, the open district; refine criteria for the other land use districts; and provide for a thorough and comprehensive five-year boundary review to implement the provisions of the bill.

MEANS: Amend Chapter 205, IRS, relating to the Land Use Commission and Chapter 226, IRS, relating to the Hawaii State Planning Act.

JUSTIFICATION: Major Issues and Concerns
Landmark legislation passed in 1961 as Act 187 established the State land use law. Act 187 created the Land Use Commission and directed it to divide all the lands in the State into districts--urban, conservation and agriculture. The rural district was added in 1963. The Act also provided for a review of district boundaries to be conducted every five years.

Significant socio-economic, constitutional and statutory changes have occurred since the passage of the Act and the last five-year boundary review conducted in 1975 which prompt a major re-examination of the State land use law and land use district boundaries.

There is a critical shortage of safe, sanitary and affordable housing units in the State. In 1986, Hawaii experienced America's highest housing costs for both owner-occupied and rental housing. Moreover, there is an estimated housing production shortfall of over 20,000 units of which 14,000 are needed by low- and moderate-income families, and rental vacancy rates are as low as 1 percent in some areas of the State. The draft State Housing Functional Plan 1988, prepared to implement the Hawaii State Plan, calls for increasing the supply of affordable units through public and private actions. Affordable housing is a critical need which must be addressed through land use planning.

o Agricultural use has been one means of keeping areas in open space and providing related open space benefits. Fields of sugar cane, for example, have enhanced the scenic beauty of the islands. However, sugar price supports expire in 1990 raising uncertainty as to the nature and strength of the sugar industry in Hawaii. Proponents of open space will no longer be able to rely upon sugar to provide open space as companies continue to shrink the size of their plantations.

o There are areas where urban development would be premature or not appropriate for various reasons such as lack of demand or need for urban use, cost of providing public infrastructure, and public policies and plans directing growth to other areas. Further, there is a growing recognition that open space is a valuable resource in its own right and should be protected and managed. Open space enhances the value of surrounding communities, provides buffer areas, scenic vistas, and facilitates efforts to manage and direct urban growth.

o The 1978 Hawaii State Constitutional Convention proposed and the electorate approved new section to the State Constitution, Article XI, Sec. 3, which requires the State to conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency and assure the availability of agriculturally suitable lands. The Constitution requires that the Legislature provide standards and criteria to accomplish the foregoing.

The amendment further provides that lands identified by the State as important agricultural lands shall not be reclassified by the State or rezoned by its political subdivisions without meeting the standards and criteria established by the Legislature and approved by a two-thirds vote of the body responsible for the reclassification on rezoning action.

o The 1978 Hawaii State Constitutional Convention also proposed and the electorate approved a new section on water resources which became Article XI, Section 7. This section in part states that the State has an obligation to protect, control and regulate the use of Hawaii's water resources for the benefit of its people. The State Water Code, Act 15-87, was adopted pursuant to Article XI, Section 7, of the Hawaii State Constitution. Resource planning currently being conducted through the Hawaii Water Plan as required by the State Water Code and the related State groundwater quality protection program has important implications for land use. Specifically, watersheds and groundwater aquifers which are current or potential sources of drinking water or ecologically vital may need to be given greater protection because of their water resource and water quality value.

o The Hawaii State Plan was adopted as Act 100, now Chapter 226, HRS, in 1978. The plan sets forth goals, objectives, policies and priority guidelines to guide the future of the State and establishes a statewide planning system to assure implementation of the plan. The State land use district boundaries need to be examined to assure that the intent of the Hawaii State Planning Act, specifically Section 226-52, HRS, is being carried out.

Evaluation of the LESA Commission's Report

To address concerns relating to agricultural lands and meet constitutional requirements, Act 273, SII 1983, established the Land Evaluation and Site Assessment Commission to formulate the State of Hawaii land evaluation and site assessment (LESA) system to identify agricultural lands of importance to the State of Hawaii pursuant to Article XI, Section 3, of the Hawaii State Constitution. The LESA Commission submitted its report to the Legislature in February 1986. Legislation based on the LESA Commission's recommendations was proposed and discussed during the 1987 legislative session. However, the proposed bills were held in committee due to concerns raised at the public hearing on the bills. Testimony received at the hearing indicated that the LESA Commission's recommendations and proposed bills would have sweeping implications, affecting all aspects of the way that land use in the State is currently managed and regulated. Further, questions remained as to the adequacy and appropriateness of the proposed LESA ratings particularly the site assessment factors which had not been mapped. The Legislature deferred consideration of the bills pending further examination of their potential impacts.

Since questions had been raised regarding the mapping of the site assessment factors, the Legislature appropriated funds for a demonstration project mapping the site assessment factors using a computer mapping system. The College of Tropical Agriculture and Human Resources, University of Hawaii, with the assistance of the Department of Agriculture and Office of State Planning, conducted the mapping project using the Hawaii Natural Resources Information System (HNRIS), a computer mapping system.

Numerous difficulties were encountered in mapping the SA factors. Almost all of the ten site assessment factors proposed by the LESA Commission had to be modified in some way. In many cases, it was difficult to translate the LESA Commission's intentions into map form. Base data was often non-existent, out-dated or of inappropriate scale. Expensive aerial photographs would be required to update some of the factors.

In addition, the Office of State Planning engaged DMN, Inc., a land use and environmental planning firm to examine lands in the agricultural district to determine their suitability for various uses. The consultants found that approximately 34,000 acres of agricultural district lands on Oahu have very high conservation value. For example, these include watersheds, erosion and flood hazard areas, areas with steep slopes and endangered and threatened species habitats. Another 8,000 to 59,000 acres, depending on the methodology used, were identified as having "high" constraints to development or high potential conservation value. These findings suggest that there may be substantial acreage which should be placed in the conservation district and provides further reason to conduct a comprehensive review of district boundaries.

The office also met with numerous groups including landowners, the Land Use Research Foundation (LURF), environmental groups, farmers, planners and State Plan Policy Council members including County planning directors to discuss the LESA Commission report and recommendations.

The following major problems with the LESA Commission's report and proposed bills have been identified:

- No additional protection for important agricultural lands. A two-thirds vote of the IUC is needed to reclassify land out of the IAL District which is no change from current requirements.
- No provision for replacement of lands taken out of IAL. IAL District will be continually reduced.
- No protection for diversified agriculture or "unique" lands. The lands identified as IAL will be the lands with the best soils. These are not the areas where the majority of farmers are currently cultivating diversified crops.
- Agriculture production goals are static. Production goals were established for 1995 using data available in 1981 and 1985. There is no provision for new production information or changes in technologies and crops.
- The SA factors have been difficult to map. Proxies or substitutes had to be found for most of the criteria and may not meet the original intent of the LESA Commission.
- LESA does not address other ancillary benefits that agricultural lands provide, including open space, water recharge, and scenic areas.

- Finally, there is a need to retain the system of dual State and County management and regulation of our precious land resources.

Recommended Approach

A. Adopt the LE rating system as a decision-making tool

The bill adopts the land evaluation (LE) rating system as a method of determining the importance of a parcel for agricultural use. In addition, lands in productive agricultural use are given added protection by assigning these lands a high LE rating. This provision has been added to protect farmers of diversified agricultural crops including dairy farmers. These operations are generally on marginal lands with low LE scores but should be given added weight because of their role in attaining the State's goal of self-sufficiency.

B. Amend the Land Use Commission's decision-making criteria to address important agricultural lands

The bill establishes criteria to guide the Land Use Commission in reclassifying agricultural lands. The amendments provide that the Land Use Commission shall not approve a boundary change reclassifying land in the agricultural district to the urban, rural, or open districts unless:

- (1) The commission weighs the importance of the land for agriculture based on the LE rating and other evidence presented and the public benefit to be provided by the reclassification and;
- (2) The commission finds that by the clear preponderance of the evidence presented overriding public interest exists to reclassify the lands, such that the higher the LE rating, the greater the public benefit which must be demonstrated.

Chapter 226, HRS, has been amended to identify areas of overriding public interest.

C. Amend Section 205-2, HRS, to revise land use districting and classification.

The bill contains provisions to establish a new district, the open district and to refine the definitions of other land use districts. The open district shall consist of open space areas, lands which are not of high value as agricultural or conservation resources, and areas not appropriate for urban development.

The intent is that lands in the current agricultural district which are not important for agriculture but are located in areas which are not yet ready or appropriate for urban development may be reclassified to the open district. In addition, there may be lands in the agricultural district which have high conservation value and should be reclassified to the conservation district.

Low intensity uses compatible with an open designation including golf courses, shall be allowed in the Open district. The minimum lot size in the district shall be determined by the Counties, with the stipulation that the minimum lot size not be less than seventeen acres with certain exceptions.

Unusual and reasonable uses may be allowed by the County planning commission County Council through special permit. Special permits for areas over fifteen acres shall be subject to approval by the Land Use Commission.

The bill provides for tighter control over the agricultural district as of December 31, 1992 (after the boundary review). Golf courses have been deleted as a permissible use as of that date. Further, after December 31, 1992, special permits in the Agricultural district shall be approved by the Land Use Commission, rather than the Counties.

D. Provide for the conduct of a comprehensive five-year boundary review

Under present statutes the five-year review of district boundaries shall focus on the review of the Hawaii State Plan, County general plans and County development and community plans. The five-year boundary review shall be undertaken by December 31, 1990, and upon completion a report of findings shall be presented to the Land Use Commission.

The bill amends Section 205-18, HRS, to delete provisions which narrow the scope of the review and to provide that a comprehensive five-year boundary review be conducted to implement the bill's provisions.

E. Other housekeeping Amendments

The bill allows the commission to enforce district boundaries and conditions. Presently, only the Counties have enforcement authority.

The bill also provides for a longer processing time frame for petitions for land use district boundary amendments for affordable housing projects by providing for a 75-day hearing and decision period in lieu of the present 45 days.

The bill also contains other housekeeping amendments.

\$75,000 for FY 1990 to amend the Land Use Commission's rules and \$330,000 for FY 1990 and \$220,000 for FY 1991 to conduct the five-year boundary review.

GENERAL FUNDS:

OTHER FUNDS:

PPBS PROGRAM DESIGNATION:

GOV 103

OTHER AFFECTED AGENCIES:

Land Use Commission
Department of Land and Natural Resources
Department of Agriculture
University of Hawaii
Counties

Review of Oahu water supply may wash out 'second city'

By Andy Yamaguchi
Hawaii Government Bureau

Oahu's largest source of fresh water is probably not as abundant as once thought, hydrologists now say.

That has prompted state officials to consider reductions that could stall Oahu's "second city" in Ewa and hasten development of alternatives such as desalination.

The state's Commission on Water Resources Management will vote Wednesday on whether to revise the Pearl Harbor aquifers' "sustainable yield" — the maximum volume of water that experts feel can

be pumped without harming the source. William Paly, state land director and Water Commission chairman, said he expects the commission to approve a proposed 13 percent reduction.

That would mean cutting back on the availability of Pearl Harbor groundwater just as demand — spurred by Ewa development — will be rising. By 1993, demand for water from the region could exceed supply, according to state projections.

"We were looking at the year 2010 to face this issue," said Oswald Stender, Campbell Estate senior adviser and presi-

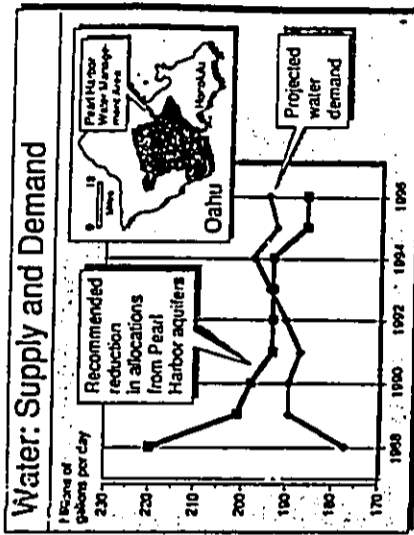
dent of the Ewa Plain Water Development Corp. "Now it's been brought into an earlier focus."

The Pearl Harbor aquifer ain't got as much water as we thought it had," Paly said. "It's going to lighten the whole situation up substantially."

Imagine a swimming pool the size of a football field and 500 feet deep. Fill it up with water.

That's how much fresh water is pumped out of the ground from the Pearl Harbor

See Water, Page A-4



Water supply feared less than abundant;

Water supply feared less than abundant; state eyes cutbacks

From Page One

aquifers every day.

About 177 million gallons. Officially known as the Pearl Harbor Water Management Area, the aquifers stretch from Halaia to Wahiawa to Kahe Point and encompass "the largest and most important fresh-water aquifers in the state of Hawaii," according to a report done for the state by John Mink of the consulting firm George A. L. Yu and Associates.

Almost a fourth of the water drawn from the Pearl Harbor aquifers is exported outside the region. Turn on a tap in Makaha or Hawaii Kai and you might get Pearl Harbor water.

In 1979, the state established the Pearl Harbor Water Management Area and in 1980 set its sustainable yield at 225 million gallons per day.

Subsequent land-use changes in the region — most notably increased urbanization and Oahu Sugar Co.'s switch to more efficient drip irrigation — prompted the state to re-evaluate its water policy.

The resultant Mink report recommended lowering the sustainable yield of the aquifers to avoid the risk of seawater creeping into an overpumped aquifer.

Based on the report, the state Department of Land and Natural Resources has recommended to the Water Commission the following:

- Revise the sustainable yield of the Pearl Harbor aquifers from 225 million gallons per day to 195 million.

- Reduce water allocations to the various users — Board of Water Supply, Oahu Sugar Co., the military, etc. — from 220 million to 186 million gallons per day (allocations are usually slightly less than the sustainable yield in order to maintain a cushion).

Reductions would be phased in gradually through 1995.

Actual water use is currently far below the established upper limits.

But projected demand from future Ewa projects such as the Ko Olina Resort, state and city housing developments and expansion of the Makakilo subdivision will exceed allocations in 1993 and exceed sustainable yield in 1997 (although state hydrologist Dan Lum, who wrote the DLNR recommendations, throws in the caveat that projected demand is seldom met because projects fall behind schedule).

What then? Does that mean

we will have run out of water?

The feeling among government and business leaders is probably not. They have known for years the day would come when demand for water would exceed supply. They just didn't think it would be so soon.

Kazu Hayashida, manager and chief engineer of the Honolulu Board of Water Supply, said he is confident there will be enough water.

"I don't think we're in a position where we have to put on moratoriums (on new water permits)," he said.

Hayashida said the board hopes to tap new water sources in Windward Oahu and Makaha by 1998, thus reducing Pearl Harbor exports by 10 million to 20 million gallons and keeping that water for use in the region.

The state also broke ground in January on an experimental desalting plant in Ewa that officials hope will result in an economical way to desalinate water. It is expected to produce enough fresh water for about 1,700 homes upon its completion in mid-1990.

Other alternatives include using brackish (salty) water and treated sewage effluent for irrigation, particularly on golf courses.

Paty said even more water might become available if Oahu Sugar cuts back on production even more than it has planned to.

But Paty and Stender said they will not pressure Oahu Sugar to cut back, or stop production entirely, in order to free up its water allocation.

The grower's lease with the Campbell Estate expires in 1995. Stender said the estate intends to renew the lease because sugar cane is important to the economy, is aesthetically pleasing and helps "recharge" the aquifer when its irrigation water trickles down.

Paty said the Water Commission "has respected their (Oahu Sugar's) requests for the water they need to maintain their yields."

Stender said he was "surprised" by the proposed 13 percent reduction in the sustainable yield.

"The real issue with sustainable yield is that nobody knows," Stender said. "It might not be as bad as people think, or it might be worse." He said he would like to see a more modest cutback for now, with more extensive monitoring.

Said Paty, "I think there's enough water out there to accomplish what we want to do, but we have to be damned careful how it's used."

RECEIVED AS FOLLOWS

Council members bash Fasi housing budget

By William Kresnak
Honolulu City Council member

Honolulu City Council members are taking big whacks at Mayor Frank Fasi's ambitious housing initiatives in their recommendations for rewriting the city's proposed budget for the next fiscal year, which begins July 1.

"Premature," "location inappropriate" and "city already has hands full" are some of the comments accompanying their requests to delete funding for several projects, including the 8,714-unit Hale Ola development in Ewa.

The suggestions were made to Budget Chairman John DeSoto, who is responsible for shaping Fasi's proposed \$624 million city operating budget and \$295 million construction budget into a final spending plan by late May.

DeSoto's staff stressed the recommendations represent a "wish list" and may not be in the final city budget. "I believe that affordable housing continues to be one of our most critical public needs and first on my list of priorities," Fasi said when he sent his proposed budget to the Council last month.

"To meet this need, the city will continue to implement an ambitious and imaginative housing program," he said.

The mayor budgeted some \$107.8 million for construction of projects that would provide as many as 15,000 new homes ranging from fee-simple, single-family residences to high-rise rental apartments and housing for the elderly and homeless.

Council members want DeSoto to do

away with funding for proposed projects including:

- Hale Ola, envisioned for some 1,745 acres in the "second city" of Ewa.
- Kipapa Ridge Estates, formerly known as Waiola Estates, a 1,345-home development in Central Oahu.
- West Loch Bluffs, a 1,687-unit project in Ewa.
- Ewa Villages, a 2,911-home expansion and revitalization project in Ewa.
- Foster Gardens Estates, a 1,900-apartment project in the area bounded by Vineyard Boulevard, Nuuanu Avenue, Kukul and River streets downtown.
- Park Place, a 500-apartment development in Iwilei bordered by King Street, Nimiz Highway, Iwilei Road and Nuuanu Stream.

Also, members are recommending against the 70-apartment Kallua and 58-apartment Wilikina (Wahiawa) elderly housing developments because of community opposition.

Council members aren't just slayers, however. They want to add millions of dollars for park improvements and land acquisition, to upgrade sewage treatment at the Sand Island and Wai-anae plants, and to plan for a city amphitheater at the Honolulu waterfront.

They also want to hire 10 new life guards, put information kiosks downtown, hire six police officers to help patrol parks, and provide for possible raises for Council staff.

Another \$60,000 is recommended for the City Clerk's Office to publish "A History of Honolulu," a book written under contract but never published.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE 322-4277



FRANK P. KASO
MAYOR

WHEEN SCARFONE
DIRECTOR
WIRAM K. KAMATA
DEPUTY DIRECTOR

The Honorable Rene Mansho
May 1, 1989
Page 2

May 1, 1989

The Honorable Rene Mansho
Councilmember
City Council
City and County of Honolulu
Honolulu, Hawaii 96813

Dear Councilmember Mansho:

Subject: Draft Environmental Impact Statement
Kipapa Ridge Estates (formerly Kaiola Estates) Subdivision

We have received your comments and analysis dated April 24, 1989 on the subject document. While we are including your "comments" in their entirety in the Final EIS, we note that what you provided was a compilation of agency comments to the preparation notice, which we have already responded to in the Draft EIS; letters to the Mayor and 1988 testimony to the State Land Use Commission from various community groups; your staff notes from 1989 community meetings; newspaper articles and a justification sheet for an unidentified bill that may have been introduced at the State Legislature.

We have responded separately to some of these documents but will not be responding to each one here as they are not comments to the Draft EIS under consideration. We note that many statements in your analysis dated April 24, 1989, are taken from the Draft EIS and taken out of context. We will attempt to respond to the points in your analysis.

In general, the weighted value method of analysis used in the review would conclude that most housing projects should not be built. Unfortunately, urban residential usage generates all of the impacts that you have cited (traffic, air pollution, electricity consumption, noise, and use of prime agricultural lands) but a new housing development with these impacts would also fill the growing need on Oahu for new housing units. We will attempt to cite from the Draft EIS, the mitigation measures which were proposed.

- 1. Traffic:** The Kipapa Ridge Estates project will include measures designed to mitigate increased traffic due to project implementation. These include provision of a park and ride facility; road widening improvements on Kamehameha Highway; and finally, transportation coordination efforts to facilitate carpooling to employment centers by residents.
- 2. Electricity demand:** As in the case for all new residential uses in any location, there will be an increased demand for electricity due to Kipapa Ridge Estates' development. This will also be experienced in Milliani Mauka, Kapolei Village, West Loch Estates, and other major residential projects scheduled for Central and Leeward Oahu. The Draft EIS mentions these possible mitigation measures; the inclusion of solar energy water heating units, the increased use of landscaping to provide afternoon shade which thereby reduces dependence on air conditioning units, and positioning of windows to take advantage of available light without increasing indoor heat.
- 3. Air Quality:** If the subdivision is considered a potentially significant indirect air pollution source, every other residential subdivision, including Milliani Mauka and Kapolei Village, must similarly be considered indirect sources. The proposed development will have an effect on air quality. The air quality study notes, however, that "high peak hour levels of carbon monoxide along the congested portion of the H-1 Freeway through Pearl City will continue to be a problem whether this particular project is constructed or not." The proposed traffic mitigation measures mentioned earlier will also reduce air pollution by increasing carpooling and the use of mass transit.
- 4. Noise:** Great attention has been paid in the revised site planning at Kipapa Ridge Estates to reduce, if not eliminate, the noise impacts on residents along the Kamehameha Highway corridor. There is now a space buffer of 50' along the right-of-way and along most of the frontage, the buffer is augmented by the regional park. Analysis of the redesigned site plan by the noise consultant now provides that traffic noise levels at Kipapa Ridge are expected to be in the "Moderate Exposure Acceptable" category, and for this reason, additional noise mitigation measures are not required for compliance with FHA/PHD standards.

The Honorable Pene Hansho
May 1, 1989
Page 3

5. Public Facilities:

a. Potable Water: The potable water source for the Kipapa Ridge project has been identified at the HECO Maiau power plant. Improvements are included in the total project cost that will be repaid by home sales. We note that other new developments will also require the development of on and off site improvements.

At the present time, the Honolulu Wastewater Treatment Plant has sufficient capacity to provide service for this project. Coordination with the Department of Public Works will be an ongoing process throughout the Land Use Commission and City Council approval process.

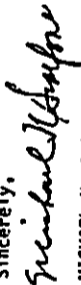
b. School Facilities: As this project progresses through the land use approval process, we will be coordinating with the State Department of Education to insure that adequate school facilities are available to serve the student enrollment generated by this project.

6. Agricultural land: Development of the proposed subdivision will result in the loss of agricultural land; however, landowner Castle and Cooke, Inc., has noted that "the conversion of these lands to urban use will not affect pineapple production or jobs over the long term since other surplus lands have been converted to pineapple as part of the overall land utilization program of Castle and Cooke, Inc., and its subsidiaries."

7. Target market: The proposed project addresses housing demand in all categories resulting in an economically integrated community. The proposed mix of affordable and market units will improve community acceptance of the project as well as enhance the project's ability to provide units for low- and moderate-income households at an affordable price.

Thank you for your comments.

Sincerely,



MICHAEL H. SCARFOIE
Director

XIII. LIST OF PREPARERS

This document was prepared by and developed in coordination with the assistance of the following agencies and consultants:

City and County of Honolulu

Building Department
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
Department of Housing and Community Development
Department of Land Utilization
Office of Human Resources

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Park Engineering, Inc.
Environmental Communications, Inc.
Austin, Tsutsumi and Associates, Inc.
Barry D. Root
Earthplan
John Zapotocky, Consultant
Y. Ebisu & Associates
Gordon L. Dugan

APPENDIX A

Castle & Cooke, Inc.

Letter of June 30, 1988

5/20/88 JF

CASTLE & COOKE, INC.

P. O. BOX 2990 • HONOLULU, HAWAII 96802-2990
TELEPHONE (808) 549-8811

June 30, 1988

Director
Department of Housing and
Community Development
City and County of Honolulu
650 South King Street 5th Floor
Honolulu, Hawaii 96813

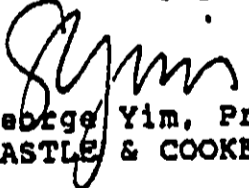
Dear Sir:

Waiala Estates

The City has threatened the condemnation of 269 acres at
Wailkele, TMK 9-4-7-1, which is presently owned by Castle &
Cooke, Inc. and in pineapple cultivation.

Castle & Cooke's Central Oahu/North Shore Master Plan had
proposed that the subject parcel be a part of a "Green Belt"
for a ten year period. However, the conversion of these lands
to urban use will not affect pineapple production or jobs over
the long term since other surplus lands have been converted to
pineapple as part of the overall land utilization program of
Castle & Cooke, Inc. and its subsidiaries.

Very truly yours,


George Yim, President
CASTLE & COOKE LAND COMPANY

bc: J. Hewetson
B. Mills
R. Hawthorne

APPENDIX B

Agricultural Study

Prepared by

Evaluation Research Consultants

**Agricultural and Economic Evaluation of Lands
in the Proposed Waialeale Development**

prepared by

**Evaluation Research Consultants
826 19th Avenue
Honolulu, Hawaii 96816**

for

**The Department of Housing and Community Development
City and County of Honolulu
Honolulu, Hawaii 96813**

July 18, 1986

Agricultural and Economic Evaluation of Lands
in the Proposed Waialeale Development

The significance of the subject lands as part of the agricultural resources of the State of Hawaii can be evaluated by examining the potential uses of the land. These uses are determined by three sets of factors: (1) the physical, agronomic and environmental characteristics of the land; (2) economic variables such as the existence and location of markets for goods that can be feasibly produced on the land, the cost of inputs required to grow the goods, and the supply of similar products from other sources; and (3) the current and future demand of agricultural producers for land having the physical, environmental, agronomic, and economic characteristics of the subject lands.

The subject lands consist of gently to moderately sloping terrain (3 to 15 percent slopes). The prevailing winds are brisk to gentle from the northeast, averaging about 5 mph. The area is exposed to long hours of direct sunlight for the greater portion of the year, and receives an average of 26 inches of rain per year. The predominant soils are Holokai silty clay loams (HuB and HuC). Supplemental irrigation is required for most shallow-rooted crops. The land currently is drip irrigated and used for pineapple production. The irrigation water comes from the Waialeale ditch. The location of the site is important in that it is near the major market in the State and close to major overseas shipping points.

The relative productivity of the lands in terms of agriculture can be assessed by examining a number of productivity indices. The subject lands are designated "Prime Agricultural Lands" by the State of Hawaii Department of Agriculture agricultural lands of importance to the State of Hawaii or ALISH system. The "Prime" designation used by the ALISH rating system implies that the property has all the physical and climatic conditions

which permit sustained high yields under economically advantageous operating conditions. The land has overall productivity ratings of A821 and B831 (Land Study Bureau). A rating of A is the highest. Lands rated B have some limitations.

The Soil Conservation Service Soil Survey crop classifications for the subject parcel are I1e and I11e if irrigated. Under this rating system the highest productivity rating is I and the lowest is VIII. The crop classification scores indicate that the land has moderate to severe limitations that reduce the choice of crops or that require moderate or special conservation practices. In the case of the Waialeale fields, the lands are subject to moderate to severe erosion if not protected. According to the proposed Land Evaluation and Site Assessment (LESA) the subject lands have land evaluation (LE) ratings of 88 and 81 on a scale of 12 to 96 (letter from Jack K. Suwa, State Department of Agriculture, June 30, 1986).

The LESA ratings provide a summary of all the productivity ratings. In fact, the LE rating is a weighted average of five different productivity indices, including the three discussed above. The rating for the Waialeale lands indicate that when irrigated the land has productive potential. It is not the very best land in the State, but it is definitely good land, capable of producing high yields with relatively low costs and little risk of damage to the physical environment if appropriate cultural practices are followed. The lands are well-suited for their current use -- the production of pineapple, primarily for the fresh market (about 50 percent goes to the fresh market and the remainder to processing).

However, once ANFAC's development in Waialeale is completed, the subject parcel will be bounded on two of three sides by residential housing. The operation of commercial agriculture in close proximity to residential housing is less than optimal. Even though agricultural operations are

somewhat protected under "right to farm laws" (Chapter 165 of the Hawaii Revised Statutes) which limit the circumstances under which existing farming operations may be deemed a nuisance, the dust and noise which are inherent parts of modern agriculture are sure to cause nearby residents to complain. Past experience indicates that nearby residents are very likely to find obnoxious the dust from the manure used as fertilizer. A large corporation (such as Dole) that is conscious of its public image is likely to attempt to mitigate the impact of its operations on nearby residents. This will increase operating costs slightly.

The agricultural significance of the subject lands can be examined in terms of the total amount of existing lands of similar quality. The subject lands constitute a very small percentage of such lands. The subject lands are less than 0.5 percent of the "Prime" lands on Oahu and less than 0.1 percent of such lands Statewide. The acreage in question appears slightly more significant when viewed as a percentage of the lands currently being used for crop production. Currently 41,600 acres are being used for crop production on Oahu (Table 1.) This would decrease by 0.65 percent if the subject lands were to be taken out of production and not replaced.

Total pineapple acreage on Oahu would be reduced by 2.3 percent.

Agricultural lands similar to Waiole are not scarce. Such lands are found throughout the State. As of 1984, 266,000 acres in Hawaii were used for crop production (including sugarcane and pineapple). This is 58,800 acres less than were used for crop production in 1969. See Table 1. On Oahu, total acreage used for crop production has decreased by 17,700 acres since 1967 to the current level of 41,600 acres (as of 1984). The data in Table 1 are graphically displayed in Figures 1 and 2.

Table 1. Acreage Used for Crop Production in Hawaii and on Oahu, 1961 - 1984 (in thousands of acres)

Year	State			Oahu				
	Sugar-cane	Pine-apple	Other Crops	Sugar-cane	Pine-apple	Other Crops		
1961	227.0	74.0	15.2	316.2	34.2	22.0	2.4	58.6
1962	228.9	72.0	14.9	315.8	35.2	21.7	2.2	59.1
1963	231.3	69.0	14.5	314.8	35.8	21.5	1.9	59.2
1964	233.1	65.0	15.6	313.7	35.8	18.5	1.9	56.2
1965	233.6	65.0	16.4	315.0	36.0	19.0	1.9	56.9
1966	235.4	65.0	18.1	318.5	36.5	19.0	2.3	57.8
1967	237.2	65.0	19.4	321.6	37.8	19.7	1.8	59.3
1968	238.9	65.0	19.5	323.4	38.1	18.8	1.8	58.7
1969	241.4	64.0	19.4	324.8	37.5	18.6	1.7	58.0
1970	237.9	64.0	19.4	321.3	35.3	17.4	1.7	54.6
1971	232.1	60.9	22.9	315.9	32.4	17.4	2.0	51.8
1972	229.6	58.1	22.0	309.7	32.7	15.5	2.2	50.4
1973	226.1	57.5	25.0	308.6	32.7	15.5	3.0	51.2
1974	224.2	55.0	24.4	303.6	33.5	15.5	2.9	51.9
1975	221.4	50.0	26.7	298.1	34.3	15.5	3.2	53.0
1976	221.6	48.0	26.4	296.0	34.3	15.5	4.8	54.6
1977	220.7	45.0	27.4	293.1	34.2	13.0	3.5	50.7
1978	220.7	43.0	27.7	291.4	34.0	12.0	3.1	49.1
1979	218.6	44.0	28.0	290.6	33.6	12.0	3.5	49.1
1980	217.7	43.0	30.7	291.4	33.1	11.5	3.3	47.9
1981	216.1	41.0	33.2	290.3	32.7	11.0	3.4	47.1
1982	204.8	36.0	38.0	278.8	29.2	11.5	2.6	43.3
1983	194.3	36.0	41.2	271.5	27.2	11.5	3.6	42.3
1984	188.4	35.0	42.6	266.0	26.4	11.8	3.4	41.6

Source: Statistics of Hawaiian Agriculture, Hawaii Agricultural Reporting Service, various issues.

Even after subtracting the past conversions of crop land to urban usages and the projected increases in agricultural land use on Oahu in the year 2015 based on the projections in the LESEA commission report, there are over 12,000 acres of land suitable for crop production not currently in production on Oahu (see Table 2.) If more sugarcane lands become fallow, this number will increase.

**Oahu Crop Acreages
1961 to 1984**

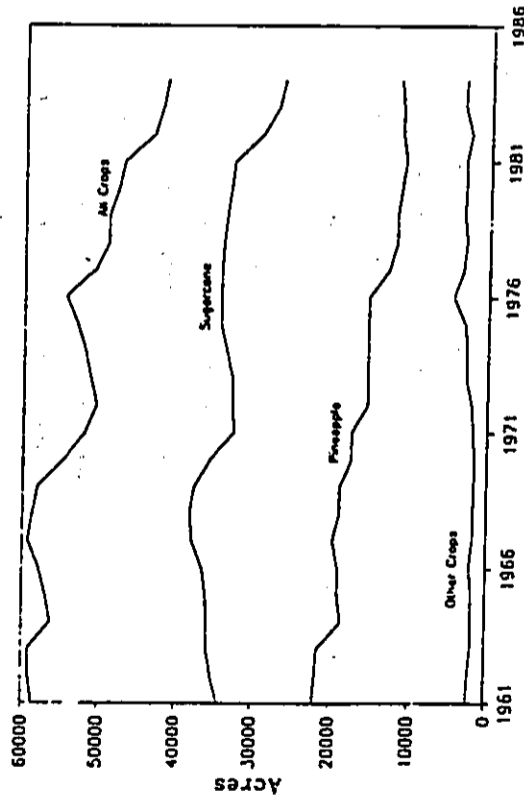


Figure 1

**State Crop Acreages
1961 to 1984**

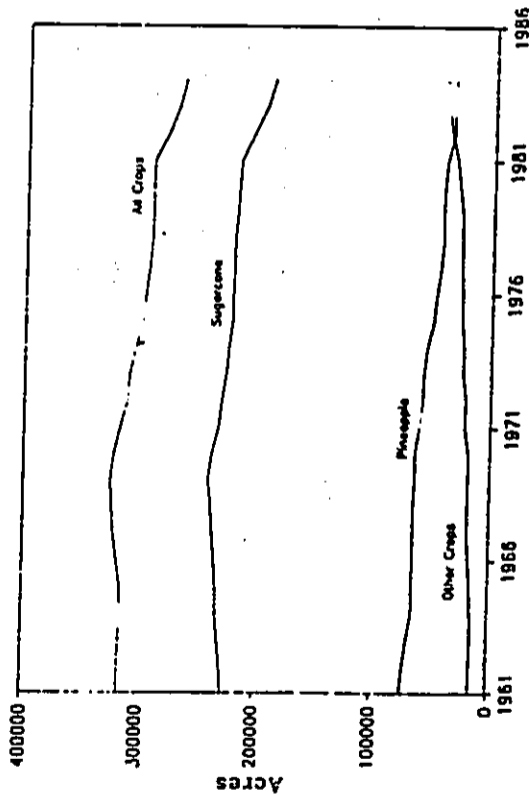


Figure 2

Table 2. Supply and Availability of Crop Lands

	State	Oahu	Neighbor Islands
Acreage Released from Crops Converted to Urban Use ¹	56,800	17,700	41,100
Available	5,700	3,600	1,900
	53,100	13,900	39,200
Projected Increase in Ag. Demand for Land ²			
Year			
1990	6,423	-350	6,773
1995	14,089	433	13,636
2000	20,177	643	19,533
2005	26,396	834	25,562
2015	39,241	1,219	38,022

¹ Oahu total includes: Mililani 1,600 acres; Waipio Gentry 600 acres; H-2 50 acres; Waikole 400 acres; West Beach 300 acres; Miscellaneous 550 acres. Sugarcane withdrawals for the Pearl City area were largely compensated for by new plantings and are therefore excluded. State total is an estimate based on urbanization trends on the Neighbor Islands.

² Based on projected production goals in the LESA Commission Report, February 1985. The base year is 1983. The 1990 and 1995 acreages are taken from the LEA report. The data for 2000 to 2015 are based on the rate of increase implicit in Tables 2 and 3 of the LEA report. The increase in acreage reported above includes the projected increase in all agricultural land use (not just crops), except aquaculture. The most promising aquaculture activities are either brackish or saltwater systems, and these are not appropriate uses for good cropland, particularly if the lands overlay freshwater reserves.

Impact on Pineapple Production

Reaving of the subject lands from pineapple production is not expected to have any impact on the production of pineapple on Oahu. Castle and Cooke Inc. has stated that the acreage that would be lost if the subject parcel is developed would be replaced with lands of equivalent quality. The land that will be substituted is currently in sugarcane. However, Castle and Cooke, Inc., plans to follow a portion of its sugarcane lands in Waialua, and even after a portion of this land is converted to pineapple, Castle and Cooke expects to have surplus land that will be followed (letter from George Yis, President, Castle and Cooke Land Company to D.G. Anderson).

July 16, 1966). The replacement acreage will probably be lands that were converted to sugar production from pineapple production starting about 15 years ago when the pineapple industry was suffering from increased foreign competition and the sugar industry was more profitable. Recently, with the pineapple industry's success in marketing fresh pineapple, the trend on Oahu has reversed, and pineapple acreage has begun to show a slight increase (see Figure 1).

Currently, the subject parcel is irrigated with water from the Waialeale ditch. If the subject parcel is taken out of agricultural production, the water currently used, between 240,000 to 480,000 gallons per day depending on the weather, would become available for other agricultural uses. This is most likely to be on other lands owned by Castle and Cooke or by Oahu Sugar Co. This has the potential of lowering production costs on the lands for which additional water becomes available. However, this will not have a large impact, since the water that would be released is only sufficient to irrigate approximately 27 acres of sugarcane.

Potential Alternative Agricultural Uses

Based on the physical, agronomic, and environmental characteristics of the subject parcel previously discussed, in combination with the history of crop production in Hawaii, the following 24 vegetable crops and 8 fruit and nut crops can be considered to have agronomic potential in the Waialeale area: bittermelon, broccoli, bulb onions, cucumbers, daikon, daaheen, edible ginger root, edible podded peas, eggplant, green peppers, green or snap beans, green onions, green peppers, lettuce (leaf-head types only), mustard cabbage (Kai Choy), red radish, oriental gourds, potatoes, pumpkin and winter squashes, summer squash, sweet potatoes, sweet corn, taro (upland varieties), tomatoes, watermelon, avocado, bananas, guavas, limes, yellow passion fruit, sacadale nuts, papaya, and pineapple. Forage, horti-

ture, and seed production are also agronomically possible. However, agronomic potential (the crop will grow) and economic potential (the crop can be grown for a profit) are not the same. Some of the crops listed have been tried and found to be unprofitable, either because of high production costs, lack of markets, or the availability of less expensive imports. Also, some of the crops that can be grown in the Waialeale area could be grown elsewhere in the State more profitably.

Waialeale has some advantages in the production of fruit and vegetables relative to other areas in the State. The primary advantage is that it is close to the principal market in Hawaii and to transportation links to overseas markets.

There are factors, however, which limit the economic potential of Waialeale for the production of fruit and vegetables. One is the cost and supply of water. Under existing conditions, the most readily available supply of water is from the Oahu Sugar Company. This water would have to be pumped up to the Waialeale fields and this pumping cost is substantial -- exceeding 100 dollars per acre foot. Most crops require about five acre feet of water per year, although some, such as perennial crops, require more. Thus, water pumping costs alone could exceed 500 dollars an acre. If water were to be purchased from the Board of Water Supply at agricultural rates, it would be substantially more expensive. At current agricultural rates, five acre feet of water would cost \$1,126, more than twice as much. This is exclusive of any within-field delivery costs.

Another limiting factor is that the site will be bounded by residential housing on two of three sides once ANFAC's development in Waialeale is completed. Diversified agriculture and residential housing are not compatible land uses for several reasons. One is the required use of pesticides by diversified agriculture. Another is the operation of heavy farm equip-

sent near housing. This is a hazard to children, and the noise and dust are obnoxious to the residents. There is also the potential of residents harvesting some of the crop for their own use. This not only is a cost to the producer, but can be dangerous to the residents if the crop has recently been treated with pesticides. In some cases, the gardens of residents are a source of pests to the commercial operations. Even though agriculture in Hawaii is protected by a "right to farm" law, the operation of commercial farms in close proximity to residential housing increases operating costs relative to farms that are more isolated from urban communities.

A third limiting factor affecting the growth of diversified agriculture is the size of the local market and the difficulties the State has experienced in developing crops for export. These factors are discussed below.

Evaluation of Potential Fruit and Vegetable Crops for Waiole

Crops produced in Hawaii can readily be separated into two groups -- those that are produced for export and those that are produced for local consumption. In terms of crops that can be produced for export, papaya, guava, passion fruit, macadamia nuts, and pineapple can all be produced on lands similar to the subject lands. Besides pineapple, papaya is the only economically feasible export crop and then only if the problems with mosaic virus can be overcome. Papaya is currently being grown on the Ewa plains near Campbell Industrial Park and on fallowed sugarcane lands in Palehua on a trial basis.

Passion fruit is uneconomical to produce because of the high cost of installing trellises. The market for guava is beginning to grow. However, it is still too soon to recommend increases in commercial planting. Also, any increases in plantings are more likely to occur proximate to existing plantings in order to take advantage of existing processing facilities.

Macadamia nuts can be produced more profitably elsewhere in the State. Production in Waiole would require irrigation and the nuts would have to be shipped off-island for processing or a processing facility would have to be constructed.

Several vegetable crops which are imported in great quantities are not climatically suited for production in Waiole because they require cool temperatures for good quality and profitable yields. The following crops would be unsuitable for that reason: Chinese head cabbage, head cabbage, carrots, cauliflower, celery, head lettuce, romaine lettuce, and during most of the year, potatoes. The good storage, long-day and medium-day length onions are also not suitable because they require longer day lengths for proper growth and curing. The high incidence of insect and disease infestations limit the feasibility of producing summer squash and melons except for zucchini and watermelon.

The fruit and vegetable crops which show some potential for commercial production in the Waiole area are listed in Table 3. Also given in Table 3 are the quantities of the product or similar products sold in the Honolulu wholesale market in 1983. These quantities provide a crude estimate of the current demand for these products. The estimates are crude because the data for Honolulu are for aggregates of similar products. For example, all types of bulb onions are listed as "dry onions" and both oriental and American types of cucumbers are listed as "cucumbers." These quantities thus will overestimate the demand for local products since local products are not identical to all imports.

TABLE 3
Agronomically Feasible Crops

Crop	Honolulu Demand (1,000 pounds)	Percent of Demand Met by Local Production	Maximum Percent of Monthly Demand Met by Local Production	Number of Months When Local Production Exceeds 70% of the Market
Crops for the Local Market				
Avocados	1,664	59	77	2
Bananas: Apple	616	100	100	12
Bluefield	91	100	100	12
Chinese	14,505	25	43	0
Beans, Green	804	86	100	9
Bittermelon	97	96	100	11
Broccoli	4,447	8	16	0
Cabbage, Kai Choy	768	96	100	11
Corn, Sweet	485	29	100	4
Cucumbers	3,715	37	87	6
Daikon	1,488	97	100	12
Dasheens	153	94	100	10
Eggplant: Long	496	99	100	12
Round	384	71	92	8
Lettuce, Sesi-head	1,321	100	100	12
Limes	554	6	19	0
Onions: Dry	13,007	5	16	0
Green	829	77	92	8
Peas, Chinese	303	5	18	0
Peppers, Sweet	2,540	37	64	0
Potatoes, Table	20,941	0	1	0
Pumpkins	1,128	10	100	5
Radishes	178	98	100	12
Squash: Oriental	465	84	100	12
Italian	1,606	47	89	3
Sweetpotatoes	1,804	67	96	6
Taro	1,197	15	23	0
Tomatoes	13,356	29	47	0
Watermelon	9,546	78	99	7
Crops for Local and Export Markets				
Ginger Root	1,348	60	100	8
Pineapples	34,130	100	100	12
Papayas	10,579	100	100	12

Source: Honolulu Arrivals, Fresh Fruits and Vegetables, 1963, Market News Service, Hawaii State Department of Agriculture, April 1966.

The next three columns of Table 3 provide information on market conditions that can be used to estimate the potential demand for increased production of the crops. The third column lists the percentage of the goods sold in the Honolulu market which are supplied from in State sources. When local production already supplies the entire market, any increase in production via additional planting will have two immediate effects: (1) the price of the product will fall, making it less profitable or unprofitable to produce; and (2) production elsewhere in the State will decline. That is, there will be a shift in production patterns from regions currently producing the crop to new regions. The total impact of the new planting would be a decrease in the profitability of existing operations and a resulting reduction in scale and a shift in production to the new plantings. The following crops listed in Table 3 fall into this category: eggplant (long), green or snap beans, semi-head lettuce, daikon, dasheen, ginger root (edible), oriental squash, radishes, bittermelon, and cabbage (kai choy).

For several crops, the aspect of new plantings will be similar to the above scenario even if local production is not currently satisfying the local market. For example, crops like tomatoes and some types of cucumbers can only be produced for a profit if they are marketed in the "off-season" when less expensive imports from the mainland and Mexico are not available. Other crops can only be economically produced during certain times of the year. The demand for some products is seasonal also. One example would be pumpkins. Local production satisfies the market except in the month of October. The orange gourds used for Jack-O-Lanterns are different from the pumpkins produced locally and the demand for these is met almost entirely by imports.

An indication of the seasonality of crops and potential demand for new

planting can be obtained by examining the supply of local production relative to imports on a monthly basis. The fourth column of Table 3 gives the percentage of supply in Honolulu of the aggregate product group during the month when local production represents the largest percentage of supply, and the fifth column gives the number of months when local supply exceeds 70 percent of total market supply in Honolulu. Whenever local supply is greater than about seventy percent of market demand, any increase in supply from local sources can be expected to effect prices downward. Whenever local production or demand is seasonal and current production provides over seventy percent of demand for some months this is an indication that increases in local production will start to depress prices. This price decrease will make the new planting a less attractive enterprise and reduce the earning for all plantings of the crop -- both the existing and new planting. Sweet potatoes, green onions, pumpkins, and avocados are crops which are currently imported in significant quantities. However, increases in planting of these crops would be expected to depress market prices.

The three crops listed in Table 3 with the largest demands in the Honolulu market are tomatoes, dry onions, and potatoes. Most of the demand for these products is currently met by imports. This, however, does not necessarily imply that there is a substantial potential for expanded local production of these products. Potato production has been tried on Oahu and found to be unprofitable and thus this is not a likely crop for future expansion.

The demand data listed for dry onions includes several different varieties of onions. Most of the onions currently imported are the medium and long day varieties and are priced below what it would cost to produce bulb onions in Hawaii. The demand for locally produced onions, which must have a higher price in order to be profitable, is limited. The potential

for increased acreage of bulb onions is therefore limited.

Tomatoes can be a very profitable crop when marketed during the time when imports from the mainland and Mexico are scarce. However, when imports are plentiful and cheap, it is difficult to produce them competitively in Hawaii. Thus, there is some room for expansion in the production of tomatoes. However, the planting would have to be managed so as to produce during the late fall and winter. This is not the best agronomic time to grow tomatoes in Hawaii so yields will be low.

The crops for which there is a potential demand for increased acreage and which can be produced in a region with the physical, agronomic, and climatic characteristics of Waiole are listed in Table 4. The second column gives the amount of additional acreage required to meet the entire Honolulu demand for the broad product group. However, for the reasons stated above, meeting such demand is not likely to be economically viable. The figures in the third column take into account the mix of products contained within each product group, the seasonality of local production and demand, and the availability of low-priced competing products from sources outside the State during portions of the year. These numbers represent estimates of the number of acres that could be planted to the respective crop without significantly depressing prices in the local market.

The potential acreage for taro was reduced since the apparent market demand is for wetland and dryland types and only the dryland types are feasible on the Waiole lands. Currently, there is little or no potential for expanded avocado production. Supplies on the mainland have increased dramatically and prices have declined drastically. Also, the U.S.D.A. animal and plant health inspection service (APHIS) no longer permits the export of Hawaii produced-avocados to Alaska.

Table 4. Feasible Crops for Expended Plantings

Crop	Number of Acres Required to Meet 100 Percent of Honolulu Demand for Product Group	Number of Acres of New Plantings Estimated to be Economically Feasible
Avocados	116	0
Bananae, Chinese	543	398
Broccoli	185	80
Cucumbers	32	17
Eggplant, Round	4	1
Lines	54	43
Onions, Bulb	475	5
Onions, Green	7	1
Peas, Chinese	22	17
Peppers, Sweet	53	36
Potatoes, Table	1,632	0
Squash, Italian	38	24
Sweetpotatoes	22	9
Taro	83	10
Tomatoes	187	20
Watermelons	106	106
Total		766
Total net of bananas		368

From the viewpoint of the market, there is definitely a potential for increased production of bananas in the State. However, there are better places to produce bananas than Waialeale. Banana production in areas such as Waialeale would require irrigation. Production costs would be substantially less in areas such as Waianai (Oahu), the Puna and Hilo regions of the Big Island, and on parts of Kauai. Excluding bananas, the total potential demand for new plantings of crops suitable for lands similar to those in Waialeale is 368 acres.

Lands such as Waialeale, however, are not only suitable for the production of fruits and vegetables. They also could be used for the production of floral and nursery products, the production of seed, and the production of forage crops. Livestock uses, with the exception of pasture, are probably not feasible because of the proximity to residential housing.

Floral and Nursery Products

The floral and nursery industry in Hawaii has been expanding rapidly during the recent years. This industry, however, produces a large volume of highly valued products from a very small land area and does not require large acreages. The average size of all floral and nursery operations in the State is under three acres. For these crops, climate is typically more important in choosing a site than land quality. Current expansion of this industry is limited only by market availability and management capability, not by the availability of land. Also, several of the Agricultural Parks being developed make specific provisions for nurseries.

Seed Production

Lands such as Waialeale are suitable for the production of seed for crops such as corn if adequate irrigation water is available. The demand for land for the production of seed corn and other seeds tends to fluctuate depending on climatic conditions elsewhere in the world. It is difficult to plan on a long term demand for such a use and it appears that sufficient lands are available to meet current levels of demand.

Forage Crop Production

Large amounts of grains are imported into the State as livestock feeds. The production of feed grains has not proven to be economically viable in Hawaii. However, the production of forage crops for green chop has potential. Corn for green chop has been produced on the North Shore of Oahu. The principal potential market for the green chop and other forage crops on Oahu is the dairy industry. However, if forage could be produced cheaply enough, the feedlot in Caspberry Industrial Park is also a potential user. Lands such as Waialeale are well-suited for the production of forage crops if sufficient amounts of low-cost water are available. However, the production of forage for green chop on Waialeale is not likely to be an

economically viable activity because of its location. Due to the fact that forage for green chop is a very bulky product and thus expensive to transport, most commercial forage operations are on lands adjacent to the piece where it will be used. The current and potential users of green chop are the feedlot at Barber's Point and the dairies in Waianae and on the North Shore. Both the dairies and the feedlot are located too far from Waiole to make Waiole an optimal location for forage production.

Conclusion

It is not the availability of land that is limiting the expansion of the crops listed in Tables 3 and 4, but rather the size of the market for locally produced crops. The de facto population of the entire State is only slightly more than a million persons and in the principal market area (Oahu), the de facto population is only 825,000 persons. This is a very small market and it does not require substantial acreage to supply such a market, particularly when many popular foods either require temperate climatic conditions not found in Hawaii or can be produced more profitably elsewhere and imported for less than it costs to produce them locally.

Placing the subject lands in an urban use will not have a significant impact on the agricultural sector of Honolulu County or the State. Lands of similar quality and economic potential are currently lying fallow and there are sufficient lands available to meet current and projected future agricultural needs.

References

- The State of Hawaii Data Book: 1984, Department of Planning and Economic Development, February 1985.
- Statistics of Hawaiian Agriculture: Hawaii Agriculture Reporting Service, Honolulu, various issues.
- Honolulu Arrivals: Fresh Fruits and Vegetables 1982, Market News Service, Hawaii State Department of Agriculture, Honolulu, April 1986.
- Land Evaluation and Site Assessment Commission - Final Report, February 1986.
- Agricultural Lands of Importance to the State of Hawaii (revised), Department of Agriculture, State of Hawaii, 1977.
- Detailed Land Classification - Island of Oahu, Land Study Bureau, University of Hawaii, January 1963.
- Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, Soil Conservation Service, U.S. Department of Agriculture, in cooperation with Hawaii Agricultural Experiment Station, University of Hawaii, August 1972.
- "The Resurgence of Hawaii's Pineapple Industry," Economic Indicators, Research Department, First Hawaiian Bank, May/June 1986.

APPENDIX C

**Waiola Estates
Update on Community Issues and Concerns**

**Prepared by
Earthplan**

February 1989

Waioala Estates
Update on Community Issues and Concerns

REPORT SUMMARY

This report updates community issues and concerns on the current proposal for Waioala Estates. Previous proposals were introduced in 1986 (referred to as WE-1) and 1988 (referred to as WE-2). The update analyzes (1) the differences in issues and concerns, based on the changes to the original concept of WE-1, and (2) how the issues and concerns on the proposed project compare to those expressed on WE-1.

**COMPARISON OF POTENTIAL SOCIAL IMPACTS
OF PREVIOUS AND CURRENT PROPOSALS
FOR WAIOLA ESTATES**

Summary of Previous Proposals.

The 1986 plans for Waioala Estates (referred to as WE-1) called for a residential subdivision with 1,500 single family units, 80 percent of which would be priced for families with gap groups incomes. The remaining units would be offered to families and low and moderate incomes. WE-1 was denied approval by the State Land Use Commission in June 1987.

In 1988, the City Department of Housing and Community Development again petitioned the State Land Use Commission. The proposal (referred to WE-2) is very similar to this proposed project. WE-2 contained 1,555 single- and multiple-family residential units, and similar community amenities. The breakdown of market and gap-group housing was similar to that of the proposed project. WE-2 was denied approval by the State Land Use Commission in October 1988.

Comparison of Potential Social Impacts.

Residential Population. The proposed project includes 1,345 residential units. Based on household sizes ranging from 2.8 persons to 3.2 persons, the project will increase Central Oahu's population by an estimated 3,766 to 4,304 persons, which represents a substantial decrease from the 5,700 to 6,000 persons projected in WE-1. This decrease is due not only to a housing unit decrease, but also to a revised mix of housing types.

Central Oahu Development Plan. Since the 1986 population analysis, the General Plan was revised to allow the Central Oahu Development Plan area a population of 148,900 to 164,900 persons by the year 2010. The resulting housing deficit will be absorbed, with the City Council's recent approval of three residential proposals. Like WE-1, the proposed project will therefore exceed the Central Oahu population guidelines.

WAIOLA ESTATES

UPDATE ON COMMUNITY ISSUES AND CONCERNS

**CITY AND COUNTY OF HONOLULU
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT**

**Prepared by
EARTHPLAN**

February 1989

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Waipahu Estates
Update on Community Issues and Concerns

Diversity in housing types. WE-1 was virtually a subdivision of single family detached dwellings, almost all of the units would have been priced for families with gap group incomes.

The mix and price range of the proposed project's residential component are major departures from the WE-1. Three housing types -- 850 single family, 305 townhouse, 190 apartment units -- would house a diverse population, including small, medium-sized and large families, as well as individuals and the elderly. Forty percent of the units will be for gap group families. Another 40 percent will be sold at prevailing market prices. Ten percent will be rental units available to elderly households and another ten percent would be available for sales to families with low and moderate incomes.

Increase in residential amenities and community facilities. The proposed project expands the residential amenities by increasing residential amenities (a district park, and a nine-hole, par-three golf course, with a clubhouse); and providing sites for child care and park-and-ride facilities, as well as an elementary school. In WE-1 proposed residential amenities were limited to a recreational center and park, and a site for an elementary school.

**COMMUNITY ISSUES AND CONCERNS
ON THE PROPOSED PROJECT**

WE-1 Community Issues and Concerns.

WE-1 was highly controversial in 1986. The following were the more prominent community issues raised on WE-1:

- need for affordable housing
- inconsistencies with then-current land use policies
- city's role as developer and "fast track" process
- creation of a homogeneous community
- effect on WE-1's applicants and future residents
- infrastructure inadequacies

Trends in Community Issues.

Since 1986, nearby Miliama Town has remained generally consistent in terms of trends in community issues over the past few years. Its residents continue to encourage improvements to the infrastructure, particularly the roadways prior to implementing new developments.

During the same time frame, Waipahu Neighborhood Board area's concerns began to shift. Although the regional leaders continue to support planned development proposals (they feel this will create a more diverse community), there has also been an increased awareness of infrastructure problems. While the community seems to continue to welcome more residential development, it also is asking

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Waipahu Estates
Update on Community Issues and Concerns

more questions about impacts, particularly regarding traffic. Because some of the anticipated roadway improvements have not yet occurred, residents may feel wary of realizing these improvements in a timely fashion.

Process of Identifying Community Issues on this Project.

To analyze community issues and concerns on the proposed project, two sources were used. Testimonies presented to the State Land Use Commission during hearings held in the summer of 1988 were reviewed because of the conceptual and plan similarities between WE-2 and the proposed project.

Interviews with community representatives were also conducted with (1) individuals who had been previously contacted on WE-1, or (2) had since assumed the organizational positions of previous contacts.

Regional Organizational Positions.

The Land Use Commission received testimony from the Gentry-Waipio Community Area Association and the Waipahu 2000+ Community Council on WE-2.

The Gentry-Waipio Community Area Association strongly opposed the project, because of their community survey results. Respondents generally feared that WE-2 will have a negative impact on property values, and were very concerned about the already saturated traffic corridor. They also did not feel that the City and County is capable of developing Waipio Estates in a manner that will enhance Waipio by Gentry and the planned Waioke Subdivision by AMFAC.

The Waipahu 2000+ Community Council supported WE-2.

A number of community organizations -- which vocally opposed WE-1 -- did not take positions on WE-2. These organizations included Waipahu Neighborhood Board, the Waipahu Community Association, the Waipahu Business Association, and the Miliama-Waipio-Melemanu Neighborhood Board.

Overview of Issues and Concerns Raised by Community Informants.

As with the 1986 study, interviews were held to identify preliminary community issues and concerns. The interviews were not intended to quantify project support or opposition; a controlled poll is recommended for such results. The following summarizes information they provided on issues and concerns:

Improvements Resulting from Project Changes. Almost all of those interviewed felt that the proposed project was a vast improvement over WE-1. The projects positive aspects included (1) the introduction of market-priced housing; (2) diversifying the types of housing; (3) adding major park space along Kamehameha Highway; (4) adding a municipal golf course; and (5) adding community facilities. Community informants also noted that the planning process of the proposed project was a major improvement over the manner in which WE-1 was brought to the community.

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Waiala Estates
Update on Community Issues and Concerns

A few did not want to discuss the plan's revisions because they felt that the project should not proceed because of infrastructure problems.

Overall Traffic Problems. For almost all of those interviewed, traffic remains a major problem. Most of those interviewed felt that no project should be permitted until roadway improvements are in place. A few of those interviewed were resigned to the traffic woes, and felt that the project's merits outweigh these problems.

Government's Role as Developer. Many of those interviewed felt that government should not be involved in any market-priced housing because this segment could be better served by the private developer. The informants were split on whether the City or State should develop gap-group housing. It was generally agreed, however, that houses for families with low and moderate incomes were the responsibility of government entities, since they were not profit-oriented and could withstand losses better.

Effect on Property Values. A few of those interviewed strongly believed that the proposed project would negatively affect their property values. Most interviewed did not share this viewpoint, but they raised this as a common issue. These people felt that the property-value issue is based on lack of information, particularly since a substantial portion of the residential component is intended for market prices. They also pointed out that the Gentry-Waipio community already has affordable housing units, and nearby property values did not seem to be affected.

Consistency with Waipahu's Efforts Toward Community Improvements. Some people interviewed felt that the proposed project is consistent with Waipahu's desire to improve its image, because they feel that the proposed project will contribute to efforts to achieve a more desirable mix of housing types and residents.

Project Reputation. Many of those interviewed pointed out that, in spite of the project's merits, Waiala Estates will continue to be unacceptable because of previous controversy.

Analysis of Issues and Concerns on the Proposed Project.

In general, the proposed project was considered a major improvement over WE-1. Some community members expressed a change in their opinion of the project based on these changes. Others, namely the residents of the nearest existing community, continued to oppose the project because the regional problems, particularly traffic, would be exacerbated by any additional residential development. Also the Gentry-Waipio residents feared that their property values would be negatively impacted because of they did not believe the City capable of building quality houses.

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Waiala Estates
Update on Community Issues and Concerns

The following is an analysis in the community issues on the proposed project, as compared to those on WE-1:

1. **Affordable housing is less of an issue with the proposed project than with WE-1.** Although affordable housing continues to be a major need, other problems, such as traffic, have become equally, if not more, pressing. In the Gentry-Waipio survey, almost half of the respondents wanted *only* market housing.
 2. **Traffic and infrastructure concerns have become more predominant in Waipahu.** Much of this growing apprehension is due to relatively slow-paced improvements to the roadway system, and to a governmental lack of consensus on solving the regional transportation system. Unlike the affordable housing issue, the traffic problem has few solutions being implemented.
 3. **Consistency with land use policies is not a major issue with the proposed project.** For the community informants, inconsistency with land use policies was not a major issue, even though they previously cited this as a reason against WE-1.
 4. **The City's credibility as a quality developer continues to be an issue.** Many of the community informants, as well as the respondents to the Gentry-Waipio survey, expressed their concern that the City was competing with the private sector, and doubted the City's ability to achieve the quality it proposes.
 5. **The proposed project elicits negative reactions because of previous controversy.** The new concept and site plan for the project site do not give "Waiala Estates" a new image. Many people associate the proposed project with WE-1, and would oppose the current efforts simply because of the connection. Additional effort, such as providing a new name and soliciting more community participation, is therefore needed to demonstrate the difference between WE-1 and the proposed project.
 6. **Current regional organizations have not voiced positions on WE-2 or the proposed project.** Thus far, only the Gentry-Waipio Community Area Association has voiced a formal position (strong opposition) on WE-2, and this group would likely oppose the current proposal.
- Other regional organizations, however, have chosen not to voice a formal opinion on the current proposal. Although the proposed project may have addressed the concerns expressed by these organizations, it is likely that, if any position is taken, these organizations would oppose the proposed project because of previous commitments made to the Gentry-Waipio residents.

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- Update on Community Issues and Concerns

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WAIOLA ESTATES

UPDATE ON COMMUNITY ISSUES AND CONCERNS

- 1. BACKGROUND AND PURPOSE**
 - 1.1 Purpose of This Report
 - 1.2 Description of the Current Waiola Estates Proposal

Waiola Estates
Update on Community Issues and Concerns

1 BACKGROUND AND PURPOSE

1.1 Purpose of This Report

The City and County of Honolulu published the Final Environmental Impact Statement: Waiola Estates Subdivision, Waipio, Ewa, Oahu, Hawaii in September 1986. Potential social impacts were studied in A Study of Demographic Impacts of the Proposed Waiola Estates Subdivision, which was prepared by Earthplan and presented in Appendix C of the EIS.

The social impact study discussed the following:

- residential population impacts, relative to (1) islandwide growth projections and population distribution policies and (2) growth trends in Waipahu and Mililani
- change in the character and culture of the neighborhood, considering (1) islandwide priorities and values; (2) the history, census characteristics and changes of Waipahu and Mililani; and (3) regional issues and concerns independent of Waiola Estates.
- community issues and concerns regarding the then proposed Waiola Estates.

Subsequently, that proposal for Waiola Estates, which is hereby referred to as **WE-1** for the purposes of this report, did not receive necessary land use approvals and thus was not implemented.

In 1988, two other proposals for Waiola Estates were presented by the City Department of Housing and Community Development. These proposals were major departures from the 1986 proposal, and share similar characteristics with each other.

A proposed subdivision, referred to as **WE-2** for the purposes of this report, was presented to the State Land Use Commission. This proposal was subsequently denied by the Commission.

A third proposal for the project site followed, and an EIS Preparation Notice for this project was published on December 23, 1988.

This report was prepared for the EIS on the latter Waiola Estates proposal, hereby referred to as the proposed project. Note that, because the proposed project represented a reduction in housing units, and was revised in response to community concerns raised on **WE-1**, the City felt that many of the social impacts of the current proposal would be reduced or mitigated.

Waiola Estates
Update on Community Issues and Concerns

This report updates community issues and concerns on Waiola Estates. The update analyzes:

- the differences in issues and concerns based on the changes to the original concept of **WE-1**, and
- how the issues and concerns on the proposed project compare to those expressed on **WE-1**.

Note that, as shown in Section 2.1, **WE-2** is very similar to the proposed project. Thus, community issues on **WE-2** are considered applicable to possible issues regarding the proposed project.

Sections in this report include:

Section 1.2 describes the proposed project.

Section 2 summarizes **WE-1** and **WE-2** and compares their potential social impacts with those of the proposed project.

Section 3 begins by summarizing the community issues and concerns on **WE-1** and describes community trends since then. This section then presents issues and concerns on the proposal and analyzes these relative to those on **WE-1**.

1.2 Description of the Current Waiola Estates Proposal

Figure A illustrates the conceptual plan. Subject to change, this plan includes:

Project Component	Number of Acres
Single-family residential cluster	106.45
Townhouses	25.60
Apartments	10.64
School & playground	5.00
Child care facility	1.00
Park and ride facility	3.00
Park (neighborhood)	10.00
Park (district)	44.00
9-hole golf course	45.50
Clubhouse	2.70
Reservoir	1.60
Main roadways	13.70
TOTAL NUMBER OF ACRES	269.45

Waiola Estates
Update on Community Issues and Concerns

To ensure that the project continues to primarily benefit families with limited incomes, the City will impose a 10-year restriction on the sale of the affordable units, as required by State law. The City will have the first option to re-purchase if the unit is not owner-occupied, or if the owners wish to sell or transfer their home during this ten-year period. The market priced units will have no purchaser or resale restrictions.

Ten percent of the total units will be available for sale to families with low and moderate incomes. Ten percent will be rental units available to elderly households. The remaining 40 percent will be sold at prevailing market prices. Recreation component.

Two parks are tentatively planned for Waiola Estates.

A district park will be designed to serve Waiola Estates residents, as well as residents of the surrounding communities such as Seaview/Crestview and Gentry-Waipio.

A neighborhood park will primarily serve Waiola Estates residents, and may be developed in conjunction with the elementary school.

A nine-hole, par-three golf course, with a clubhouse, is also tentatively planned.

Community facilities component.

Tentative plans for the proposed project will include three facilities which will provide community services.

A site for an elementary school, with an adjacent playground.

Land has also been set aside for a child care facility. This facility will be adjacent to a park-and-ride facility.

Other project aspects.

Included in the proposed project is the addition of two lanes to Kamehameha Highway, which fronts the project site. This widening will extend from a similar widening to be implemented as part of the adjacent Waikole residential project.

WAIOLA ESTATES

UPDATE ON COMMUNITY ISSUES AND CONCERNS

2. COMPARISON OF POTENTIAL SOCIAL IMPACTS OF PREVIOUS AND CURRENT PROPOSALS FOR WAIOLA ESTATES

2.1 Summary of Previous Proposals

2.2 Comparison of Potential Social Impacts

2 COMPARISON OF POTENTIAL SOCIAL IMPACTS OF PREVIOUS AND CURRENT PROPOSALS FOR WAIOLA ESTATES

2.1 Summary of Previous Proposals

1986 Proposal -- WE-1

The 1986 plans for Waiala Estates (referred to as WE-1) called for a residential subdivision with 1,500 single family units. Proposed community amenities included a recreational center and private park managed by a community association with mandatory membership for the residents, and a site for an elementary school.

A primary feature of Waiala Estates 1 was that 80 percent of the residential units would be priced for families with gap group incomes. The remaining units would be offered to families with low and moderate incomes.

The City Council, through Resolution 86-202 specified minimum lot area, minimum lot width, minimum side and rear yard setback, and maximum lot coverage.

The size of dwellings ranged from 800 to 1,200 square feet of interior living area. The units may be one or two-story structures, and will have covered garages.

WE-1 was denied approval by the State Land Use Commission in August 1987.

1988 Proposal -- WE-2

In June 1988, the City Department of Housing and Community Development again petitioned the State Land Use Commission. This time, the City presented two alternatives, and asked approval of the second alternative only. The first alternative was basically the WE-1 site plan, with a revised mix of housing type and purchase price.

The second alternative (referred to WE-2) is very similar to this proposed project. It included a mix of housing types, including single family, low-rise townhouses and apartments, a par three golf course, a park and ride facility, a child care facility and school and park sites.

WE-2 contained 1,355 residential units. The City proposed that half of these would be priced for families with gap group incomes; ten percent, for the elderly. Forty percent would be sold at the prevailing market rate. The State Land Use Commission subsequently denied this petition.

2.2 Comparison of Potential Social Impacts

Residential population.

The proposed project represents a reduction of residential units, from 1,500 in WE-1, to the currently-proposed 1,345 units. Note that WE-2 contained ten more units than the proposed project; this difference is negligible and is therefore not considered in this comparison.

Based on household sizes ranging from 2.8 persons to 3.2 persons, the proposed project will increase Central Oahu's population by an estimated 3,766 to 4,304 persons.

Population estimates of the proposed project represent a substantial decrease from the 5,700 to 6,000 persons projected in project's market study. This decrease is due not only to a housing unit decrease, but also to a revised mix of housing types. WE-1 contained only single-family detached units; this type of housing would accommodate primarily families, and thus the household sizes are expected to be relatively large.

The mix of housing types proposed by the proposed project would accommodate smaller families, as well as individuals. Thus, the average household sizes are expected to be smaller than previously estimated.

Relative to the Central Oahu Development Plan.

Since the 1986 population analysis, the General Plan population projections and distribution table were revised as follows:

The 2010 population projections from the State Department of Business and Economic Development, which were issued on November 30, 1988, were incorporated (City Council, 1989).

The population distribution table was revised to reflect, among other items, an increase in Central Oahu's share of islandwide 2010 population - from 12.8 - 14.2 percent, to 14.9 - 16.5 percent (City Council, 1989).

These amendments were approved in City Council Resolution 88-404, CD-1, FD-1 on January 23, 1989.

Given these two amendments, the Central Oahu Development Plan area could accommodate a population of 148,900 to 164,900 persons by the year 2010.

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Update on Community Issues and Concerns

It appears that the resulting housing deficit will be absorbed, however, with the City Council's recent approval of three residential proposals, as indicated in Bill No. 171 which is currently awaiting the Mayor's signature. Currently in the Development Plan process, these three projects -- Royal Kunia, Militari - Mauka and Gentry Waiala would collectively provide sufficient housing for the Central Oahu population envisioned in the General Plan.

The proposed project will therefore exceed the Central Oahu population guidelines by approximately 3,800 to 4,300 people. This is similar to the 1986 situation, where the projected WE-1 population would have exceeded the 2005 population targeted for Central Oahu.

Diversity in housing types.

WE-1 was virtually a subdivision of single family detached dwellings. Based on the project's market study, the average household size was anticipated to be 3.8 to 4.0 persons; the typical family would have both spouses, one school-aged child and one grandparent, or two school age children. Single-person households would have been considered only after families were accommodated. Almost all of the units would have been priced for families with gap group incomes.

The mix and price range of the proposed project's residential component are major departures from the WE-1.

1. The proposed project includes three types of housing units which would house a diverse population.
 - Single family detached units would be the predominant housing type and would accommodate medium-sized and large families.
 - Townhouses would accommodate smaller families, as well as individuals.
 - Apartments would provide housing opportunities to elderly couples and individuals.
2. Half of the units will compete in the general residential market.

Increase in residential amenities and community facilities.

In WE-1, proposed residential amenities were limited to a recreational center and park, and a site for an elementary school.

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Update on Community Issues and Concerns

The proposed project expands the residential amenities by:

- increasing residential amenities (a district park, and a nine-hole, par-three golf course, with a clubhouse); and
- providing sites for a child care facility and park and ride facilities.

Like the previous proposal, the proposed project includes a neighborhood park, possibly in conjunction with an elementary school.

The parks would front Kamehameha Highway, thus retaining a functioning greenbelt along this major roadway.

This project also includes the addition of two lanes to Kamehameha Highway, which is another relatively new item.

3 COMMUNITY ISSUES AND CONCERNS ON THE CURRENT PROPOSAL

3.1 WE-1 Community Issues and Concerns

WE-1 was highly controversial in 1986. Media coverage on a number of public meetings indicated basic conflicts between project supporters and opponents. Typically, vocal supporters were applicants and they encouraged public officials to facilitate their access to affordable housing.

Equally vocal, opponents were more diverse. Residents and associations of surrounding neighborhoods and regional communities opposed the project. Islandwide community organizations which focus on planning and environmental issues also opposed the project.

In addition to analyzing media coverage, testimony and meeting minutes, Earthplan also interviewed a number of representatives from the surrounding neighborhoods and region.

The following summarizes community issues raised on WE-1, from both islandwide and community-informant perspectives.

Need For Affordable Housing.

Islandwide perspectives -- Most of the people who publicly supported WE-1 expressed their own personal desire to purchase a home of their own. Islandwide and regional opponents also acknowledged the need for housing; they felt, however, that the problems with the project outweighed the need for housing.

Community-informant perspective -- All those interviewed believed there is a strong need for affordable housing, but most opposed WE-1 because of the anticipated negative trade-offs.

Inconsistencies With Then-Current Land Use Policies.

Islandwide perspective -- Islandwide opponents expressed strong concern that WE-1 was inconsistent with City policies directing growth to Ewa. They pointed out that Central Oahu was not intended for further growth.

Community-informant perspective -- This was also a concern with those interviewed, but not a focal point. At the time of the interviews, other private proposals were supported by the same communities and these projects were also inconsistent with growth policies at the time.

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UPDATE ON COMMUNITY ISSUES AND CONCERNS

3. COMMUNITY ISSUES AND CONCERNS ON THE PROPOSED PROJECT

3.1 WE-1 Community Issues and Concerns

3.2 Trends in Community Issues

3.3 Process of Identifying Community Issues and Concerns for This Report

3.4 Regional Organizational Positions

3.5 Overview of Issues and Concerns Raised by Community Informants

3.6 Analysis of Issues and Concerns on the Proposed Project

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Update on Community Issues and Concerns

City's Role As Developer And 'Fast Track' Process.

Islandwide perspective -- Many of the project's opponents criticized the City's handling of WE-1, particularly the "fast tracking" which would have allowed exemptions permitted under Chapter 359G, HRS.

Community-informant perspective -- Many of those interviewed shared this concern. Those interviewed questioned the City's role as a developer, as well as procedures to "fast-track" this project. There was also an added concern that a City-developed project would not achieve the quality of a private development project and that the anticipated poor quality would negatively impact surrounding property value.

Creation Of A Homogeneous Community.

Islandwide perspective -- This did not seem to be an issue with islandwide supporters or opponents.

Community-informant perspective -- Those interviewed were very concerned that WE-1 would be a homogeneous community which has the potential to be socially and economically incompatible with the planned community of Geotry-Waipio. They also feared that WE-1 would add to the perception that Waipahu is a "low-mood" community.

Effect On WE-1's Applicants And Future Residents.

Islandwide perspectives -- Project opponents expressed apprehension that the project's applicants were being "exploited" in the controversy.

Community-informant perspective -- Some of the community informants felt that the project's affordability "was too good to be true" and that these people would be disappointed if the project cannot offer its intended price. There was also concern that the future residents would be outcasts because of socio-economic incompatibility.

Infrastructure Inadequacies.

Islandwide perspectives -- Islandwide concerns about infrastructure inadequacies were rooted in the issue of incompatibility with land use policies.

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Update on Community Issues and Concerns

Community-informant perspective -- Community informants felt that WE-1 would stress the already-strained infrastructure, particularly the roadway system. People questioned the impacts on drainage, sewerage and water systems as well.

Other Concerns. Raised by community informants, the following were also cited:

- agricultural impacts and loss of open space,
- air pollution due to high number of cars,
- impacts on the ammunition storage in the Navy's reservation,
- the necessity of the project's lot size and
- the unfairness of this project for those who may have already purchased comparable housing at higher prices.

3.2 Trends In Community Issues

The project site is situated in the Waipahu Neighborhood Board area. Because Waipahu Estates lies only a mile away from Milliani Town, the 1986 social impact assessment included both the Waipahu Neighborhood Board area and Milliani Town. In the 1986 study, the differences between Waipahu and Milliani were explored. These distinctions indicated that these two regional communities may view the Waipahu Estates 1 differently. The following summarizes characteristics of these communities:

Waipahu Neighborhood Board area.

The Waipahu Neighborhood Board area has actually two "types" of communities:

Waipahu Town has its roots in the plantation. The town's existing residential makeup evolved from the creation of plantation-subsidized housing in the 1940s and the rise of private and public single family units in the 1960s. Both movements targeted basically the same market and today's statistics show that Waipahu continues to experience difficulty in accommodating upwardly mobile people. When compared to Oahu and Milliani, Waipahu has proportionally more families below poverty level, more female-headed households, larger households, more crowded households, less people in managerial/professional occupations, more in-migrants, and lower educational levels.

The communities above Waipahu Town share a common identity of geographical separation from Waipahu Town because of the highway system. These communities are newer and include the developed communities of Crestview, Gentry-Waipio and Village Park. The people in these communities generally tend to have higher incomes than Waipahu Town residents, and differ on other socio-economic characteristics as well.

Regarding community issues and values at that time, Waipahu leaders wanted their community to attain a more diverse cross section, one which is more representative of the islandwide profile. They strongly lobbied, for example, to amend the General Plan to include Waipahu in the Secondary Urban Center and have supported a number of private developments which include housing suited for upwardly mobile people.

Millilani Town.

Millilani Town has sought from its inception to accommodate a broad spectrum of the housing market. Its residential inventory ranges from architect-designed luxury homes to modest, government-assisted apartment units. Millilani residents have above average incomes, higher education levels and more two-parent households. The poverty level is low in Millilani, and its people are well represented in higher status occupations.

Millilani leaders tended to have a different priority, one which centers around the consistency with land use policies and improvement of existing infrastructure systems before additional projects are approved.

In terms of trends in community issues over the past few years, Millilani Town has remained generally consistent. Its residents continue to encourage improvements to the infrastructure, particularly the roadways. The community's scrutiny of proposed developments continues to be based on how a particular project will further stress the highways, water sources and drainage system.

At the same time, Waipahu Neighborhood Board area's concerns have begun to change.

Consistent Effort to Improve Waipahu's Image.

Waipahu community leaders continue to believe that much of their current needs and problems are related to a perception that this is a relatively poor community. Waipahu community leaders want to change this identity. They perceive that most of the *mauka communities* (above H-1 Freeway) do not share the problems of Waipahu Town because these communities are socially and economically more diverse.

Consequently, Waipahu regional organizations continue to support planned development proposals because they feel this will create a more diverse community.

Increased Awareness of Infrastructure Capacities.

Increasingly, however, Waipahu residents are expressing apprehensions about the effects of new developments on traffic and other issues. Between the early and late 1980s, Waipahu's community issues shifted from being agriculture- and housing-related to traffic- and community "quality"-related.

In a 1982 survey (commissioned by Amfac), Central Oahu and Waipahu Town residents identified the "need to keep Oahu Sugar Company" and the need for more "housing that families making less than \$40,000 can afford" as top priorities. There was a distinct lack of concern about more "high quality housing." Although some concern was expressed about population growth and traffic, many respondents felt considered these "not a problem" in 1982. It was felt that "Many of Waipahu's important problems can be solved by well-planned growth" (Community Resources, 1986).

In a 1988 survey (commissioned by the Waipahu Neighborhood Board), Waipahu residents reacted to the increasing number of care homes in the area, and traffic was no longer "not a problem." Complaints about airplane noise were expressed. Two-thirds of the respondents favored rapid transit (Earthplan, 1988).

This increased awareness of infrastructure problems tempers the community's support of new development projects. While the community seems to continue to welcome more residential development, it also is asking more questions about impact, particularly regarding traffic.

Part of this increased awareness can be attributed to more public discussions about freeway interchanges and other roadway improvements. This awareness can also be due to one's personal experiences with increased traffic and longer commuting time.

Further, Waipahu's support of proposed developments has been based on implementing off-site improvements to the infrastructure, which were then in the planning stage. Because some improvements have not yet occurred, residents may feel wary of realizing these improvements in a timely fashion.

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Update on Community Issues and Concerns

3.3

Process of Identifying Community Issues for This Report

Two sources of information were used to analyze community issues and concerns on the proposed project:

Testimonies presented to the State Land Use Commission during hearings held in the summer of 1988

The testimonies were delivered in response to WE-2. Because of the conceptual and plan similarities between WE-2 and the proposed project, the previous testimony reflects sentiments which are applicable to the proposed project. These testimonies provided the basis for Section 3.4, Organizational Positions.

Interview with community representatives

During the 1986 study, one-to-one interviews with certain individuals were held to gain a better understanding of the community concerns expressed in the media and community meetings. The selected individuals were, at that time, visible in community affairs through their positions in organizations. It was made clear, however, that their views and observations were being solicited as *individuals*, rather than organizational representatives.

Earthplan conducted similar interviews for this study. Every effort was made to interview either (1) individuals who had been previously contacted on WE-1, or (2) had since assumed the organizational positions of previous contacts.

3.4

Regional Organizational Positions

As noted in Section 2.1, proposed project is conceptually identical to WE-2 and very similar in terms of project components. Both proposals represent a major departure from WE-1. They both proposed a diversity of housing types, a substantial portion of housing units at market prices, and large portions of land set aside for recreational amenities and community facilities.

As such, it was assumed that organizational positions on WE-2 would be similar to positions which would be taken on the proposed project (no formal positions were taken on the proposed project at the time of this report [February 1989]).

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Update on Community Issues and Concerns

The Land Use Commission received testimony from the following organizations on WE-2 at hearings held in the summer of 1988.

Gentry-Waipio Community Area Association.

This association represents over 3,000 households located across the project site. As with WE-1, the association opposed WE-2, based on a survey of its members. Highlights of the survey are as follows:

- Respondents were asked "If Waiala Estates is to be developed, which concept would you prefer?" Concept One (basically WE-1 with a 40-60 mix of market and gap group housing) was preferred by 43 percent of the respondents; Concept Two (WE-2), by 45 percent.

- When asked "Do you feel the proposed mix of 40% selling at market value and 60% selling below market value will have an adverse impact on Waipio by Gentry?", 79 percent responded "yes." Sixteen percent responded "no."

- Respondents were then asked to "Briefly state your reasons for your response (to the previous question)." According to the testimony,

"The overwhelming majority indicated a fear of the devaluation of their property. This was followed by comments of the already saturated traffic corridor, with infrastructure to support it." (Cathcart, 1988)

- When asked to recommend a mix of market and gap group housing, 45 percent of the respondents preferred that all or 100 percent of the project should be for market housing. The other respondents either did not select a mix (24 percent), or chose a market/gap mix ranging from 60/40 to 80/20.

- Respondent were asked if they felt that "the City and County is capable of developing Waiala Estates in a manner that will enhance Waipio by Gentry and the planned Waiale Subdivision by AMFAC?" The majority (68 percent) responded "no." About a quarter of the respondents answered affirmatively.

- Those who responded "no," were asked to state their reasons. According to the testimony,

"Here, the majority felt the government should not be in the development business. This was followed by a poor track record and that Waiala was political." (Cathcart, 1988)

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Update on Community Issues and Concerns

- The survey described improvements to Kamehameha Highway and asked "do you feel it would benefit traffic flow on Kamehameha Highway to have the Waipahu On-Ramp to H-1 increased to two lanes?" The majority (86 percent) answered affirmatively.
- When asked to state other concerns about Waiala Estates, most members responded with their concern over the loss of value of their homes, traffic, crime and a lack of confidence in the city administration.

Waipahu 2000 + Community Council.

In 1986, this group advised the City that it would oppose the project if it is intended for low and moderate income families because it felt that Waipahu already had a substantial share of this type of housing. Upon a subsequent presentation, this group did not take a position.

Testimony indicated that this group supported WE-2, however, because it felt that the City "has investigated possible resolutions to our concerns (list provided as part of testimony) reported them to our group... It is possible that all our concerns could be resolved before adversely impacting our community" (Anderson, 1988).

Note that this organization merged with the Waipahu Community Association in the latter part of 1988, and is no longer a separate entity.

Some community organizations did not take positions on WE-2.

The Waipahu Neighborhood Board heard a presentation on WE-2, but did not support or oppose the project. Previously, this Board opposed WE-1.

The Waipahu Community Association, which opposed WE-1, also did not take a position on WE-2.

The Waipahu Business Association, which opposed WE-1, also did not take a position on WE-2.

In 1986, the Milliani-Waipio-Melemanu Neighborhood Board expressed strong concern about WE-1. In 1988, Board members were divided between (1) stating their concerns to the Land Use Commission and (2) "vociferously" opposing the project. Neither position carried, and no position was presented to the Land Use Commission (Central Sun Press, August 1988).

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In interviews on this project, community informants felt that their groups actually "deferred" to the Gentry-Waipio Community Area Association, primarily because of the proximity between that community and the project site and because of previous commitments.

3.5 Overview of Issues and Concerns
Raised By Community Informants

To clarify and expand on the community issues and organization positions on WE-2, the following people were interviewed:

C. O. "Andy" Anderson (Waipahu Neighborhood Board No. 22 [Chair of Planning Committee]; Waipahu Community Association [Director-at-large]; Waipahu Cultural Garden Park [Treasurer])

Paul Cathcart (Gentry-Waipio Community Association [President])

Frances Devera (Seaview resident)

Bob Heffernan (Gentry-Waipio Community Association [Covenant manager and resident]; Waipahu Community Association [Treasurer])

Dave Kaufman (Waipahu Neighborhood Board No. 22 [Chair of Environmental Committee]; resident of Gentry-Waipio)

Greta Kilpenen (Waipahu Business Association [President])

Linda Fritz McKenzie (Milliani-Waipio-Melemanu Neighborhood Board [President])

Brian Suzuki (Waipahu Neighborhood Board No. 22 [Secretary and Acting Chair at the time of interview]; Seaview resident)

As with the 1986 study, these interviews were intended to identify preliminary community issues and concerns. The interviews did not intend to quantify project support or opposition; a controlled poll is recommended for such results.

All of these people were familiar with WE-2, and understood the similarities and differences between that and the proposed project.

The following summarizes information they provided on issues and concerns:

Improvements Resulting from Project Changes.

Almost all of those interviewed felt that the proposed project was a vast improvement over WE-1. For them, the overall result of the changes was an attractive community similar to the nearby planned communities, with community facilities for general public uses.

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They cited the following as positive aspects of the changes included:

- *introduction of market-priced housing*, which would potentially contribute to the improvement of Waipahu;
- *diversifying the types of housing*, so that the project is not a typical "grid-like" subdivision;
- *adding major park space along Kamelameha Highway*, which would serve as a recreational resource, as well as a greenbelt;
- *adding a municipal golf course*, which was strongly desired by some;
- *adding community facilities*, such as the park-and-ride, the school site, and child care facilities;

A few people did not want to discuss the on-site improvements at all because (1) they did not believe the City could actually implement these changes and (2) they felt that the improvements are moot, given the larger regional problems.

Community informants also noted that the *planning process* of the proposed project was a major improvement over the manner in which *WE-1* was brought to the community. They pointed out that:

- the City presented the project to the regional community groups in an orderly fashion;
- the City has been open to discussion on project impacts and possible modifications; and
- some of the recommended changes have been incorporated in the recent plans.

Overall Traffic Problems.

For almost all of those interviewed, traffic remains a major problem. Two different perspectives on the traffic problems were shared:

1. Most of those interviewed felt that *no project* should be permitted, if it will add cars to the regional roadway system. They were particularly concerned that the City Council recently approved three residential projects, with little evidence that the roadway system will improve in the near future. These people felt that current roadway

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improvements plans primarily address existing problems -- the addition of cars above the existing population has yet to be addressed.

Thus, these people felt that the proposed project would add to the congestion, and therefore should not be allowed to proceed. Some people added, however, that if some traffic relief were to occur, then the project would be more acceptable.

2. A few of those interviewed were resigned to the traffic woes, and felt that the project's merits outweigh these problems. They admitted, however, that they were probably the minority.

Government's Role as Developer.

Many of those interviewed felt that government should not be involved in any market-priced housing. They felt that both the City and State should leave that market segment to the private developer, which could build quality houses more efficiently.

The informants were split on whether the City or State should develop gap-group housing. Some felt that government entities were best equipped to absorb possible development losses. Others felt that government's participation had a negative effect on private development efforts.

It was generally agreed, however, that houses for families with low and moderate incomes were the responsibility of government entities, since they were not profit-oriented and could withstand losses better.

Effect on Property Values.

A few people strongly believed that their property values would be negatively affected by the proposed project. They felt that the City was incapable of building attractive homes, and that Waiala would cause a decrease in nearby property values.

Most did not share this viewpoint, but they raised this issue because it has been a commonly-held criticism among project opponents. These people felt that the property-value issue is based on lack of information, particularly since a substantial portion of the residential component is intended for market prices.

They suggested that the City (1) demonstrate its ability to produce quality housing and (2) produce real property information which shows the effect of other government-developed housing projects on nearby property values. Those who visited the City's West Loch project were impressed with the housing quality.

Waiala Estates
Update on Community Issues and Concerns

Consistency with Waipahu's Efforts Toward Community Improvements.

Some people interviewed felt that the proposed project is consistent with Waipahu's desire to improve its image. They pointed out that, previously, they feared that WE-1 would have perpetuated an undesirable community identity; thus, they opposed WE-1.

Because of the project revisions, however, they feel that the proposed project will contribute to efforts to achieve a more desirable mix of housing types and residents.

Project Reputation.

Many of those interviewed pointed out that, in spite of the project's merits, Waiala Estates will continue to be unacceptable because of WE-1, as well as lingering suspicions and doubts, would make it difficult to change people's positions.

3.6 **Analysis of Community Issues and Concerns
on the Proposed Project**

In general, the proposed project was considered a major improvement over WE-1. Some community members expressed a change in their opinion of the project based on these changes. Others, namely the residents of the nearest existing community, continued to oppose the project because the regional problems, particularly traffic, would be exacerbated by any additional residential development. Also the Gentry-Waipio residents feared that their property values would be negatively impacted because of they did not believe the City capable of building quality houses.

The following is an analysis in the community issues on the proposed project, as compared to those on WE-1:

1. Affordable housing is less of an issue with the proposed project than with WE-1.

WE-1 often represented a conflict between the community need for affordable housing and the perceived negative project impacts. For many, the potential negative impacts outweighed the need for affordable housing.

The proposed project did not elicit the same high degree of conflict either in the WE-2 testimony, or in the community informant interviews.

Waiala Estates
Update on Community Issues and Concerns

The community informants felt that, although affordable housing continues to be a major need, other problems, such as traffic, have become equally if not more pressing. In the Gentry-Waipio survey, almost half of the respondents wanted *only* market housing.

This apparent decrease in concern over affordable housing may be attributable to three circumstances which have evolved since WE-1:

- In the governmental land use approval process, particularly in the State Land Use Commission, the requirements for affordable housing have increased for all Central Oahu and Ewa developments.
- Communities are more interested in integrating affordable housing units in a total development project, rather than projects which offer only low-priced units.
- Other projects offering a substantial amount of affordable housing, such as West Loch and Kapolei Villages, are currently being implemented.

2. Traffic and infrastructure concerns have become more predominant in Waipahu.

As pointed out in Section 3.2, Waipahu community leaders have expressed increased concern over infrastructure inadequacies, particularly those of the roadway system. The Waipahu Neighborhood Board survey indicates that a majority of Waipahu residents favor rapid transit. Also, development proposals are increasingly scrutinized from the standpoint of infrastructure impacts.

Much of this growing apprehension is due to relatively slow-paced improvements to the roadway system, and to a governmental lack of consensus on solving the regional transportation system. Unlike the affordable housing issue, the traffic problem has few solutions being implemented.

The traffic issue therefore continues to be a regional problem which affects the community's acceptance of new residential developments.

Waipaho Estates
Update on Community Issues and Concerns

3. Consistency with land use policies is not a major issue with the proposed project.
As Section 3.1 points out, WE-1 was highly criticized for its inconsistency with the population target of the Central Oahu Development Plan area. At that time, the project's projected population would have exceeded the guideline, because the already-approved developments would have provided sufficient housing units to reach the guideline.
Given the City Council's recent approvals of additional developments, this situation may recur with the proposed project. The recently-approved housing units are expected to bring Central Oahu's population to the revised population guideline approved in January 1989.
For the community informants, however, inconsistency with land use policies was not a major issue, even though they previously cited this as a reason against WE-1.
They felt that the difference between the 1986 situation and the current proposal is timing. The City Council did not approve the additional housing units until after the proposed project was presented. Some of the informants criticized the approval of those projects, with the proposed project already in the process and the existing traffic and other problems.
4. The City's credibility as a quality developer continues to be an issue.
Many of the community informants, as well as the respondents to the Gentry-Waipaho survey, felt that the City should not be in the housing business. They expressed their concern that the City was competing with the private sector, and doubted the City's ability to achieve the quality it proposes.
5. The proposed project elicits negative reactions because of previous controversies.
The new concept and site plan for the project site do not give "Waipaho Estates" a new image. The controversy with WE-1 has left a strong impression with Waipaho residents, particularly those in Gentry-Waipaho. Community informants felt that many people associate the proposed project with WE-1, and would oppose the current efforts simply because of the connection.
Further, many of the respondents to the Gentry-Waipaho survey (see Section 3.4) continue to assume the predominant presence of low-priced housing, given their apprehensions about property

Waipaho Estates
Update on Community Issues and Concerns

6. Current regional organizations have not voiced positions on WE-2 or the proposed project.
Presumably, organizational positions on WE-2 would be similar to those which would be taken on the proposed project.
Thus far, only the Gentry-Waipaho Community Area Association has voiced a formal position on WE-2. The group strongly opposes that project, and would likely oppose the current proposal.
Other regional organizations, however, have chosen not to voice a formal opinion on the current proposal. Both the Waipahu and the Mililani-Waipaho-Melemanu Neighborhood Boards, as well as the Waipahu Community and Business Associations, vocally registered their dissatisfaction with WE-1. None of these groups took a position on WE-2, even though presentations have been made.
According to the community informants, reasons for this "non-position" vary. The Waipahu Neighborhood Board did not take a vote last year because the Land Use Commission decision preceded their meeting date; the Mililani-Waipaho-Melemanu Neighborhood Board could not reach a consensus on a position.
Although the proposed project may have addressed the concerns expressed by these organizations, the community informants felt that the organizational positions on WE-1 would likely be applied to the proposed project. It was felt that previous commitments to the Gentry-Waipaho Community Area Association would prevail.

Waioala Estates
Update on Community Issues and Concerns

REFERENCES

- C. O. "Andy" Anderson, President of Waipahu 2000+ Community Council. *Testimony Relating to Waioala Estates*. Presented to State Land Use Commission. Dated June 29, 1988.
- Paul Cathcart, President of Genity Waipio Community Association. *Letter to State Land Use Commission and State Department of Business and Economic Development regarding the Proposed Waioala Estates Project*. Letter dated July 28, 1988.
- Central Sun Press. *"Militant board takes no Waioala stand."* August 4-10, 1988.
- City and County of Honolulu City Council. *"A Bill For An Ordinance To Amend Portions Of The Development Plan For Central Oahu."* Bill No. 171, CD-1, FD-1. Introduced October 3, 1988.
- City and County of Honolulu City Council. Resolution *"Relating to Amending the General Plan of the City and County of Honolulu."* Resolution 88-404, CD-1, FD-1. Approved January 32, 1989.
- City and County of Honolulu Department of Housing and Community Development. *Environmental Impact Statement Preparation Notice for the Waioala Estates Subdivision, Waipio, Oahu, Hawaii*. Honolulu, Hawaii. December 15, 1988.
- Community Resources, Inc. *A Socio-Economic Assessment of the Proposed Village Park Expansion*. Prepared for Waitec Development Company. Honolulu, Hawaii. January 1986.
- Community Resources, Inc. *Socio-Economic Impact Assessment for the Proposed West Loch Estates Subdivision and West Loch Golf Course and Shoreline Park, Ewa Hawaii*. September 1987.
- Earthplan. *A Study of Demographic Impacts of the Proposed Waioala Estates Subdivision*. Prepared for the Department of Housing and Community Development, City and County of Honolulu. Hawaii. July 1986.
- Earthplan. *Royal Kunia Phase II: Social Impact Assessment*. Prepared for Halekua Development Corporation. Honolulu, Hawaii. December 1988.
- Reverend Newton W. Kerney, Chair of the County Advisory Commission on Housing and Community Development. *Letter to Mr. Teofilo Phil Tachian, Chair, Land Use Commission*. Letter dated June 23, 1988.
- Samuel S. H. Lee, State Representative, District 12. *Testimony Relating to A88-623 -- Waioala Estates*. Presented to State Land Use Commission. Dated August 9, 1988.

APPENDIX D

Traffic Impact Report

For

The Proposed Waiola Estates Project

Prepared by

Austin, Tsutsumi & Associates, Inc.

February 1989

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TRAFFIC IMPACT REPORT
FOR THE PROPOSED
MAIOLA ESTATES PROJECT

PREPARED FOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

BY
AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS * SURVEYORS
HONOLULU, HAWAII

FEBRUARY 1989

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EXHIBITS

The proposed Waiola Estates Project is a 1,345 dwelling unit residential development sponsored by the Department of Housing and Community Development of the City and County of Honolulu. It is located amidst other new and growing residential developments, such as Waipio Gentry to the east, Milliani to the North, and Mailele to the south. Access would be provided on Kamehameha Highway opposite the access roadways to the Waipio Gentry Development. The Waiola Estates' primary collector road would lead to the Waipio Interchange (currently under construction) on Interstate Route H-2 and the proposed Paia Interchange on Interstate Route H-1.

The Waipio Interchange is expected to divert existing and new traffic generated by the Waipio Gentry Subdivision from the Waiawa Interchange ramps to Interstate Route H-2. Similarly, the Paia Interchange is expected to attract existing Waipahu traffic and new Mailele traffic from the Waiawa Interchange ramps to a point on Interstate Route H-1, west of Waiawa Interchange. The proposed widening of Kamehameha Highway between Waipahu Street and Ka Uka Boulevard and the signalization of major intersections would mitigate much of the site access problems currently experienced and those expected from new and expanding developments along Kamehameha Highway. The construction of the Waipio Interchange on Interstate Route H-2 and the Paia Interchange on Interstate Route H-1 is expected to decrease the future traffic demand on Kamehameha Highway and the Waiawa Interchange ramps.

The traffic generated by the proposed Waiola Estates Project is expected to increase the inbound AM peak hour traffic by 8.7% on Kamehameha Highway; by 2.9% on Interstate Route H-1; and by 2.2% on Interstate Route H-2. During the

PM peak hour of traffic, the proposed project is expected to increase outbound traffic demand by 7.8% on Kamehameha Highway; by 4.4% on Interstate Route H-1, and by 4.07% on Interstate Route H-2.

Ewa and Central Oahu have been designated for population growth. Until Ewa develops as a viable secondary urban center, Central Honolulu will remain the primary employment center. The proposed Waiala Estates Project comprises only a small portion of the growth planned for Central Oahu and Ewa. Residential growth in these areas would result in an increase in commuter traffic to and from Central Honolulu. Given a commitment to build affordable housing, the site's location, whether in Waiala, Ewa, or Waiānae, would result in the same traffic impacts on traffic along the Pearl City Corridor. Finally, the Waiala Estates Project fills a demand for affordable housing which is evident among the "ohana" type housing or multiple household dwelling units in Central Oahu and West Oahu. Future Waiala residents, currently living in the region under these conditions, would represent a redistribution of population, thereby not increasing overall traffic in the region.

The establishment of secondary urban centers in Ewa and Central Oahu represents a long-range solution to the daily commuter traffic congestion to and from Honolulu. However, since population growth in a region is expected to precede economic growth, the increase in peak period traffic to and from the Honolulu area is an immediate concern and will continue to be so in the near future. Coordinated efforts to maximize the people-moving capabilities of existing transportation facilities are needed, such as those improvements proposed by the City and State transportation departments. Improving existing highway facilities, encouraging ride-sharing programs, expanding the existing

bus system, and ultimately constructing a high capacity mass transit system would all contribute to the mitigation of "rush" hour traffic.

TRAFFIC IMPACT REPORT
FOR THE PROPOSED
MAIOLA ESTATES PROJECT

I. INTRODUCTION

A. Purpose and Scope

The purpose of this study is to identify and assess the impacts of traffic generated by the proposed Maiola Estates Project in the Waipahu-Waipio area. This report presents the findings and recommendations of this traffic study which include:

1. A brief description of the proposed project.
2. An evaluation of the existing conditions.
3. Trip generation characteristics of the proposed project.
4. Identification and assessment of the traffic impacts in the vicinity, resulting from the proposed project, superimposed over projected conditions.
5. The relative traffic impacts during the existing AM and PM peak hours on the highway system.
6. Recommendations to mitigate the traffic impacts identified in this study.

B. Location

The proposed Maiola Estates Project is located immediately west of the Waipio Gentry Subdivision. The 269.45 acre site is

identified as Tax Map Key: 9-4-02:1. It is bordered by Kamehameha Highway and the Waipio Gentry Subdivision to the east, Kipapa Gulch to the north and west, and the Maikela development to the south. Exhibits 1 and 2 show the project's location and immediate vicinity.

C. Description of the Proposed Project

The proposed Maiola Estates Project consists of 1,345 dwelling units. The residential project is proposed by the Department of Housing and Community Development of the City and County of Honolulu to provide "affordable housing".

The proposed project would consist of:

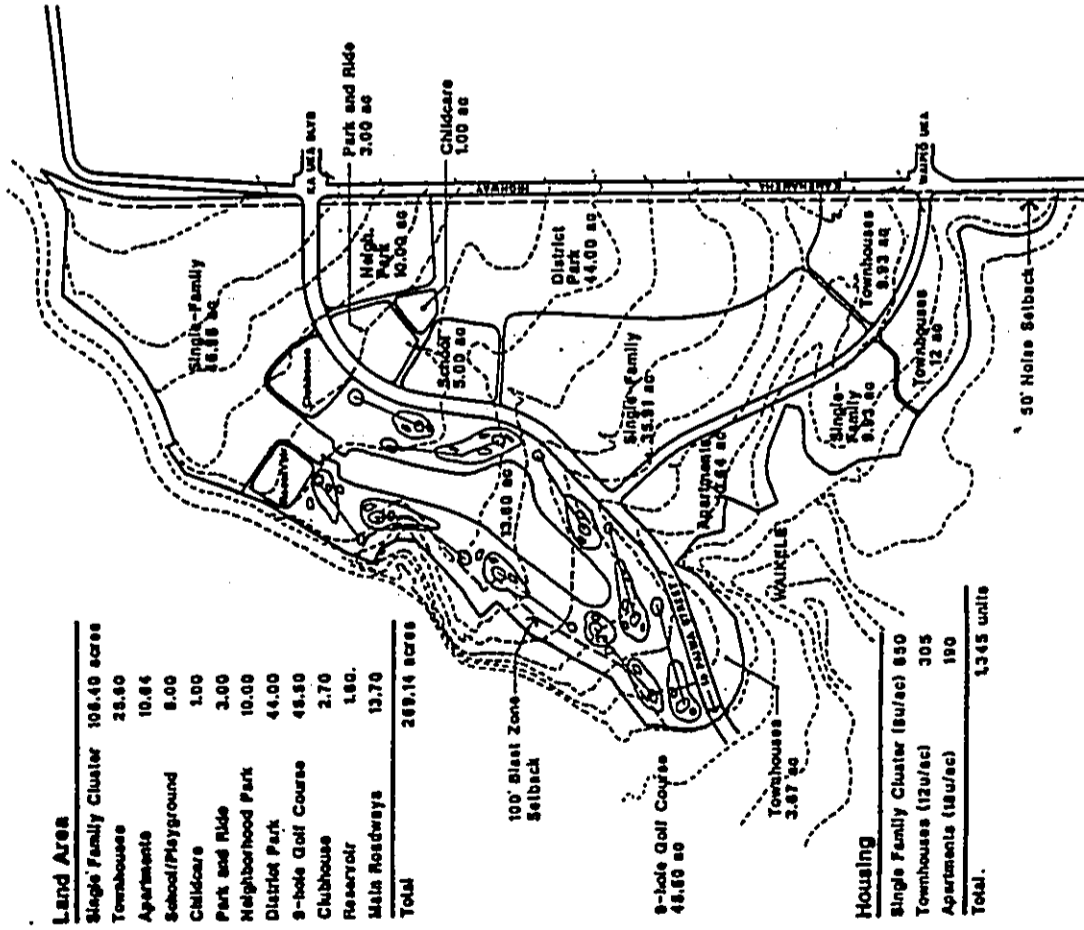
- 538 dwelling units - Single Family Housing (market-priced)
- 312 dwelling units - Single Family Housing (affordable)
- 305 dwelling units - Townhouses (affordable)
- 130 dwelling units - Elderly Housing
- 60 dwelling units - Rental Apartment
- 1,345 dwelling units - Total

The project would also include a 150-stall park-and-ride facility, 54 acres of park land, a 13.60 acre golf course, school and childcare facility. Exhibit 3 shows the proposed site plan.

The project's roadway network includes two major collector streets connecting to Kamehameha Highway at existing intersections at Ka Uka Boulevard and Waipio Uka Street. These street names will be adopted for the purpose of this report to describe the respective collector street extensions for the proposed Maiola Estates Project.

RECEIVED AS FOLLOWS

Land Area	106.49 acres
Single Family Cluster	28.60
Townhouses	10.64
Apartments	8.00
School/Playground	1.00
Childcare	3.00
Park and Ride	10.00
Neighborhood Park	44.00
District Park	48.50
9-hole Golf Course	2.70
Clubhouse	1.60
Reservoir	13.70
Main Roadways	
Total	289.14 acres



Housing	1345 units
Single Family Cluster (161/ac)	850
Townhouses (121/ac)	305
Apartments (181/ac)	190
Total	1,345 units

From Kamehameha Highway, the Ka Uka Boulevard Extension proceeds westward, then southward through the project site, intersecting with the Maipio Uka Street Extension. Ka Uka Boulevard Extension would continue southward to connect with the Palwa Street Extension, which begins at the proposed Palwa Interchange on Interstate Route H-1, and extends northward through the proposed Waikale Development. Ka Uka Boulevard, through Maipio Gentry, will connect to the proposed Maipio Interchange on Interstate Route H-2. The Waioia Estates Project would have three access points to the freeway system: the Maiawa Interchange via Kamehameha Highway; the Maipio Interchange and the Palwa Interchange.

D. Basis of Study

The present development plan for the proposed project calls for full build-out and occupancy of the project by 1993. Therefore, this study's traffic assessment will be based upon the Year 1993 conditions.

By the Year 1993, it is assumed that Maipio Gentry will reach full development. The Waikale Development, proposed by Amfac Property Development Corp., is conservatively assumed to reach full build-out and occupancy as described in the "Traffic Impact Report for the Proposed Waikale Development Master Plan", September 1985, prepared by Austin, Tsutsumi & Associates, Inc.

Traffic projections for the Year 1993, without the proposed project, were developed using linear regression techniques and based upon the historical traffic count data obtained from the

November 22, 1988

North

0 200 400 800

Graphic Scale in Feet

WAIOLA ESTATES

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

TRAFFIC IMPACT REPORT FOR THE PROPOSED WAIOLA ESTATES PROJECT

AT&A
AUSTIN, TSUTSUMI & ASSOC., INC.
TRAFFIC ENGINEERS - PLANNERS - DESIGNERS

PROPOSED DEVELOPMENT PLAN

EXHIBIT 3

State Department of Transportation. The HALLI 2005 traffic projections were not available at this writing and the HALLI 2000 traffic projections were no longer considered to be valid; therefore, an independent analysis is presented herein.

II. EXISTING CONDITIONS

A. General

The project site is currently fallow. The proposed Waioala Estates Project would be located amidst new, growing and mature residential communities in Central Oahu including Milliani, Waipio Gentry, and Crestview/Seaview, and the proposed Waioala Development.

Current and future employment opportunities in the region include: the Milliani High Technology Park, an industrial park in Waipio Gentry, a business park in Waioala, the Campbell Industrial Park Expansion, the new deep draft harbor in Ewa, the Kapolei secondary urban center and the West Beach Resort.

B. Roadways

The existing roads within the project site are primarily for agricultural purposes. At the present time, access to the site is provided only by Kamehameha Highway, which fronts its eastern boundary.

Kamehameha Highway is a three-lane arterial highway between Milliani Town and the Waioala Interchange, with one lane in each direction and a center lane providing a passing lane or an exclusive left-turn lane. At Waipahu Street, Kamehameha Highway becomes a four-lane, divided highway facility as it connects to

the Waioala Interchange. A third lane is added by the eastbound off ramp of Interstate Route H-1. The three lanes separate, one leading to east bound Kamehameha Highway through Pearl City; the second connecting to the east bound on ramp to Interstate Route H-1; and the third lane connecting to west bound Farrington Highway. There is no direct connection from south bound Kamehameha Highway to west bound Interstate Route H-1.

North bound, Kamehameha Highway is fed by single-lane ramps from east bound Farrington Highway, west bound Kamehameha Highway and east bound Interstate Route H-1. West bound Interstate Route H-1 traffic headed for north bound Kamehameha Highway must first exit at the Waipahu off ramp onto west bound Kamehameha Highway, then turn onto the connecting ramp to north bound Kamehameha Highway.

The Waioala Interchange is a freeway-to-freeway interchange between Interstate Route H-1 and the south terminus of Interstate Route H-2. Farrington Highway and Kamehameha Highway are other major arterials making freeway connections at this interchange.

C. Traffic

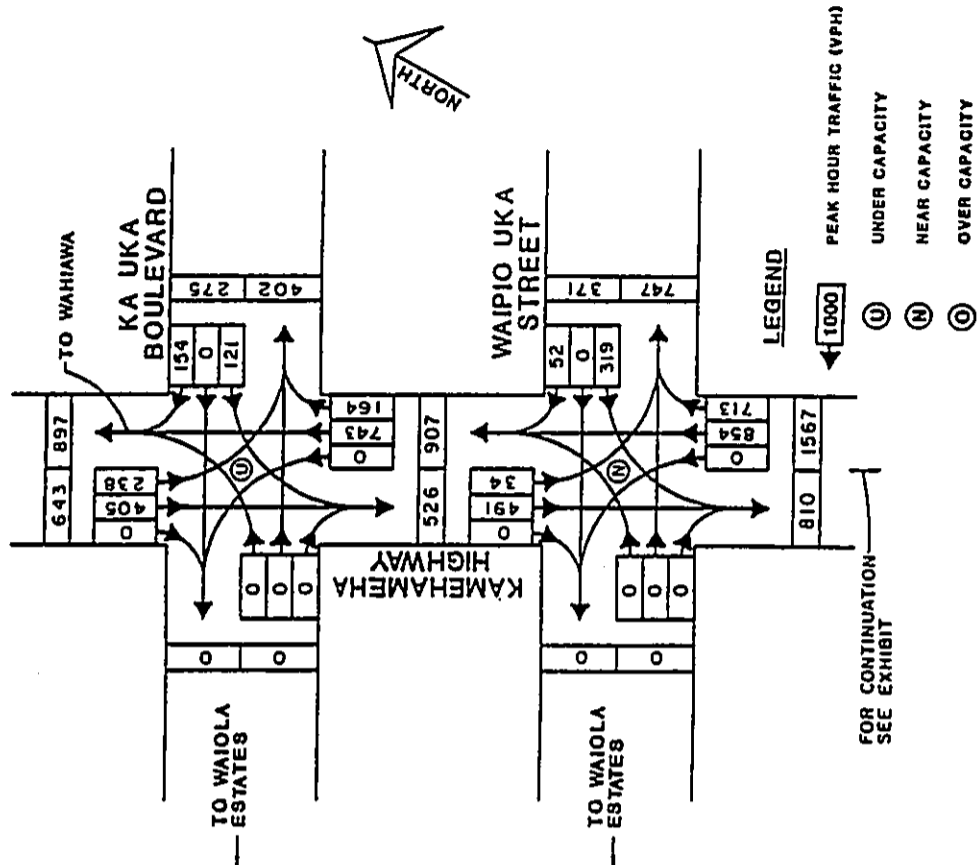
1. General

A manual traffic count survey was conducted on Tuesday, April 1, 1986 at intersections along Kamehameha Highway during the peak periods of traffic between Ka Uka Boulevard and Waipahu Street. The 1986 data were updated with traffic data collected in 1987, 1988 and 1989. Exhibits 4 and 5 show the existing AM peak hour traffic conditions. Exhibits

6 and 7 show the existing PM peak hour traffic conditions. Additional count data were obtained from the State Department of Transportation on Kamehameha Highway, Interstate Route H-1, Interstate Route H-2 and Waiea Interchange. The inbound (Honolulu bound) peak period in the morning begins about 5:30 AM and continues through 8:00 AM with the inbound traffic tapering off and outbound traffic increasing. The afternoon peak period begins around 3:30 PM and continues past 6:00 PM.

For the purposes of this report, the intersection analysis was performed using the Planning Analysis procedure for signalized intersections presented in the Highway Capacity Manual (HCM) Special Report 209, Transportation Research Board, 1985. This method is a broad evaluation of the capacity of an intersection without considering the specific signalization design. It provides a basic assessment of whether or not intersection capacity would be exceeded, given a set of traffic demand volumes and roadway geometrics. Further discussion on capacity analysis is contained in the Appendix. Since most of the unsignalized intersections in the study area are being planned for future signalization, the Planning Analysis procedures provide a more uniform assessment for the highway network.

Freeway and ramp capacities will be based on 1800-2000 vehicles per hour per lane for planning purposes.

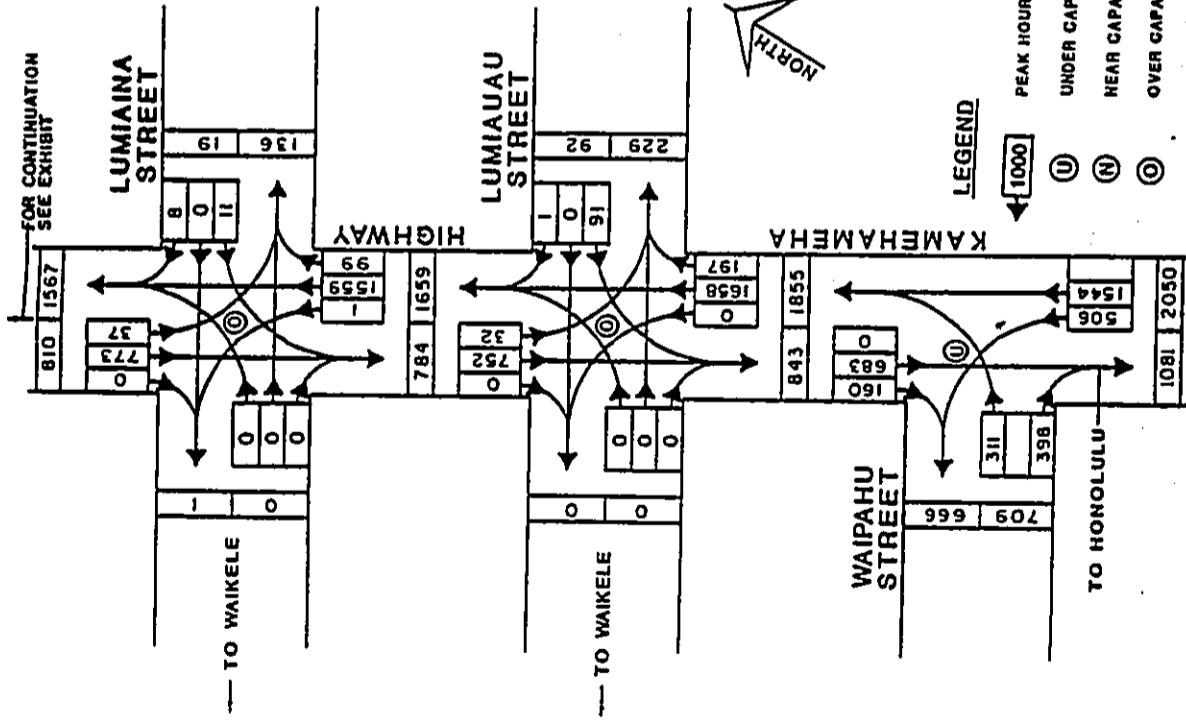


DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
TRAFFIC IMPACT REPORT
FOR THE PROPOSED
WAIOLA ESTATES PROJECT

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ENGINEERS, ARCHITECTS • PLANNERS • 2010

EXISTING P.M. PEAK HOUR TRAFFIC

EXHIBIT 6



2. Morning Peak Period

AM peak period traffic moves well along Kamehameha Highway. However, the intersections between Waipahu Uka Street and Lumiauau Street operate at "over capacity". Downstream of Waipahu Street, a problem for inbound motorists occurs at the east bound on ramp to Interstate Route H-1, where south bound Kamehameha Highway traffic merges with Waipahu traffic from east bound Farrington Highway.

3. Afternoon Peak Period

During the afternoon peak period, bottleneck conditions occur on Kamehameha Highway north bound at Waipahu Street. The two north bound lanes on Kamehameha Highway merge to one lane north of Waipahu Street, queuing traffic onto connecting ramps.

North of Waipahu Street, traffic on Kamehameha Highway is heavy, but moves well. The Kamehameha Highway interseptions at Lumiauau Street and Lumaiaina Street operate at capacity.

III. TRIP GENERATION

A. General

The trip generation resulting from the proposed Waiala Estates Project is based upon rates developed by Austin, Tsutsumi & Associates, Inc. for the State Department of Transportation and published in the "Development of Site-Oriented Trip Generation Rates for Oahu" and by trip rates developed by the Institute

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT CITY AND COUNTY OF HONOLULU TRAFFIC IMPACT REPORT FOR THE PROPOSED WAIOLA ESTATES PROJECT	AIA AUSTIN, TSUTSUMI, & ASSOC., INC. <small>REGISTERED ENGINEERS - HAWAII, OAHU</small>	EXHIBIT
	EXISTING P.M. PEAK HOUR TRAFFIC (CONT'D)	7

of Transportation Engineers (ITE) and published in the informational report on "Trip Generation, Fourth Edition - 1987". These empirical rates are based upon commonly used independent variables which describe trip generation potential in terms of land use intensity. This methodology makes no assumptions about trip purpose, household size, or auto ownership.

Full build-out of the proposed project is expected by 1993. Because of the relatively rapid rate of development, trip generation for the development was analyzed in its entirety.

8. Trip Generation Characteristics

The proposed Watola Estates Project is expected to generate 12,465 trip ends per day. During the morning peak hour, 368 vph are expected to enter the site and 717 vph are expected to exit. During the afternoon peak hour, 778 vph are expected to enter the site and 534 vph are expected to exit. Table 1 shows the trip generation characteristics for each of the components of the proposed project. Table 2 shows the trip generation totals for the project.

TABLE 1. SUMMARY OF TRIP GENERATION RATES

LAND USE TYPE: Single-Family Housing (Market-Priced) Dwelling Unit = 538				
VARIABLE:	TRIP RATE	OAHU TRIP RATE	ADJUSTED TRIP RATE	VEHICLE TRIPS
Average Weekday Vehicle Trip Ends	8.98	8.98	8.98	4831
Peak Hour of Adjacent Street Traffic				
AM Between 7 and 9	0.17	0.17	0.17	91
Exit	0.59	0.59	0.59	317
Total	0.76	0.76	0.76	409
PH Between 4 and 6	0.59	0.59	0.59	317
Exit	0.29	0.29	0.29	156
Total	0.88	0.88	0.88	473

LAND USE TYPE: Single-Family Housing (Affordable) Dwelling Unit = 312				
VARIABLE:	TRIP RATE	OAHU TRIP RATE	ADJUSTED TRIP RATE	VEHICLE TRIPS
Average Weekday Vehicle Trip Ends	12.37	12.37	12.37	3859
Peak Hour of Adjacent Street Traffic				
AM Between 7 and 9	0.25	0.25	0.25	78
Exit	0.63	0.63	0.63	197
Total	0.88	0.88	0.88	275
PH Between 4 and 6	0.53	0.53	0.53	165
Exit	0.41	0.41	0.41	128
Total	0.94	0.94	0.94	293

LAND USE TYPE: Condominium (Affordable) Dwelling Unit = 305				
VARIABLE:	TRIP RATE	OAHU TRIP RATE	ADJUSTED TRIP RATE	VEHICLE TRIPS
Average Weekday Vehicle Trip Ends	7.19	7.19	7.19	2193
Peak Hour of Adjacent Street Traffic				
AM Between 7 and 9	0.13	0.13	0.13	40
Exit	0.42	0.42	0.42	128
Total	0.55	0.55	0.55	168
PH Between 4 and 6	0.46	0.46	0.46	140
Exit	0.13	0.13	0.13	40
Total	0.59	0.59	0.59	180

TABLE 1. SUMMARY OF TRIP GENERATION RATES (CONTD.)

LAND USE TYPE: Elderly Housing		OAHU		ADJUSTED		VEHICLE	
ITE LAND USE CODE: 250	Dwelling Unit = 130	TRIP RATE	TRIP RATE	TRIP RATE	TRIP RATE	TRIP RATE	TRIPS
VARIABLE: Average Weekday Vehicle Trip Ends		3.30		3.30		429	
Peak Hour of	AM Between 7 and 9	0.20	0.20	0.20	0.20	0.20	26
Adjacent Street Traffic	PM Between 4 and 6	0.20	0.20	0.20	0.20	0.40	26
Total		0.40	0.40	0.40	0.40	0.40	52

TABLE 1. SUMMARY OF TRIP GENERATION RATES (CONTD.)

LAND USE TYPE: Rental Apartment		OAHU		ADJUSTED		VEHICLE	
ITE LAND USE CODE: 210	Dwelling Unit = 60	TRIP RATE	TRIP RATE	TRIP RATE	TRIP RATE	TRIP RATE	TRIPS
VARIABLE: Average Weekday Vehicle Trip Ends		5.48		5.48		329	
Peak Hour of	AM Between 7 and 9	0.12	0.29	0.12	0.29	0.41	7
Adjacent Street Traffic	PM Between 4 and 6	0.34	0.16	0.34	0.16	0.50	20
Total		0.46	0.45	0.46	0.45	0.91	27

TABLE 1. SUMMARY OF TRIP GENERATION RATES (CONTD.)

LAND USE TYPE: Park-and-Ride		OAHU		ADJUSTED		VEHICLE	
ITE LAND USE CODE: 90	Parking Stall = 150	TRIP RATE	TRIP RATE	TRIP RATE	TRIP RATE	TRIP RATE	TRIPS
VARIABLE: Average Weekday Vehicle Trip Ends		4.18		4.18		626	
Peak Hour of	AM Between 7 and 9	0.80	0.20	0.80	0.20	0.76	91
Adjacent Street Traffic	PM Between 4 and 6	0.19	0.82	0.19	0.82	0.68	23
Total		0.99	1.02	0.99	1.02	1.44	113

TABLE 1. SUMMARY OF TRIP GENERATION RATES (CONTD.)

LAND USE TYPE: City Park		OAHU		ADJUSTED		VEHICLE	
ITE LAND USE CODE: 210	Acre = 54	TRIP RATE	TRIP RATE	TRIP RATE	TRIP RATE	TRIP RATE	TRIPS
VARIABLE: Average Weekday Vehicle Trip Ends		3.66		3.66		198	
Peak Hour of	AM Between 7 and 9	0.80	0.20	0.80	0.20	0.65	35
Adjacent Street Traffic	PM Between 4 and 6	0.50	0.50	0.50	0.50	0.81	9
Total		1.30	0.70	1.30	0.70	1.46	44

TABLE 2. TRIP GENERATION TOTALS

Average Weekday Vehicle Trip Ends		OAHU		ADJUSTED		VEHICLE	
ITE LAND USE CODE: 210	Acre = 54	TRIP RATE	TRIP RATE	TRIP RATE	TRIP RATE	TRIP RATE	TRIPS
Peak Hour of	AM Between 7 and 9	0.80	0.20	0.80	0.20	0.65	35
Adjacent Street Traffic	PM Between 4 and 6	0.50	0.50	0.50	0.50	0.81	91
Total		1.30	0.70	1.30	0.70	1.46	126

IV. TRAFFIC ASSIGNMENT

A. General

Trip distribution is based upon directional traffic demands observed on the highway network during peak periods. The trip distribution is shown in Table 3.

TABLE 3 - TRIP DISTRIBUTION

Peak Hour	Origin/Destination (VPH)		
	East	West	North
AM	Entering	79 (24.5%)	61 (19.0%)
	Exiting	113 (34.4%)	127 (38.2%)
PM	Entering	195 (66.3%)	131 (43.5%)
	Exiting	87 (28.3%)	145 (47.5%)

The traffic assignment techniques used in this study are based upon traditional methods of assigning traffic flows onto the highway network based upon major destination points and the shortest path to each destination.

B. Highway Network

The 1993 highway network is assumed to include:

1. Widening of Kamehameha Highway from Waipahu Street to Waipio Uka Street to provide two lanes in each direction and exclusive left and right turn lanes at all intersections.
2. Widening Kamehameha Highway from Waipio Uka Street to Ka Uka Boulevard to provide two lanes in each direction and exclusive left turn lanes at each intersection.
3. The signalization of major intersections on Kamehameha Highway.

4. Waipio Interchange on Interstate Route H-2 at the Hilliani Cemetery Road Overcrossing as proposed by the State Department of Transportation.

5. Paia Interchange on Interstate Route H-1 at the Paia Street Undercrossing as proposed by Amfac Property Development Corp.

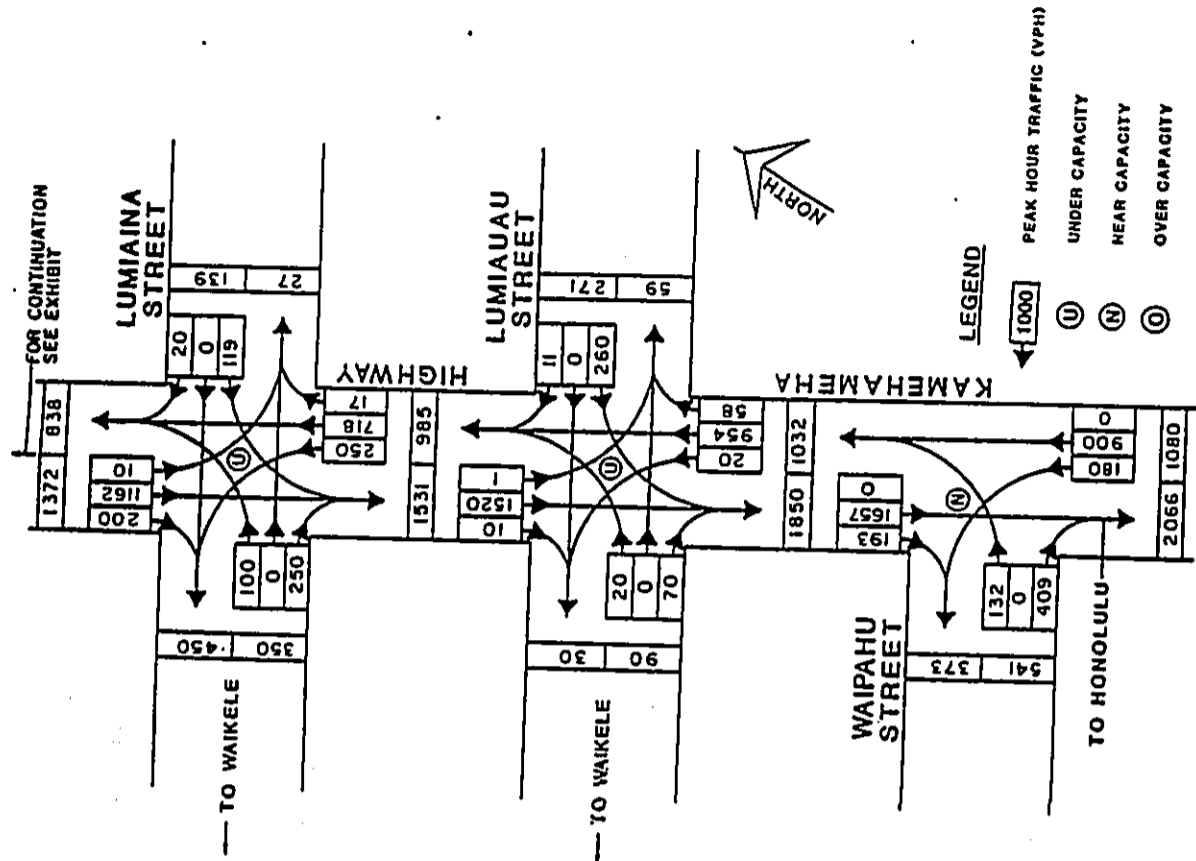
Completion of the proposed Paia Street Extension connecting with the Ka Uka Boulevard Extension through the proposed Malola Estates Project is expected by the Year 1993.

C. Traffic Projections

The 1993 traffic conditions are based upon extrapolation of historical traffic count data using linear regression techniques. Peak hour conditions were derived from current traffic count data. Peak hour traffic conditions without the proposed project are shown on Exhibits 8 through 15.

The opening of both the Waipio and Paia Interchanges would significantly improve traffic operations along Kamehameha Highway during both peak hours of traffic. However, the intersection of Kamehameha Highway and Waipio Uka Street would still operate at capacity during the AM peak hour. During the PM peak hour, Kamehameha Highway between Waipahu Street and Ka Uka Boulevard would operate at under capacity conditions.

Inbound Interstate Route H-1, west of the Malawa Interchange, would operate at capacity during the AM peak hour. Interstate Route H-2, north of the Malawa Interchange, would continue to have adequate capacity for both the AM and PM peak hour



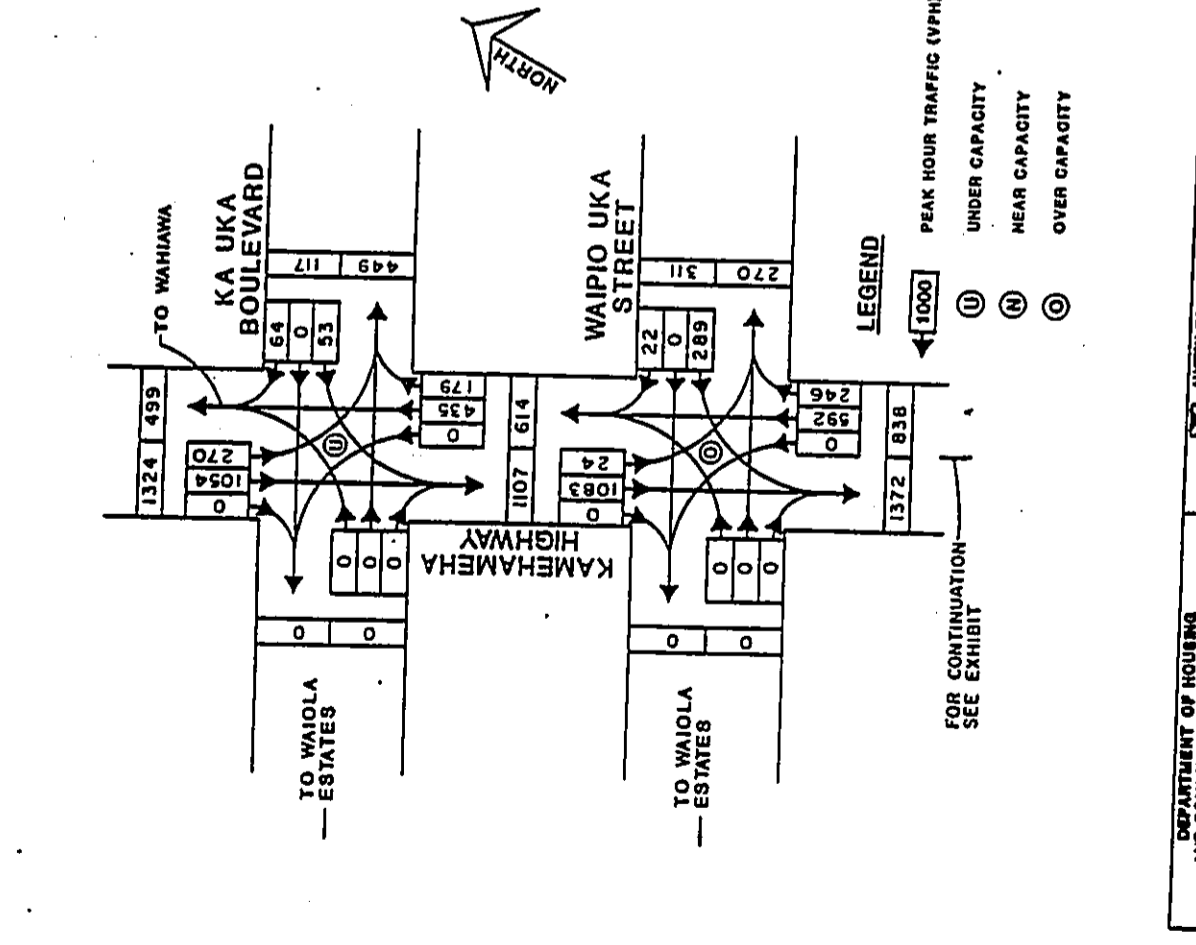
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EXHIBIT 8

PROJECTED A.M. PEAK HOUR TRAFFIC WITHOUT PROJECT



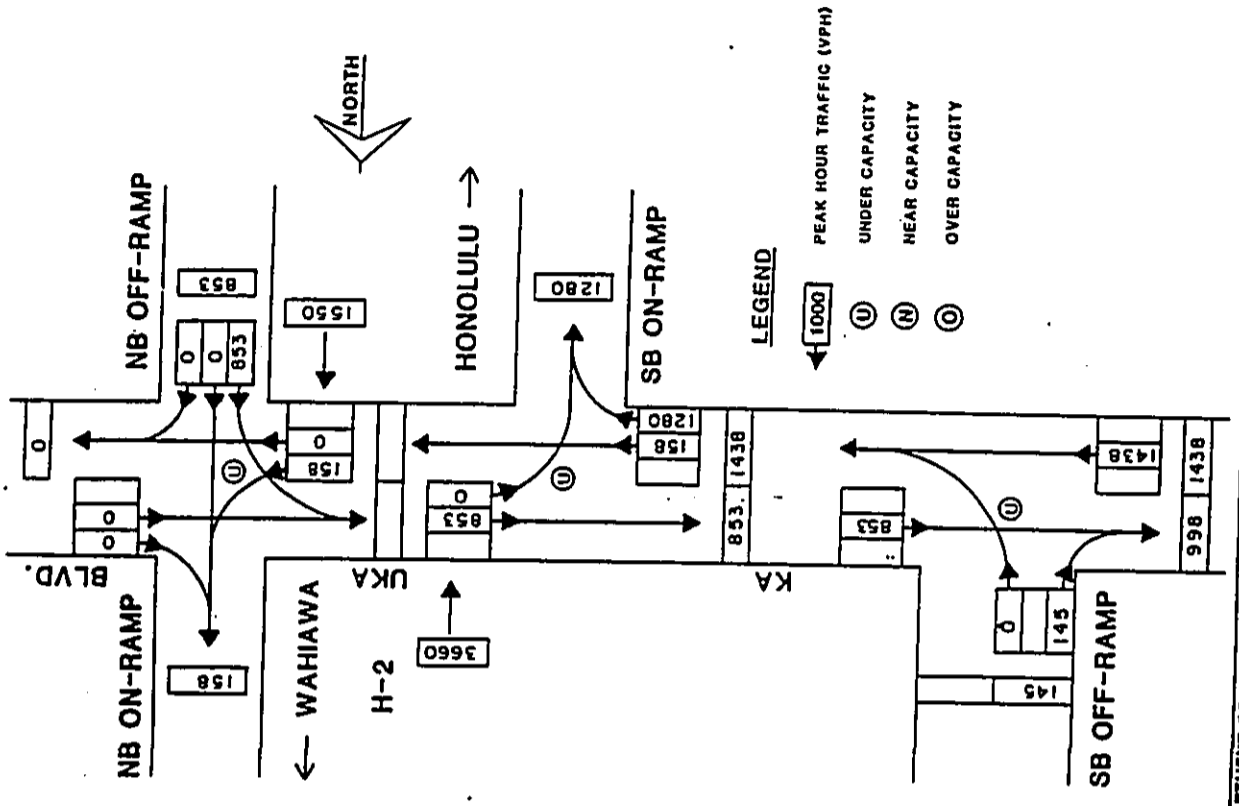
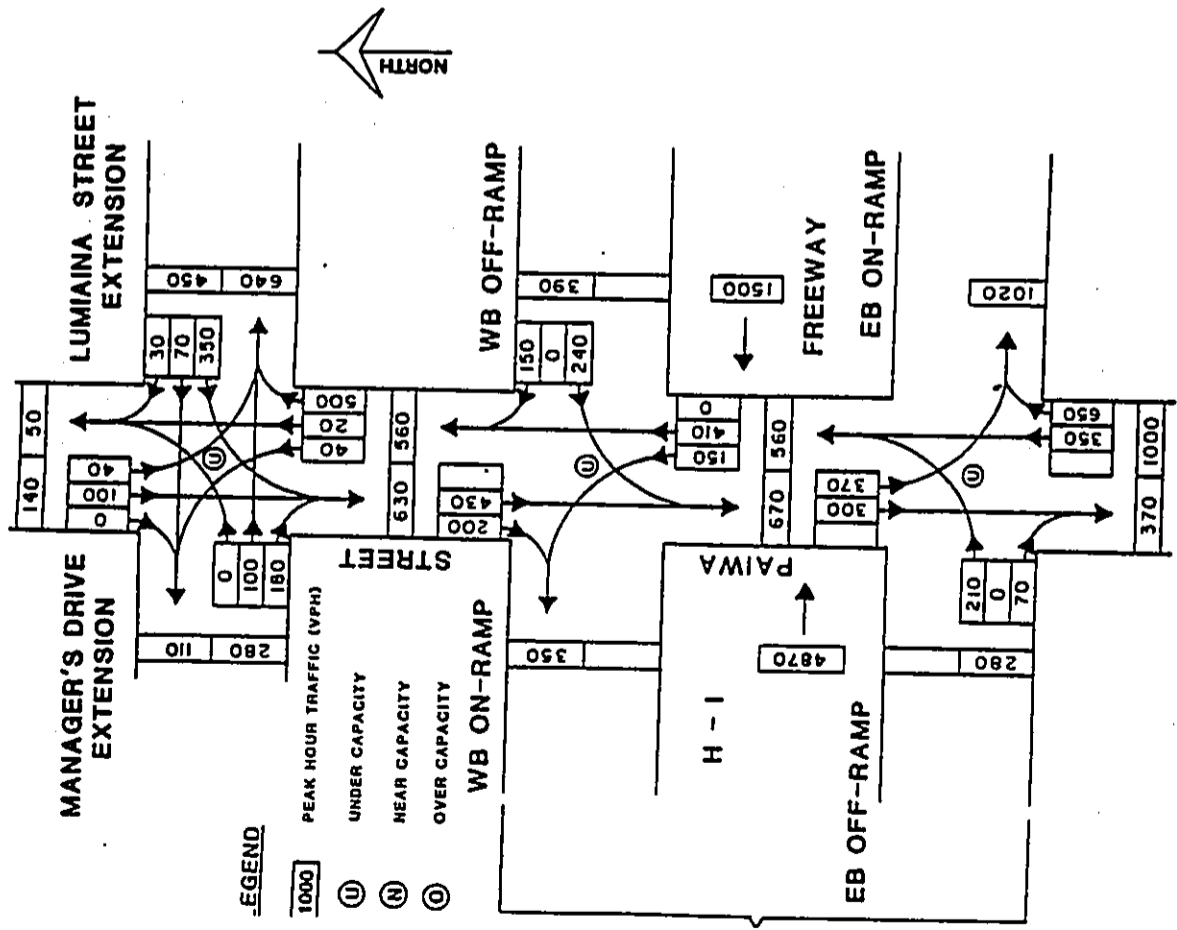
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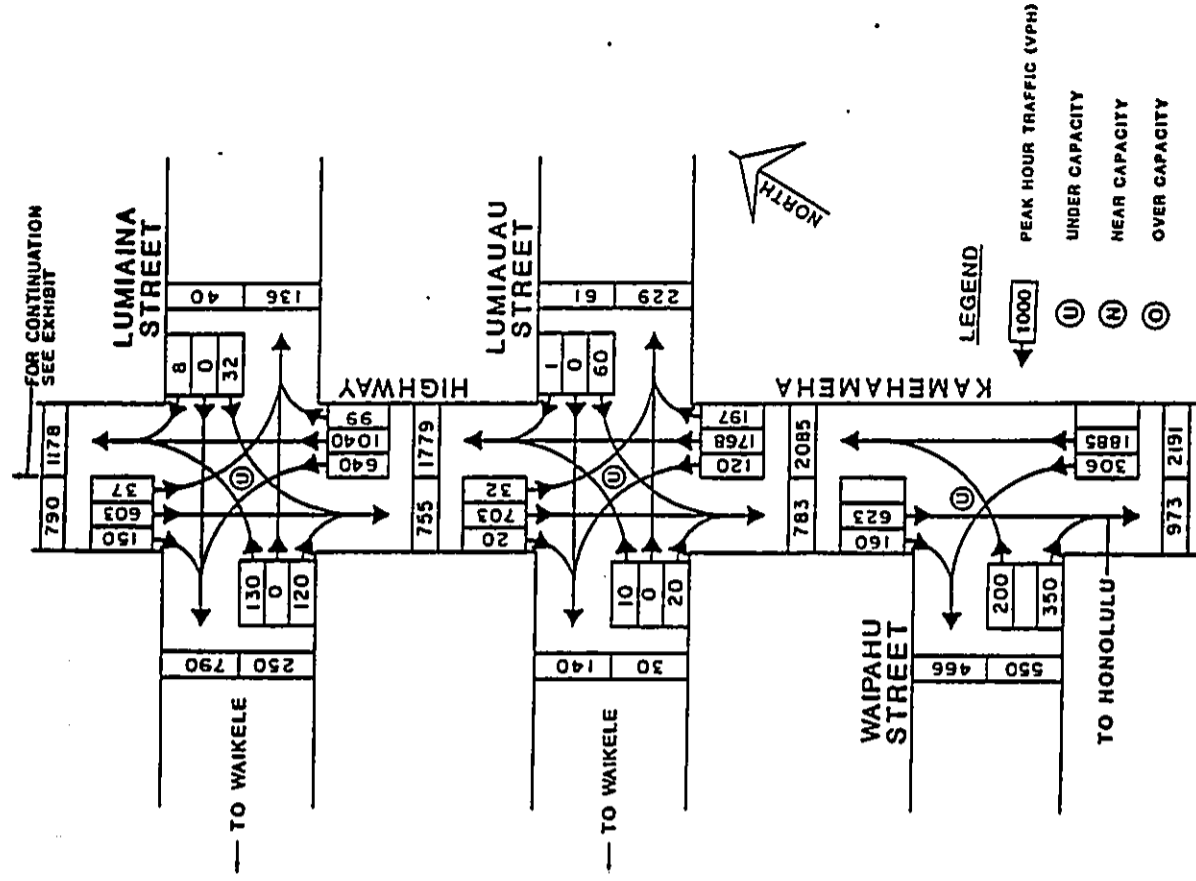
AUSTIN, TRUTSUMI, & ASSOC., INC. CONSULTING ENGINEERS - 198111-0012

EXHIBIT 9

PROJECTED A.M. PEAK HOUR TRAFFIC WITHOUT PROJECT (CONT'D)



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

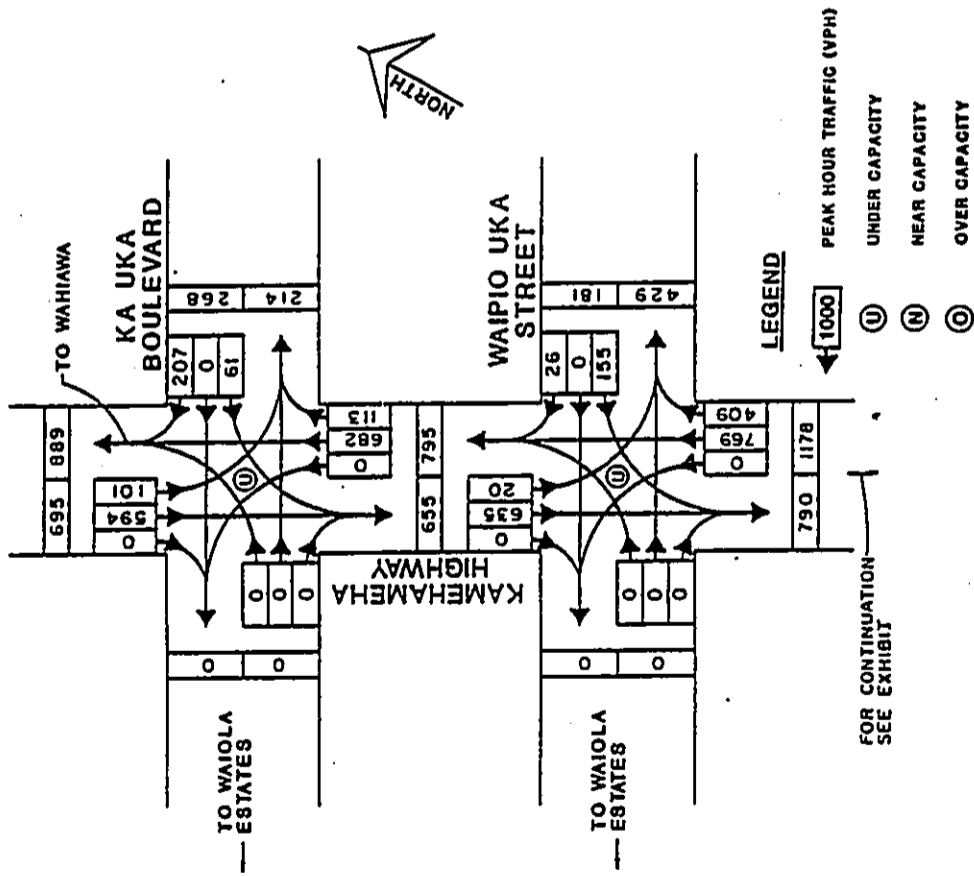


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 REGISTERED ENGINEERS - SURVEYORS

EXHIBIT **13**

PROJECTED P.M. PEAK HOUR TRAFFIC WITHOUT PROJECT (CONT'D)

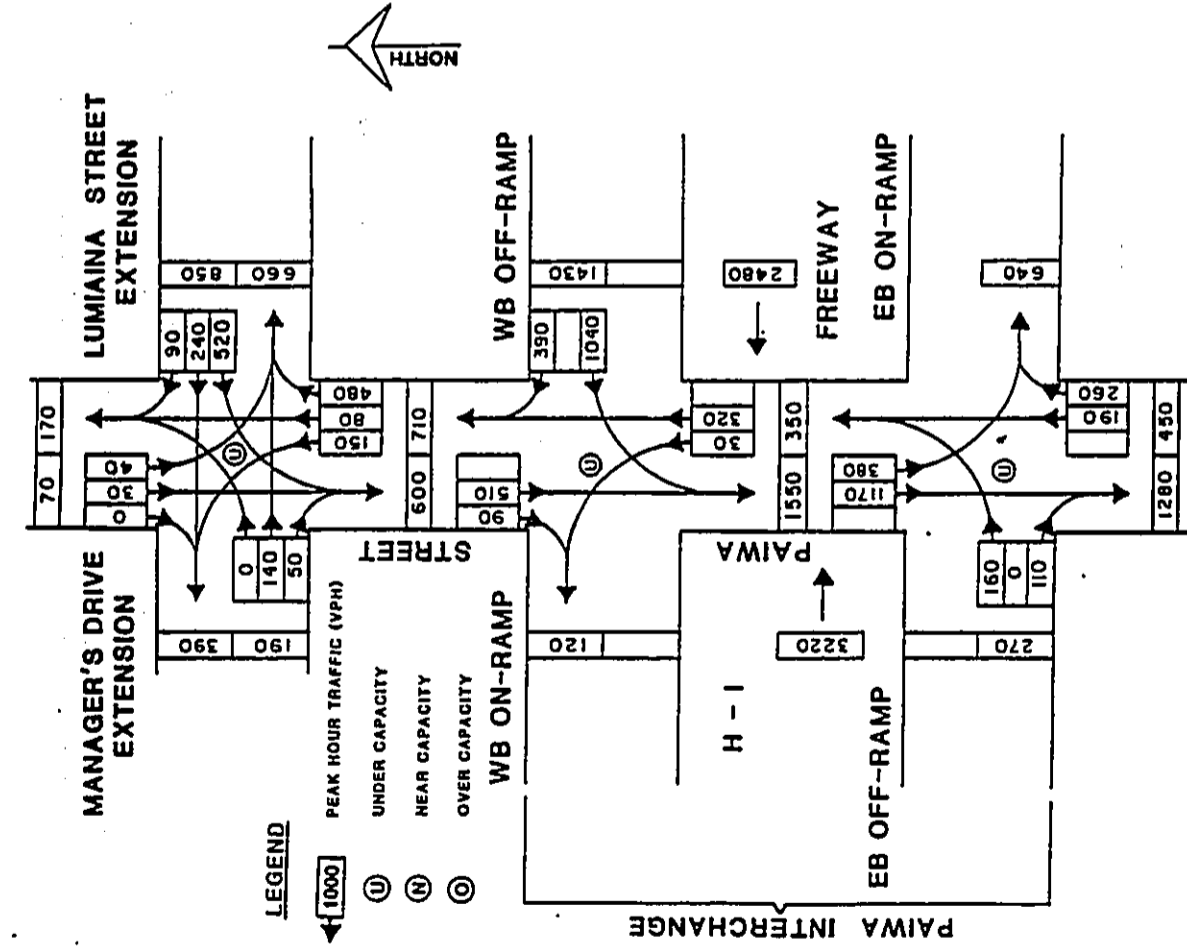


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AUSTIN, TRUTSUMI, & ASSOC., INC.
 REGISTERED ENGINEERS - SURVEYORS

EXHIBIT **12**

PROJECTED P.M. PEAK HOUR TRAFFIC WITHOUT PROJECT

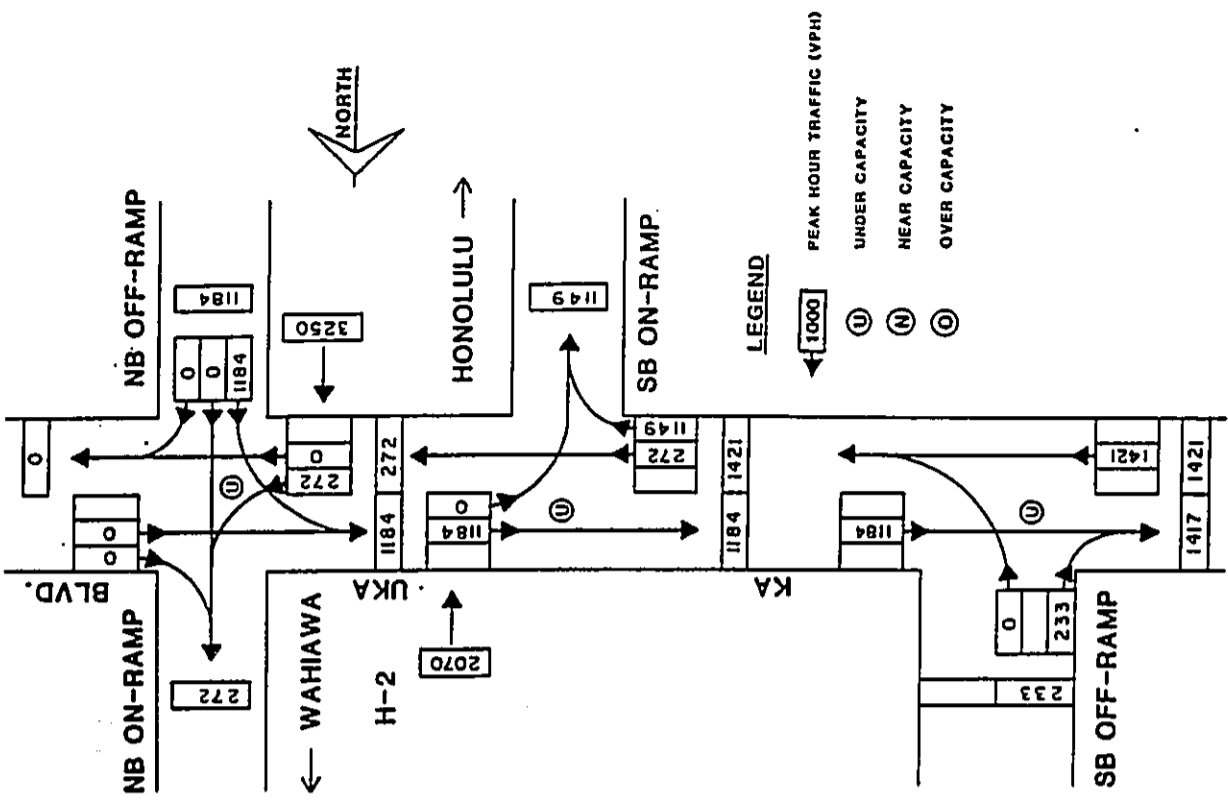


DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT CITY AND COUNTY OF HONOLULU
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AUSTIN, TRUTSUMI, & ASSOC., INC.
 ENGINEERS, ARCHITECTS - HONOLULU, HAWAII

EXHIBIT **14**

PROJECTED P.M. PEAK HOUR TRAFFIC WITHOUT PROJECT (CONTD)



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AUSTIN, TRUTSUMI, & ASSOC., INC.
 ENGINEERS, ARCHITECTS - HONOLULU, HAWAII

EXHIBIT **15**

PROJECTED P.M. PEAK HOUR TRAFFIC WITHOUT PROJECT (CONTD)

traffic conditions without the proposed project. However, congestion problems would continue on Interstate Route H-1, east of the Maiala Interchange, during the AM and PM peak hours of traffic in the inbound and outbound directions, respectively.

V. TRAFFIC IMPACTS

A. General

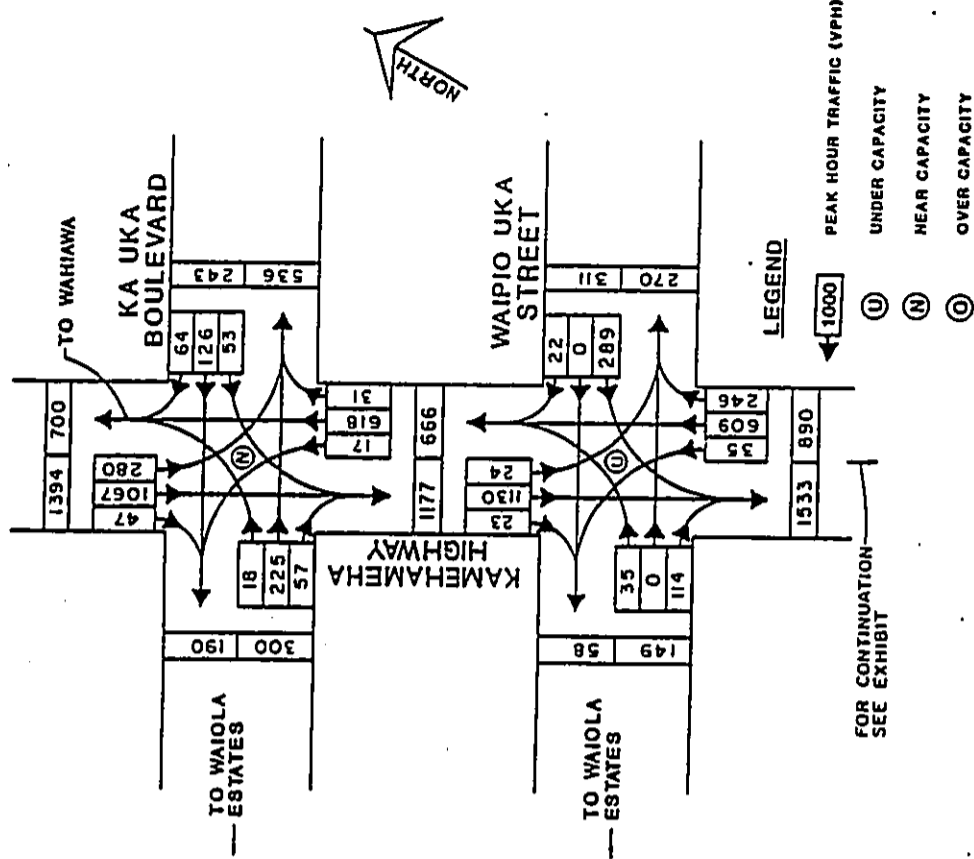
The traffic impacts are analyzed between the project site and the three major highway corridors in the vicinity, Kamehameha Highway, Interstate Route H-1 and Interstate Route H-2.

B. AM Peak Period

Exhibits 16 through 19 show the projected AM peak hour traffic conditions on Kamehameha Highway between Ka Uka Boulevard and Waipahu Street and at the Palwa and Waipio Interchanges.

Kamehameha Highway would experience an 8.6% increase in inbound traffic demand as a result of the proposed project. However, all the intersections between the project site and the Maiala Interchange would operate at "under" or "near capacity" conditions.

Ramps on both the Palwa and Waipio Interchanges have adequate capacity to accommodate the increased demand generated by the proposed Maiala Estates Project. Inbound Interstate Route H-1, between the Palwa and Maiala Interchanges would continue to operate at capacity. Project-generated traffic would increase the traffic demand by 2.9%. Inbound Interstate Route H-2 would continue to have adequate capacity to accommodate the increased traffic demand of 2.2%.

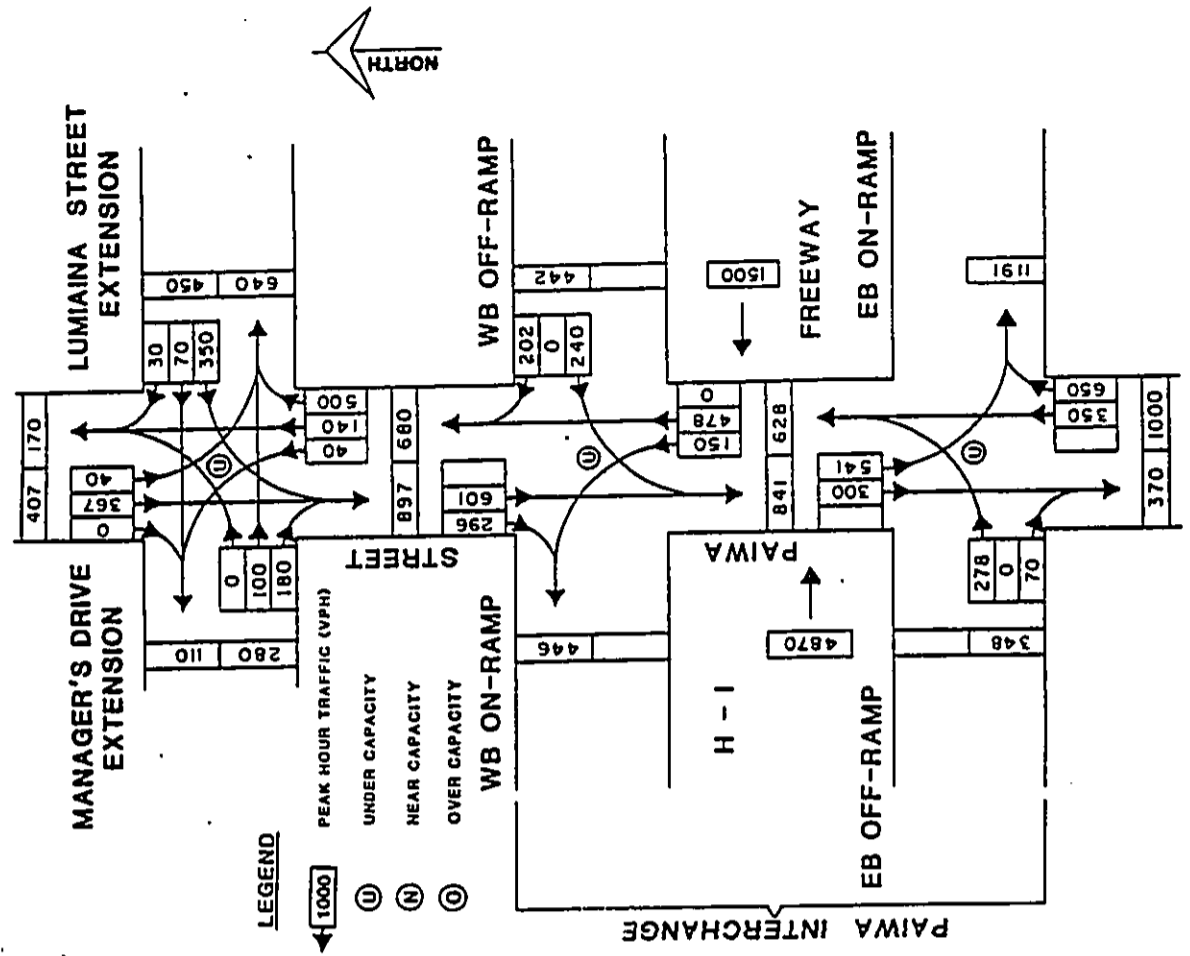
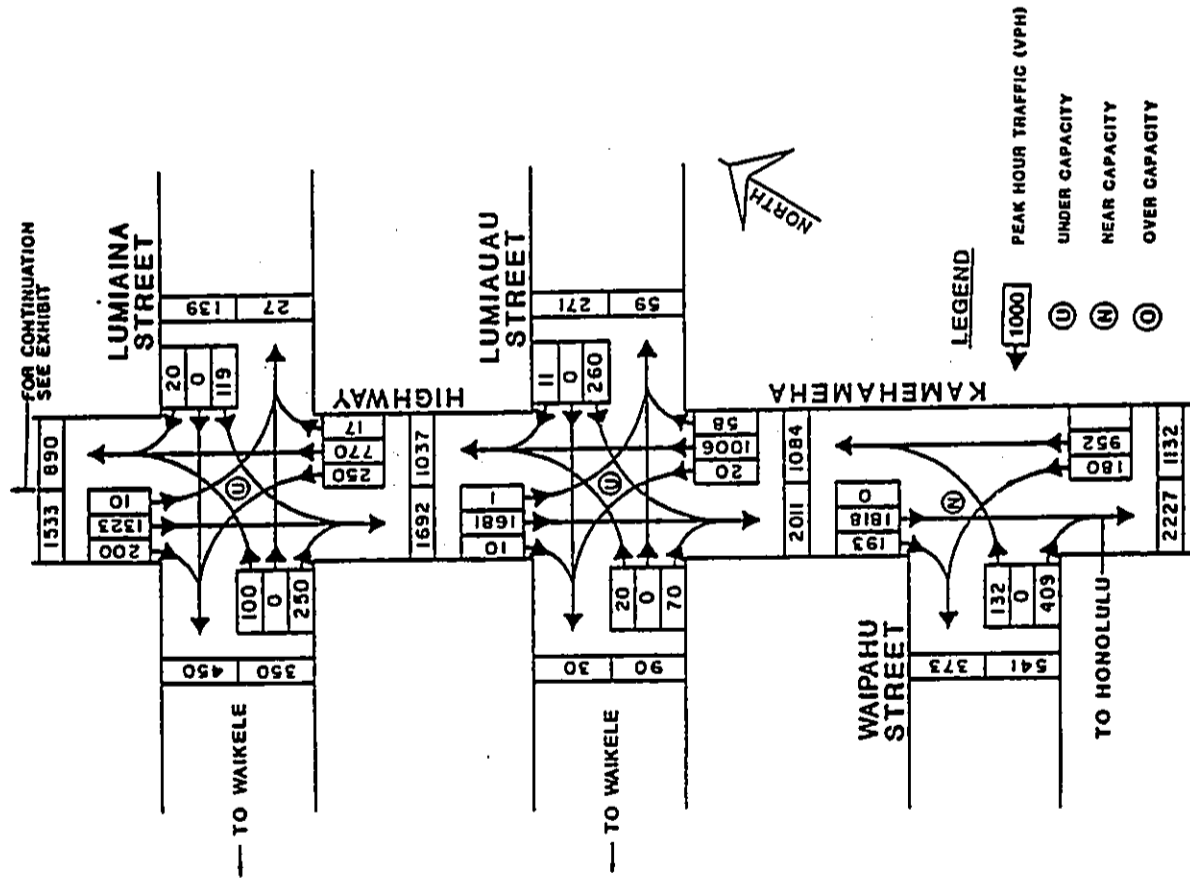


DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT CITY AND COUNTY OF HONOLULU
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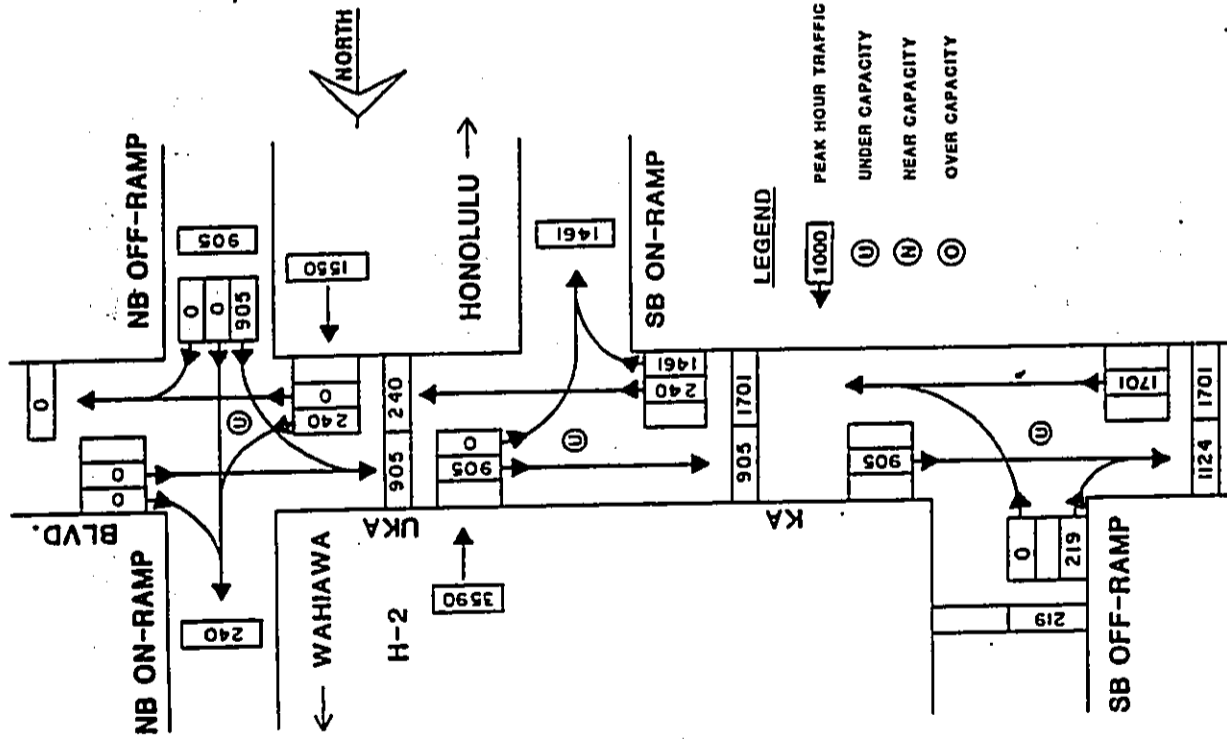
AUSTIN, TRUTNIM, & ASSOC., INC.
 REGISTERED PROFESSIONAL ENGINEERS

EXHIBIT **16**

PROJECTED AM PEAK HOUR TRAFFIC WITH PROJECT



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



C. PM Peak Period

Exhibits 20 through 23 show the projected PM peak hour traffic conditions on Kamehameha Highway between Ka Uka Boulevard and Waipahu Street and at the Pa'ua and Waipio Interchanges. Kamehameha Highway Intersections north of Waipahu Street would operate "under capacity". The Waipahu Street intersection would operate at "near capacity". The widening of Kamehameha Highway to two through lanes and an exclusive left turn lane in each direction along the project frontage would facilitate access to the project site. Kamehameha Highway, north of Waipahu Street, would experience a 7.8% increase in PM peak hour traffic in the north bound direction.

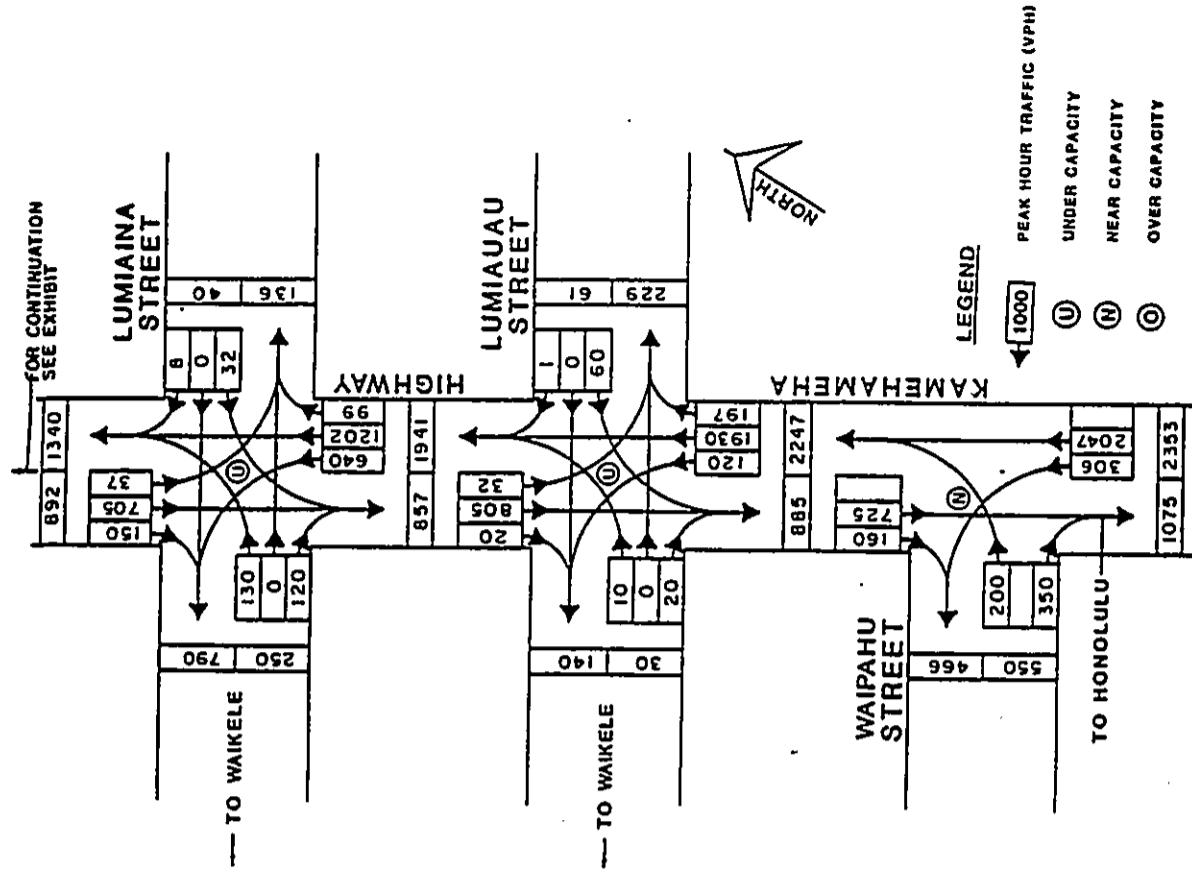
Interstate Routes H-1 and H-2 west and north of the Ma'ola Interchange, are expected to accommodate the increased traffic demand generated by the Ma'ola Estates Project. The Pa'ua and Waipio Interchange ramps would also be able to handle the increased demand.

VI. REGIONAL CONSIDERATIONS

A. General

The previous discussion on traffic impacts assumes that the traffic generated by the proposed Ma'ola Estates Project is composed of all "new" trips. While this assumption may be valid for conditions along Kamehameha Highway, other factors need to be considered in a regional analysis. For example, the park-and-ride is expected to generate 113 vph and 102 vph during the AM and PM peak hours of traffic, respectively. Some of these trips are bus

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT CITY AND COUNTY OF HONOLULU TRAFFIC IMPACT REPORT FOR THE PROPOSED MA'OLA ESTATES PROJECT	EXHIBIT 19
	PROJECTED A.M. PEAK HOUR TRAFFIC WITH PROJECT (CONTD)

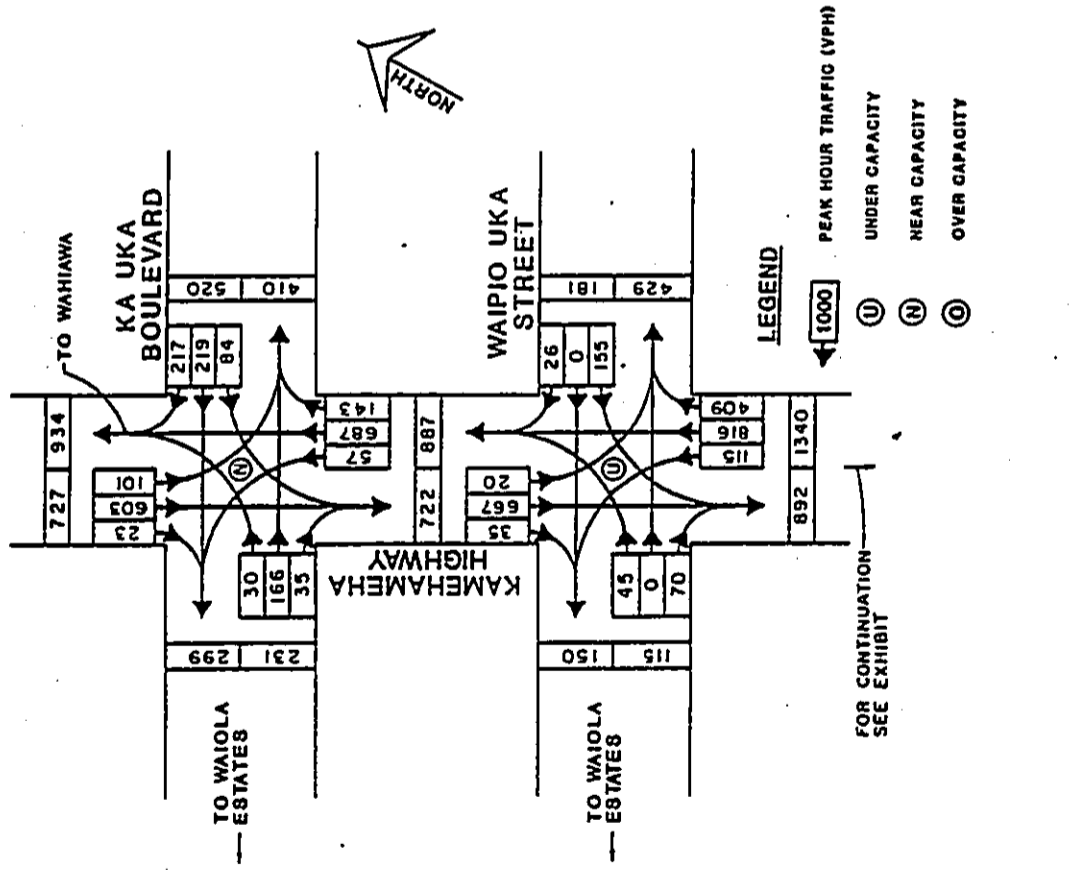


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AUSTIN, TSUTSUMI, & ASSOC., INC.
REGISTERED PROFESSIONAL ENGINEERS - 44241, 44242

EXHIBIT **21**

PROJECTED P.M. PEAK HOUR TRAFFIC WITH PROJECT (CONTD)

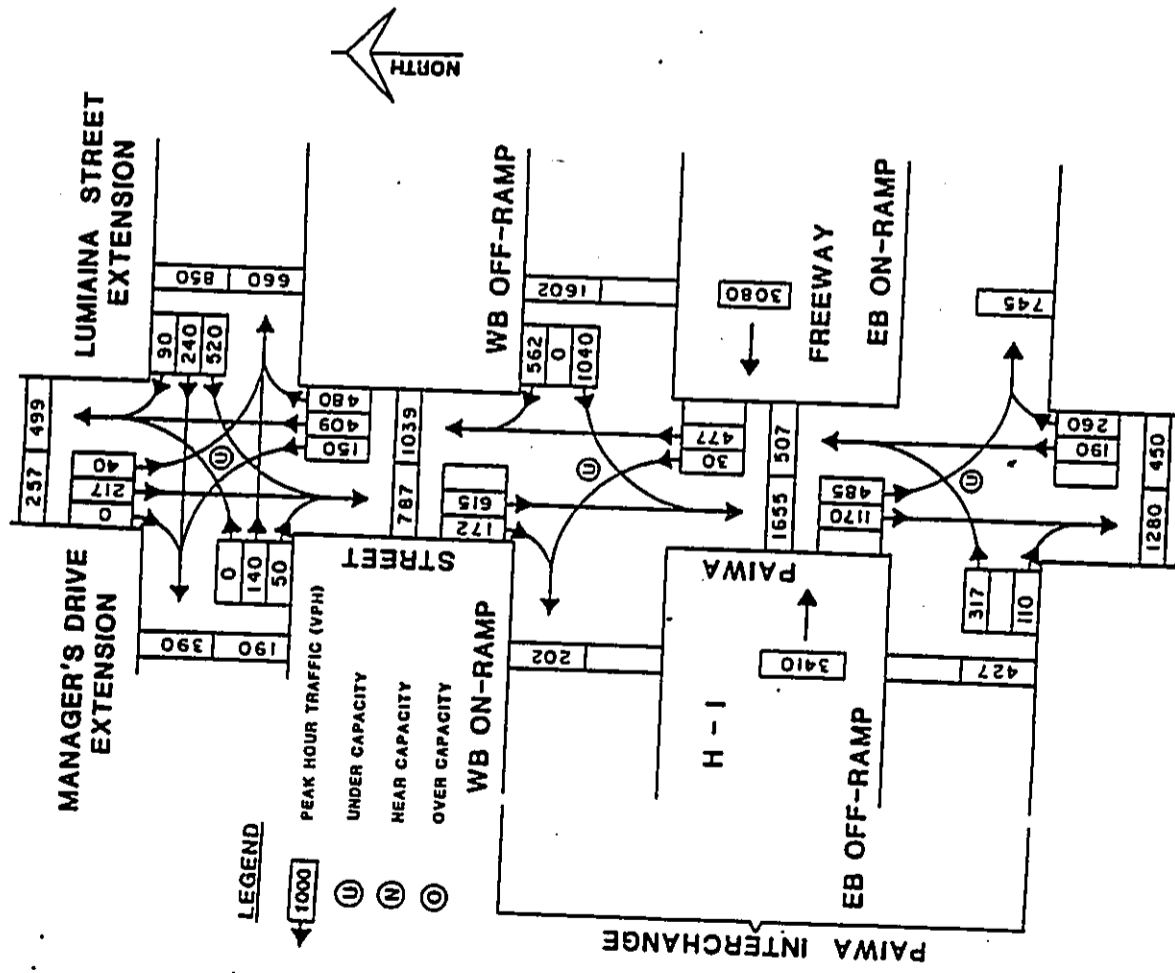


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REGISTERED PROFESSIONAL ENGINEERS - 44241, 44242

EXHIBIT **20**

PROJECTED P.M. PEAK HOUR TRAFFIC WITH PROJECT

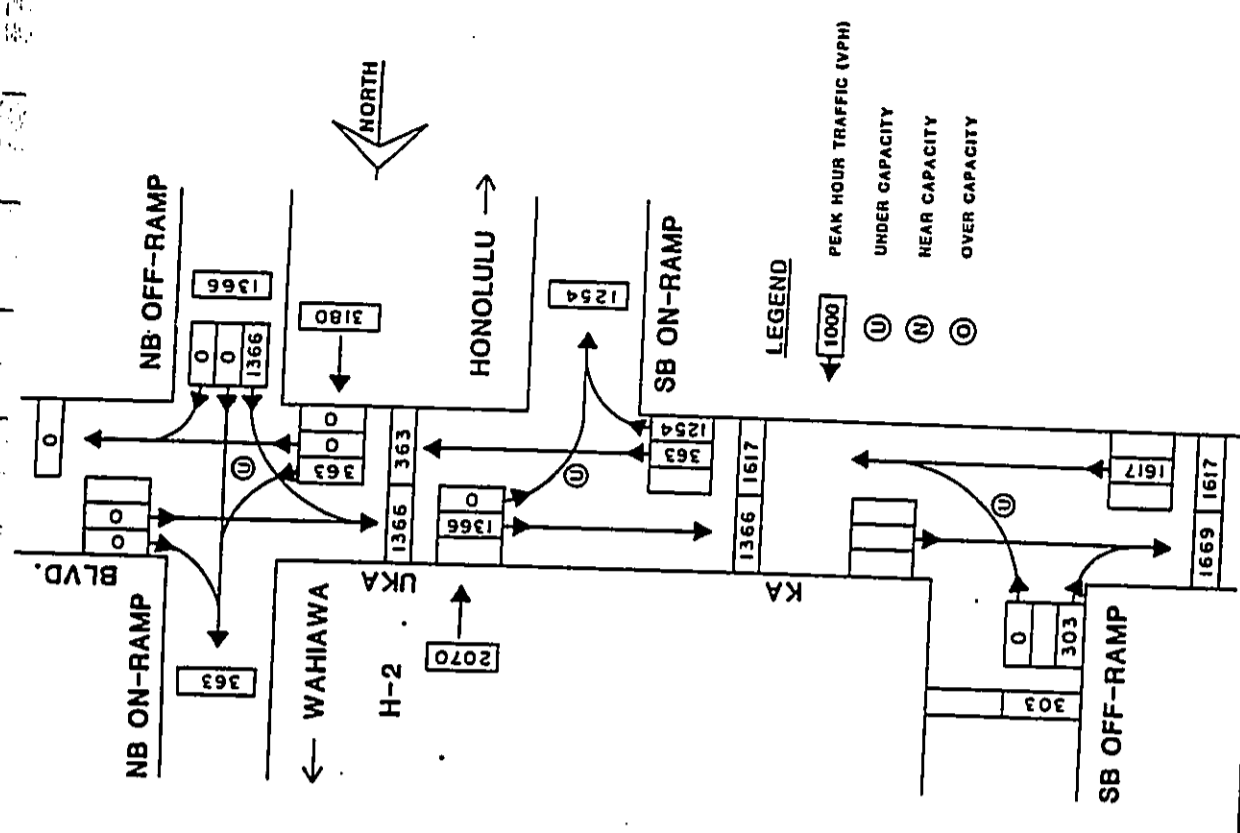


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EXHIBIT 22

PROJECTED P.M. PEAK HOUR TRAFFIC WITH PROJECT (CONTO)



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EXHIBIT 23

PROJECTED P.M. PEAK HOUR TRAFFIC WITH PROJECT (CONTO)

trips and "kiss-and-ride" trips; however, the remainder of the trips would represent an overall reduction in peak hour traffic. If it is assumed that the difference between entering and exiting traffic equals the net reduction of inbound and outbound traffic during the AM and PM peak hours, respectively, then the proposed park-and-ride facility would reduce the total residential peak hour trip generation to and from the primary urban center by about 14%. Furthermore, building 1,345 residential units at other locations in Ewa or Central Oahu would result in the same impacts on traffic east of Mafava Interchange as the proposed Mafava site. Finally, some of the new Mafava residents may already live in the Central Oahu or Ewa regions, thereby not adding to new traffic to or from Honolulu.

B. Analysis of the Mafava Estates Applicants

An advertising campaign for Mafava Estates calling for qualified applicants resulted in 2,705 responses, of which 2,387 responses indicated both work and home telephone numbers. Home and work telephone prefix numbers were analyzed to determine the current residences and places of work. Table 4, compiled by the Department of Data Systems of the City and County of Honolulu, shows this work versus home cross classification table. The island is divided according to Council districts as shown on Exhibit 24.

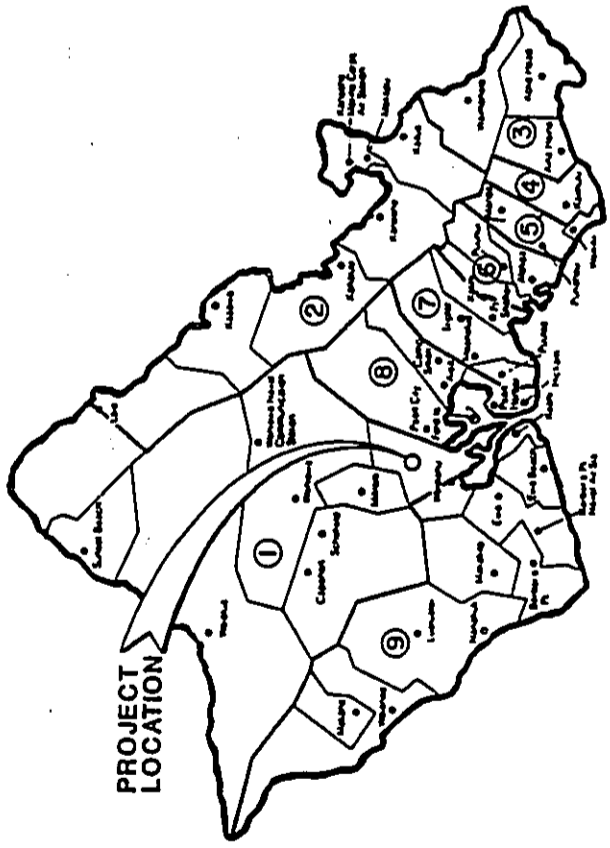
TABLE 4
MAIOLA ESTATES APPLICANTS' RESIDENCE/WORK DATA
BY ESTIMATED COUNCIL DISTRICTS


COUNCIL DISTRICTS BY HOME TELEPHONE	COUNCIL DISTRICT BY WORK TELEPHONE									TOTAL	PCT.
	1	2	3	4	5	6	7	8	9		
1	144	5	1	1	38	79	78	100	42	488	20.4
2	5	26	0	0	10	43	16	11	2	113	4.7
3	0	2	2	0	9	17	6	4	0	40	1.7
4	3	1	0	8	27	37	15	10	1	102	4.3
5	4	5	2	7	56	66	23	10	2	175	7.3
6	6	5	1	8	64	173	70	27	15	369	15.5
7	12	7	3	10	64	129	81	78	15	399	16.7
8	22	2	0	2	31	75	65	96	13	306	12.8
9	30	5	0	5	29	85	102	76	63	395	16.5
TOTAL	226	58	9	41	328	704	456	412	153	2387	
PERCENTAGE	9.5	2.4	0.4	1.7	13.7	29.5	19.1	17.3	6.4		100.0

Source: Department of Data Systems, City and County of Honolulu

Of the 2,387 applicants 488, or 20%, had home telephones with prefixes locating them in District 1 (Central Oahu to North Shore). In other words, 20% of the potential Waiala residents already live in the region and would, therefore, only be relocating within the vicinity to the Waiala Estates Project. If District 9 (Ewa to Waiānae) is included, the number totals 883 applicants, or 37% of the potential future residents of Waiala, already living in Central or West Oahu. If the extreme assumption were made that all of these future residents, already residing in these regions and relocating to Waiala, lived in "ohana" conditions, i.e., more than one household occupying a single dwelling unit, then only 63% of the estimated traffic generated by the proposed project would be "new" trips. On the other hand, if these potential residents lived in rental units, then it is reasonable to assume that new residents would replace the future Waiala residents and, thereby, still result in a net increase in the region's population.

The survey of applicants indicates that only 16% work in Central and West Oahu. However, this figure would likely increase with the redirection of employment growth away from the primary urban center. New employment centers at Kapolei, West Beach, Mailele, Waipio and Milliani are expected to increase the number of jobs in the region, along with the increase in population. Although it may be a long term process, workers tend to "gravitate" closer to their place of employment, either by moving their residence closer to their workplace, or changing to jobs



DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT CITY AND COUNTY OF HONOLULU TRAFFIC IMPACT REPORT FOR THE PROPOSED WAIOLA ESTATES PROJECT	 AUSTIN, TEETSUMI, & ASSOC., INC. ENGINEERS • ARCHITECTS COUNCIL DISTRICT MAP EXHIBIT 24
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closer to home. Therefore, the residential growth resulting from the development of Waiola would not necessarily result in a proportional increase in peak hour traffic traveling to and from the primary urban center.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

The residential development planned for Central Oahu and West Oahu would likely deteriorate the traffic conditions along the highway corridor through Pearl City, at least in the near future. Significant increases in the people moving capacity along this corridor, such as new highway capacity and/or a fixed rail transit system, are considered long-range improvements. The development of new employment centers in West and Central Oahu is expected to lag behind residential development in the same regions. The effect of redirecting and containing peak hour traffic in these areas is again a long-term process. Traffic mitigation measures, such as carpooling, vanpooling, HOV lanes, park-and-ride facilities, and staggered work hours are interim alternatives; however, their effects are usually marginal, relative to the overall traffic congestion problem. However, the proposed park-and-ride facility located on the project site is expected to reduce the traffic demand traveling to and from the primary urban center by 14% during the peak hours of traffic.

Within the vicinity of the project, approved highway improvements either under design or under construction would relieve conditions along Kamehameha Highway and improve access to

the freeways. The widening of Kamehameha Highway to five lanes would increase the capacity of this roadway considerably. The completion of the Waipio Interchange is expected to decrease traffic on Kamehameha Highway from the Waipio-Century Development by two-thirds, according to State Department of Transportation estimates. The construction of the Paia Interchange is expected to accommodate much of the traffic expected from the future Waialeale Development and attract a significant portion of existing traffic generated by Waipahu Town. The net effect of both interchanges would be a reduction of traffic demands on the Kamehameha Highway and Farrington Highway ramps at the Waiala Interchange. Of course, these demands would have just entered the freeway system further upstream during the morning peak period and exited the freeway system further downstream during the afternoon peak period.

While the proposed improvements to Kamehameha Highway and the construction of the Waipio and Paia Interchanges would mitigate much of the problems currently experienced, as well as the impacts anticipated for the Waiola Estates Project, the Interstate Route H-1/Kamehameha Highway corridor in Pearl City would remain the critical problem area. The proposed project's incremental contribution to the overall congestion, however, is less than 5% of the projected peak hour conditions. Traffic mitigation measures proposed by the City and State transportation departments, discussed briefly herein, are not easily quantifiable and, therefore, were not considered in the analysis.

B. Recommendations

1. Kamehameha Highway be widened between Waipio Uka Street and Ka Uka Boulevard to two through lanes in each direction with exclusive left-turn lanes at both intersections.
2. The project access road approaches at Kamehameha Highway be similar in design to the existing Waipio Gentry access roads opposite Kamehameha Highway.

APPENDIX A

CAPACITY ANALYSIS FOR SIGNALIZED INTERSECTIONS

Intersection capacity analysis is performed using the planning analysis method for signalized intersections. The planning analysis is based upon the critical lane volume which is the sum of conflicting traffic flows at a signalized intersection. The actual capacity of a signalized intersection depends on a number of parameters such as cycle length, number of phases, green time allotted for each phase, lengths of clearance intervals, road grades, lane widths, vehicular composition of traffic, and many other factors. However, for planning applications, many of these variables are unknown or can be optimized for improved operation. In order to simplify the evaluation process, the planning analysis is designed to define traffic operation in broad terms.

"Under capacity" condition is defined by critical lane volumes of less than 1200 vehicles per hour (vph). For typical conditions, the intersection will virtually always be below capacity. "Near capacity" condition is defined by critical volumes between 1200 vph and 1400 vph. A more detailed analysis would be required to determine if the intersection capacity would be exceeded. "Over capacity" condition is defined by critical lane volumes exceeding 1400 vph. Under these circumstances, the intersection would require geometric improvements such as exclusive turning lanes and additional through traffic lanes. The capacity criteria is shown in the table below.

Table 1. Capacity Criteria for Planning Analysis of Signalized Intersections

Critical Volume for Intersection, VPH	Relationship to Probable Capacity
0 to 1,200	Under Capacity
1,201 to 1,400	Near Capacity
> 1,401	Over Capacity

APPENDIX E

Air Quality Study

For The

Waiola Estates Subdivision

Waipio, Oahu, Hawaii

Prepared by

Barry D. Root & Barry D. Neal

February 1989

SUMMARY

1. The City and County of Honolulu proposes construction of a residential subdivision on 269 acres in central Oahu. This study evaluates and describes existing ambient air quality in the project area and estimates the potential air quality impact that could result from construction as proposed.
2. Ambient Air Quality Standards have been set for six major pollutants. Particulates from construction and carbon monoxide from vehicles attracted to the project are likely to be of greatest concern for a residential project such as this. The Hawaii one-hour ambient air quality standard for carbon monoxide is four times more stringent than the National limit.
3. Present air quality in the project area is estimated to be quite good, but State of Hawaii standards for carbon monoxide and ozone have been exceeded in the Honolulu area in recent years.
4. The only significant direct adverse air quality impact that the project is likely to create is the emission of fugitive dust during construction. Strict compliance with State of Hawaii air pollution control regulations should effectively mitigate this potential impact.
5. Once completed, the Waiola Estates Subdivision should have little direct impact on air quality in the area. Pesticide use on the golf course and residential lawns and gardens should be only a minor concern.
6. Off site, expected impacts include increased air pollutant emissions at electric generating facilities to satisfy new energy demand and possible additional emissions to dispose of solid wastes.
7. Indirectly, vehicle traffic generated by the project is expected to have an adverse impact on air quality at critical "hot spots" near major intersections between the project and urban Honolulu. Carbon monoxide levels in excess of the allowable State of Hawaii limit are expected in some locations. A planned park-and-ride facility within the project should decrease associated traffic volume, but barring technological, sociological, or bureaucratic breakthroughs, little else can be done to further reduce the magnitude of this air quality impact other than downsizing the project so that less vehicle traffic is generated.
8. It is estimated that high peak hour levels of carbon monoxide along the congested portion of the H-1 Freeway through Pearl City will continue to be a problem whether this particular project is constructed or not.

AIR QUALITY STUDY
FOR THE PROPOSED

WAIOLA ESTATES SUBDIVISION
WAIPIO, OAHU, HAWAII

Prepared for:

City and County of Honolulu
Department of Housing and Community Development

Prepared by:

Barry D. Root & Barry D. Neal

February 17, 1989

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1. INTRODUCTION AND PROJECT DESCRIPTION

The City and County of Honolulu Department of Housing and Community Development proposes construction of a single-family and multi-family residential subdivision containing approximately 1,345 units with appurtenant infrastructure and facilities. A major regional recreation facility, child care facility, rental units for the elderly, nine-hole golf course with clubhouse and a 150-stall park and ride facility are also included in the development plan. Project location is indicated on Figures 1 and 2. The proposed site plan is shown on Figure 3. The site encompasses 269.454 acres which are currently zoned Agriculture. Currently fallow, the site was last planted in pineapple.

The purpose of this study is to describe existing air quality in the project area and to assess the potential short-term and long-term direct and indirect air quality impacts that could result from construction and use of the proposed subdivision as planned. Possible measures to mitigate any adverse impacts are also described and discussed.

2. AMBIENT AIR QUALITY STANDARDS

State of Hawaii and Federal Ambient Air Quality Standards (AAQS) have been established for six classes of pollutants as shown in Table 1. An AAQS is a pollutant concentration not to be exceeded more than once per year over a specified sampling period which varies from as little as one hour to a year for each pollutant depending upon the type of exposure necessary to cause adverse effects. Each of the regulated pollutants has the potential to create or exacerbate some form of adverse health effect or to produce environmental degradation when present in sufficiently high concentration.

Federal AAQS have been divided into primary and secondary levels for particulates and sulfur dioxide. For these pollutants, primary AAQS are relevant to the prevention of adverse health impacts, while secondary AAQS refer to public welfare impacts such as decreased visibility, diminished comfort levels, or other potential damage to the natural or man-made environment, e.g. soiling of materials or other economic impact.

State of Hawaii AAQS have been set at a single level which is in some cases significantly more stringent than Federal AAQS. In particular, the State of Hawaii one-hour AAQS for carbon monoxide is four times more stringent than the comparable Federal AAQS.

Under the provisions of the Federal Clean Air Act (1), the U.S. Environmental Protection Agency (EPA) is required to periodically review and re-evaluate Federal AAQS in light of research findings more recent than those which were available at the time the standards were originally set. Periodically new standards are created as well. Most recently the Federal standard for particulate matter has been revised to apply only to particulates 10 microns or less in diameter (PM-10) (2). The State of Hawaii has not addressed the question of whether to set more stringent limits for this category of air pollutant, but Federal AAQS prevail where States have not set their own more stringent levels.

3. PRESENT AIR QUALITY

Present air quality at Waioala is likely to be affected by air pollutants from four different types of sources: natural, industrial, agricultural, and vehicular. Natural air pollutant producers which could affect Waioala air quality include the ocean (sea spray), plants (aero-allergens), dust (from wind blowing over unvegetated areas or from agricultural or construction activities), or perhaps a distant volcanic eruption on the island of Hawaii.

Industrial emissions affecting Waioala would most likely come from the direction of Campbell Industrial Park (about 10 miles southwest). Industrial air pollutants consist of particulate matter, sulfur dioxide, and nitrogen dioxide. A summary of recent air pollutant measurements from State of Hawaii long term monitoring stations located nearest to the project is presented in Table 2. Particulates (and PM-10) are measured at Pearl City, only about three miles southeast of the project. Levels of particulates in the air have been well within allowable AAQS at Pearl City in recent years. Nitrogen dioxide concentrations have not been measured in Hawaii since the early 1980's. The AAQS for nitrogen dioxide is an annual value, implying that nitrogen dioxide presents a health concern only for long term exposures. When nitrogen dioxide was last measured at Sand Island in 1981, readings were well below the 24-hour standard then in force. The nearest monitoring station for sulfur dioxide is located at Barbers Point within the Campbell Industrial Park and recent readings from that site are also well within allowable limits, indicating that pollutants from industrial sources are not likely to be a problem at Waioala.

Fugitive dust from sugar cane cultivation and heavy truck movements over unpaved cane haul roads as well as smoke from field burning at harvest time constitute the major types of agricultural air pollution sources likely to affect present air quality at Waioala. The cane fires set at harvest time produce particulates, carbon monoxide and trace amounts of other organics. The most thorough review of air quality impacts from this source are contained in a Masters Thesis by B. Root (3). The subject has recently been revisited by an EPA study of cane burning on Maui (4). Fortunately cane fires occur only every other year or so for any given field and the fire itself generally lasts for less than an hour. Relatively high levels of both particulates and carbon monoxide can occur for a mile or more down wind from such fires, however, and while brief, these periodic impacts on air quality are not necessarily insignificant. In the case of this project, the proposed residential development will be located near fields currently used for sugar cane cultivation. However, proposed developments for central and leeward Oahu will be shifting the land use from cane cultivation to residential or urban uses in future years and pollutants from agricultural activities will thus be diminishing.

Unfortunately there are no nearby long term measurements of carbon monoxide, ozone, or lead in the immediate vicinity of Waiola, so the current burden of vehicular emissions is difficult to evaluate. Measurements of lead from sites in urban Honolulu indicate that most recent levels are barely above the threshold of detection for current measuring techniques. Airborne lead is thus not considered to be a problem at any Oahu location.

On the other hand, carbon monoxide and ozone readings from urban Honolulu indicate that allowable State of Hawaii standards for these vehicle-related air pollutants have recently been violated at rates of up to three times a year. Ozone is an indicator of the formation of photochemical pollutants in the air, a condition which tends to develop if the air mass over the islands has been fairly stable with little wind flow for a period stretching over several days. High ozone concentrations are thus an area wide concern the origin of which is impossible to trace to a specific site. Concentrations of carbon monoxide are more directly related to vehicular emissions and tend to be highest at "hot spots" near congested intersections during peak hour traffic conditions. Carbon monoxide would thus be the pollutant most likely to cause difficulty in meeting allowable AQS as a result of new residential development on Oahu.

4. SHORT TERM DIRECT AND INDIRECT IMPACTS OF PROJECT CONSTRUCTION

There will be two types of short term direct air quality impacts from project construction: fugitive dust and on-site emissions from construction equipment. There will also be a short term indirect impact from slow moving construction equipment traveling to and from the project site as well as a temporary increase in local traffic caused by commuting construction workers.

Fugitive dust emissions will arise from grading and dirt moving activities within the project site and from any off-site dirt hauling as well. The quantitative rate of emission for this type of emission is almost impossible to estimate because the potential for such emissions will vary greatly from day to day depending upon the amount of dirt-disturbing activity taking place and the moisture content of exposed soil in work areas. The EPA has provided a rough estimate for fugitive dust emissions from construction activity (5): 1.2 tons per acre per month of activity under conditions of "medium" activity, moderate soil silt content (30g), and a precipitation/evaporation (P/E) index of 50. The project site is slightly drier than the stated P/E index, thus slightly increasing the potential for fugitive dust generation from this project. State of Hawaii Air Pollution Control Regulations (6) require that visible fugitive dust emissions from construction activity be essentially nil.

Adequate fugitive dust control can usually be accomplished by establishment of a frequent watering program to keep bare-dirt surfaces in work areas from becoming significant dust generators. Control regulations also require that open-bodied trucks be covered at all times when in motion if they are transporting materials likely to give rise to airborne dust. Paving parking areas and establishing landscaping as early in the construction process as possible as well as good housekeeping on the job site have also proven to be helpful in abating fugitive dust emissions.

On-site mobile and non-mobile construction equipment will also emit some air pollutants in the form of engine exhausts. The largest equipment is usually diesel-powered. Nitrogen dioxide emissions from this type of equipment can be significant, but resulting concentrations are of short duration and are of little concern with respect to the long term AQS for nitrogen dioxide. Carbon monoxide emissions from a single piece of construction equipment are rarely more than those from a single automobile, and the overall air quality impact of emissions from construction equipment should be insignificant compared to vehicular emissions from roadways nearby.

Indirectly, slow moving construction vehicles on roadways adjacent to the project can obstruct the normal free flow of traffic to such an extent that overall vehicular emissions are increased, but this impact can be mitigated by moving heavy construction equipment during periods of low traffic volume on the roadways affected. Likewise the schedules of commuting workers can be adjusted slightly to avoid peak traffic hours in the project vicinity. Thus most potential short term air quality impacts from project construction should be relatively easy to mitigate.

5. LONG TERM DIRECT IMPACT

A. ON-SITE

Once construction has been completed, the on-site direct air quality impact of the proposed Waioala Estates subdivision will be minimal. Smoke from cooking, emissions of pesticides and other products used in home landscaping or in the parks or golf course, and occasional visits from roof-repairing trucks with hot tar trailers will be the only noticeable air pollution emanations.

B. OFF-SITE

ELECTRICAL ENERGY GENERATION AND SOLID WASTE INCINERATION

Residents of the 1,345 dwelling units proposed for the project will generate an annual demand for electrical energy of about 6.6 million kilowatt hours. In the worst case this demand would be met by burning additional fuel oil in existing power plants, primarily the Kaha Power Plant on the Waianae coast. This new energy requirement could be reduced significantly by installing solar water heaters on all new homes and by incorporating solar design features into all construction plans, e.g. use of landscaping to provide afternoon shade to cut down on use of air conditioning and positioning of windows to maximize indoor light without unduly increasing indoor heat.

It is also possible that the new demand can be met by means other than burning fuel oil. In fact, an operating wind farm has been developed on the north shore of Oahu, and other low-pollution energy generating systems might be developed in coming years. At this writing the planned city and county resource recovery facility (H-POWER) is being constructed at Campbell Industrial Park. Energy from this facility should at least partially satisfy the new energy demand generated by the proposed Waioala Estates project. This system is not air pollution free, however, and even with the use of on-site wet scrubbing and electrostatic precipitation, emissions from this source could be significant. Furthermore, the Hawaiian Electric Company has evidently decided that purchasing power from new coal-fired power plants to be constructed in Campbell Industrial Park would provide the most economical means for meeting future Oahu energy demands. Even with latest technology control devices on these new plants, air pollution emissions in the Campbell Industrial Park would appear to be approaching allowable limits with the addition of these new facilities.

Using EPA estimates for emission rates for low sulfur fuel combustion in electrical power plants and assuming that all Waioala electrical demands will be met by burning low sulfur fuel and that all project-related solid waste will be disposed of by incineration in the H-POWER plant yields the annual emission rates listed in Table 3. H-POWER emission factors were estimated using values in the HIS for the West Loch Project (6).

6. LONG TERM INDIRECT IMPACT OF PROJECT-RELATED TRAFFIC

By serving as an attraction for increased motor vehicle traffic in the area the proposed Waioala Estates Subdivision must be considered to be a potentially significant indirect air pollution source.

Motor vehicles, especially those with gasoline-powered engines, are prodigious emitters of carbon monoxide. Motor vehicles also emit some nitrogen dioxide and those burning fuel which contains lead as an additive contribute some lead particles to the atmosphere as well. The major control measure designed to limit lead emissions is a Federal law requiring the use of unleaded fuel in most new automobiles. As older cars are removed from the vehicle fleet lead emissions should continue to fall. In fact, so few vehicles now require leaded gasoline that the EPA is proposing a total ban on lead in gasoline to take effect immediately. Even without a ban on lead in gasoline, reported quarterly averages of lead in air samples collected at the Department of Health building on Punchbowl and Beretania Streets in urban Honolulu have been zero since early 1986.

Federal control regulations also call for increased efficiency in removing carbon monoxide and nitrogen dioxide from vehicle exhausts. By the year 1995 carbon monoxide emissions from the Oahu vehicle fleet then operating should be about 20 percent lower than amounts now emitted. At present, however, no further reductions in vehicular emissions have been mandated and increases in traffic levels after 1995 will result in directly proportional increases in vehicle-related pollutant emissions.

In order to evaluate the potential air quality impact of increased traffic from the proposed Waioala Estates Subdivision in view of these decreasing emission rates per vehicle, a detailed modeling effort was carried out. Carbon monoxide was selected for modeling because it is both the most stable and the most abundant of the motor vehicle generated pollutants and it is also likely to be the pollutant with the greatest likelihood of violating present AQOS.

7. CARBON MONOXIDE DIFFUSION MODELING

Four receptor sites near significant current or planned intersections in the project area were selected for analysis. The locations of these sites are shown on Figure 2. Sites 1 and 2 are located three meters from the eastern edge of Kanehameha Highway near the Ka Uka and Waipio Uka intersections respectively. Site 3 is at the edge of the right-of-way for Interstate H-2 near the Honolulu-bound on-ramp of the Waipio interchange which is currently being constructed. Site 4 is at the Palwa Street underpass of Interstate H-1 at the site of the Honolulu-bound on-ramp of the planned Palwa interchange. This site was identified as the one with the highest morning peak hour carbon monoxide concentrations in the air quality study for the Palwa interchange design plan.

The modeling study yields carbon monoxide concentrations at these sites which can be compared directly to allowable state and federal ambient air quality standards. The traffic impact study for the project (7) indicated that these intersections would be likely to have various degrees of increased traffic following Waioala Estates project development. Traffic volumes near most of these sites were highest during the morning peak hour and worst case meteorological diffusion conditions are also most likely to occur at that time. Thus all one-hour computations were performed for the morning rush hour situation.

Modeling was performed for 1989 and for 1993 (the planned year of completion for Waioala Estates). At present Kanehameha Highway fronting the proposed Waioala Estates project is essentially a two-lane roadway with a third lane available at intersections for left turns. The Waipio Uka intersection is signalized, but the Ka Uka intersection is not. The portion of Kanehameha Highway fronting the planned Waikole subdivision to the south of the Waioala project site is slated to be widened by the Waikole project developer, and the City is planning to fund widening of Waioala frontage in conjunction with Waioala Estates development. For the 1993 modeling scenario without Waioala project development it was assumed that Kanehameha Highway would retain its current configuration in the vicinity of sites 1 and 2, but the 1993 scenario with Waioala project development assumes that Kanehameha Highway has been widened by the Waioala Estates project is completed. It is also assumed that a traffic signal will be installed at the Ka Uka intersection under the 1993 Waioala development scenario.

Using 1986 vehicle registration figures for Oahu, the existing peak hour vehicle mix in the project area is estimated to be 91.9% light duty gasoline-powered vehicles, 4.2% light duty gasoline-powered trucks and vans between 6000 and 8500 pounds, 0.5% heavy duty gasoline-powered vehicles, 0.5% diesel-powered automobiles, 0.1% light duty diesel-powered trucks, 1% diesel-powered trucks and buses, and 1% motorcycles. The same vehicle mix was assumed for the 1989 and 1993 emission rate calculations.

Vehicle speeds were assumed to be 45 mph on the H-1 and H-2 Freeways in the vicinity of sites 3 and 4 during rush hour, with ramp speeds averaging 16 mph. Unrestricted flow on Kanehameha Highway was assumed to proceed at 25 mph. Downstream from signals and turns 16 mph speeds were assumed. A cold winter morning temperature of 59 degrees F was assumed for morning rush hour conditions. Vehicle operating characteristics were computed assuming that 20.6 percent of the vehicles equipped with catalytic converters and 20.6 percent of the vehicles without catalytic converters would be operating in the "cold start" mode and that 27.3 percent of all vehicles would be operating in the hot start mode. The EPA computer model MOBILE3 (8) was run using the above parameters to produce vehicular carbon monoxide emission estimates for each of the years studied. National averages for "mis-fueling" were assumed.

The computer model CALPUFF (9) was used for calculating carbon monoxide concentrations at each site for each scenario studied. Stability category 6 was used for determining diffusion coefficients. This stability category represents the most stable (least favorable) atmospheric condition that can be used for these computations. For all scenarios a surface roughness of 100 was assumed since this value is closest to that which occurs over suburban countryside.

To simulate worst case wind conditions a uniform wind speed of one meter per second was assumed with the worst case wind direction for each location determined by which wind direction produced the highest concentration of carbon monoxide. For each receptor site, concentrations were computed at a height of 1.5 meters above ground in order to estimate levels that would exist within the normal human breathing zone. Differences in roadway elevations such as the H-1 Freeway overpass in the vicinity of site 4 were included in the roadway geometry.

Background contributions not directly considered in the carbon monoxide computations were assumed to be zero in order to avoid masking the magnitude of project impact. At most, background concentrations from other sources or distant roadways in the vicinity of the intersections selected would not be likely to exceed one milligram per cubic meter, which represents the probable modeling margin of error given the numerous assumptions required in model input formulations.

Results of the peak hour carbon monoxide analysis are summarized in Table 4. Values shown are rounded off to the nearest whole number. Current peak hour carbon monoxide levels under the worst case assumptions used in this study are higher than allowable State of Hawaii AQOS only at site 2. This situation will be greatly ameliorated when the Waipio Interchange on the H-2 Freeway is completed and both Kanehaneha Highway and Waipio Uka traffic currently transiting through this intersection will have access to the freeway system via another route. Reduced levels of Waipio Uka traffic have an especially beneficial impact on the intersection since Kanehaneha Highway traffic is thus afforded a greater percentage of green time and thus less frequent queuing at this signalized intersection. Handled future reductions in automobile emissions by 1993 also contribute to the significant decrease in expected peak hour carbon monoxide concentrations at this location under the 1993 without-Waioala modeling scenario. A somewhat smaller carbon monoxide reduction at the Ka Uka intersection is expected to occur by 1993 for similar reasons. Under the 1993 with-Waioala modeling scenario, however, widening Kanehaneha Highway and making four-way signalized intersections at these sites raises expected worst case morning peak hour carbon monoxide concentrations to allowable State of Hawaii limits. Increases in traffic levels at these intersections after the 1995 maximum impact target date of the current emissions reduction program are virtually certain to lead to worst case carbon monoxide concentrations in excess of the allowable State of Hawaii one hour limit.

Since neither the Waipio nor the Palwa Interchange is currently in existence, current carbon monoxide levels at sites 3 and 4 along the rights-of-way for these roadways reflect only freely moving freeway traffic. At the Waipio interchange morning traffic makes an unimpeded right turn onto the on-ramp and traffic exiting the freeway in the off-peak direction is relatively light leading to an overall low carbon monoxide level with or without the additional autos from the Waioala project. At the Palwa interchange it is a different story, however, since traffic from Waioala and Waikole will have to make a left turn in competition with Waipahu traffic to gain access to the Honolulu-bound on-ramp. Thus expected worst case morning peak carbon monoxide levels in the vicinity of site 4 are expected to exceed the allowable State of Hawaii standard in 1993 when Waioala traffic is added to that already generated by Waikole.

Computed worst case one-hour carbon monoxide concentrations are well within Federal AQOS at all four sites with or without Waioala traffic.

For areas where no better data exists, worst case eight-hour carbon monoxide levels are usually estimated by multiplying peak hour modeled values by a "meteorological persistence factor" of 0.6 which is recommended in EPA modeling guidelines (10) to account for the fact that average one hour traffic volumes over an eight hour period are lower than peak hour volume and the fact that wind conditions are more variable over an eight hour period than they are for a one hour period. Because the peak eight hours will occur in the daytime, however, it is not deemed appropriate to use morning peak hour meteorological dispersion conditions as a basis for the computation since stability category six is to be used only during nighttime or within an hour of sunrise or sunset. Furthermore, a long term relationship between peak one hour and eight hour levels of carbon monoxide has been established by the last three years of reported measurements at the State of Hawaii Department of Health in Honolulu. In 1985 and 1986 the ratio between these peak values was 0.35. In 1986 it was 0.42. A peak-to-eight-hour ratio of 0.4 therefore appears to be more appropriate for use in estimating highest likely eight hour concentrations of carbon monoxide on leeward Oahu. In fact, even this ratio is probably too conservative since eight hour traffic volumes in Honolulu are probably closer to peak hour levels than they are in suburban central Oahu. Eight hour estimated carbon monoxide levels have thus been computed using the 0.4 ratio discussed above with results summarized in Table 5.

Computed worst case eight-hour carbon monoxide concentrations are within both State of Hawaii and Federal AQOS under all scenarios considered.

It is important to note that the worst case peak hour values presented here have different probabilities of occurrence depending upon the wind direction necessary to produce highest levels in the vicinity of a given roadway configuration. Some of the wind directions required to yield worst case values in this modeling study occur only one or two times per year. Furthermore, when windspeeds are as light as one meter per second (the speed which yields highest computed carbon monoxide values), the wind direction is usually quite variable, thus significantly reducing the probable frequency of occurrence of the worst case values presented. Nor does the wind generally blow at a steady one meter per second for a whole hour. If windspeeds were increased to two meters per second, for example, computed carbon monoxide concentrations would be half the values shown. Finally, while there is a tendency for lowest temperatures to occur under low wind speeds, temperatures as low as the 59 degrees F used for computing worst case morning peak hour emission factors occur less frequently than some of the wind direction/speed combinations used in the computations.

8. REGIONAL CONSIDERATIONS

Aside from potential indirect air quality impacts in the immediate project vicinity, there are potential regional scale impacts to be considered as well. Carbon monoxide computations carried out as part of air quality impact studies for other projects in the leeward area of Oahu have indicated potentially high levels of carbon monoxide along the H-1 corridor between Pearl City and Aloha Stadium. Morning peak hour concentrations on the order of twice the State of Hawaii one hour limit have been estimated under worst case conditions. Any proposed project which has the potential to increase traffic volumes along this corridor can only serve to intensify the magnitude of this problem.

The Waiala Estates project could add as many as 500 peak hour vehicles to existing levels along this critical corridor. This represents about five percent of existing traffic, and the peak hour contribution of Waiala Estates traffic alone could be as high as one to two milligrams per cubic meter. During the last two years, eastbound traffic along this portion of the H-1 Freeway has been increasing at an annual rate of 15%, yielding potential annual increments of over 3 milligrams per cubic meter to worst case carbon monoxide levels along the corridor. In this light, the potential regional air pollution impact of traffic from the Waiala Estates project would appear to be significant.

However, it is very difficult to quantitatively evaluate the potential regional air pollution impact of a project such as Waiala. In the first place, many of the automobiles treated as new traffic in this analysis are already commuting over this corridor from residences that are essentially unzoned Ohana arrangements with parents or relatives. Providing them affordable housing merely shifts the starting point of their commute. Then it is necessary to consider that the congested portion of the H-1 will remain congested, operating at something near its physical capacity, no matter where in central or leeward Oahu new traffic demand originates. This means that peak one hour levels of carbon monoxide along this corridor can not increase at the same rate that traffic demand increases, because it is not possible to increase peak hour peak levels above the capacity of the roadway. What happens instead is that peak eight hour levels of carbon monoxide will be increasing at some uncertain rate as the length of each "rush hour" increases to two or three hours. There are no EPA guidelines for evaluating the magnitude of this type of impact, so it is possible only to state that such a scenario is likely to unfold whether the Waiala Estates subdivision is created or not.

9. MITIGATIVE MEASURES

A. SHORT TERM

From an air quality standpoint the major short term impact of project construction will be potential emissions of fugitive dust. Strict compliance with State of Hawaii Air Pollution Control Regulations regarding establishment of a regular watering program and covering dirt-hauling trucks should effectively mitigate this concern.

B. LONG TERM

On-site air pollutant emissions from the proposed Waiala Estates project are likely to be minimal once the project is completed and occupied. Off-site there will be impacts generated because of new residential demands for electrical energy and waste incineration. Electrical requirements can be reduced somewhat by planning and implementing solar energy design features to the maximum extent possible.

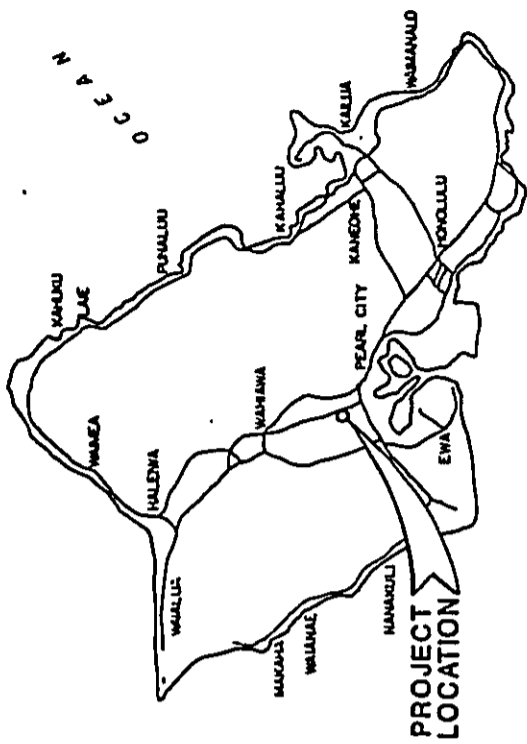
Other indirect long term air quality impacts are expected in those areas where traffic congestion can potentially be worsened by the addition of vehicles traveling to and from the project. Project developers have no control over the emission levels of individual vehicles, but the total number of project-related vehicles operating on Oahu roadways should be reduced somewhat by provision of the three-acre, 150-stall park and ride facility planned as part of the project. The potential mitigative effect of this facility is included in the traffic projections (and hence the air quality analysis) for the project. Participation in any other regional traffic-limiting strategies developed by governmental traffic planners could also help to mitigate this potential impact. The only other logical way to mitigate air pollution impacts associated with the proposed development would be to reduce the size and scope of the project to produce fewer peak hour vehicle trips.

Because the stringent national vehicular emissions reduction program now being pursued is entirely the product of ever-changing government regulations, it is always possible that economic conditions or other factors could lead to an early abandonment of the program. If that were to occur then expected emission reductions might be eliminated or postponed and carbon monoxide levels presented in this study could be lower than those that actually occur.

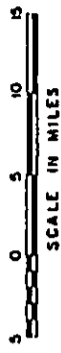
On the other hand, future innovations in vehicle design could lead to power systems that produce no significant air pollution. It is also possible that sociological innovations such as work-at-home programs using fax machines, modems and computers could cut down on the number of commuter trips necessary to maintain a viable Hawaiian economy. Likewise it may come to pass some day that a fixed rail system is actually constructed, yielding substantial reductions in traffic volumes over the roadways considered in this analysis.

REFERENCES

1. U.S. Congress. Clean Air Act Amendments of 1977 (P.L. 95-95). Section 109, National Ambient Air Quality Standards, August, 1977.
2. U.S. EPA. Revisions to National Ambient Air Quality Standards for Particulate Matter, Federal Register, Vol. 52, p. 2463, July 1, 1987.
3. Root, B.D. Open Field Agricultural Burning and Air Quality Management in Hawaii, Masters Thesis, University of Hawaii, December, 1972.
4. U.S. EPA. Results of Sampling Program for Emissions from Sugarcane Field Burning - Hawaii, April, 1986. August, 1987.
5. U.S. EPA. Compilation of Air Pollutant Emission Factors, 1978.
6. City and County of Honolulu, West Loch Golf Course and Shoreline Park EIS, January, 1988.
7. Austin, Tsutsumi & Associates, Inc., Traffic Impact Report for the Proposed Waioala Estates Project, February, 1989.
8. U.S. EPA. User's Guide to MOBILE-3 (Mobile Source Emissions Model), June, 1984.
9. State of California, Department of Transportation, CALINE4 - A Dispersion Model for Predicting Air Pollution Concentrations Near Roadways, November, 1984.
10. U.S. EPA. Guidelines for Air Quality Maintenance Planning and Analysis: Indirect Sources. Volume 9. Revised, September, 1978.

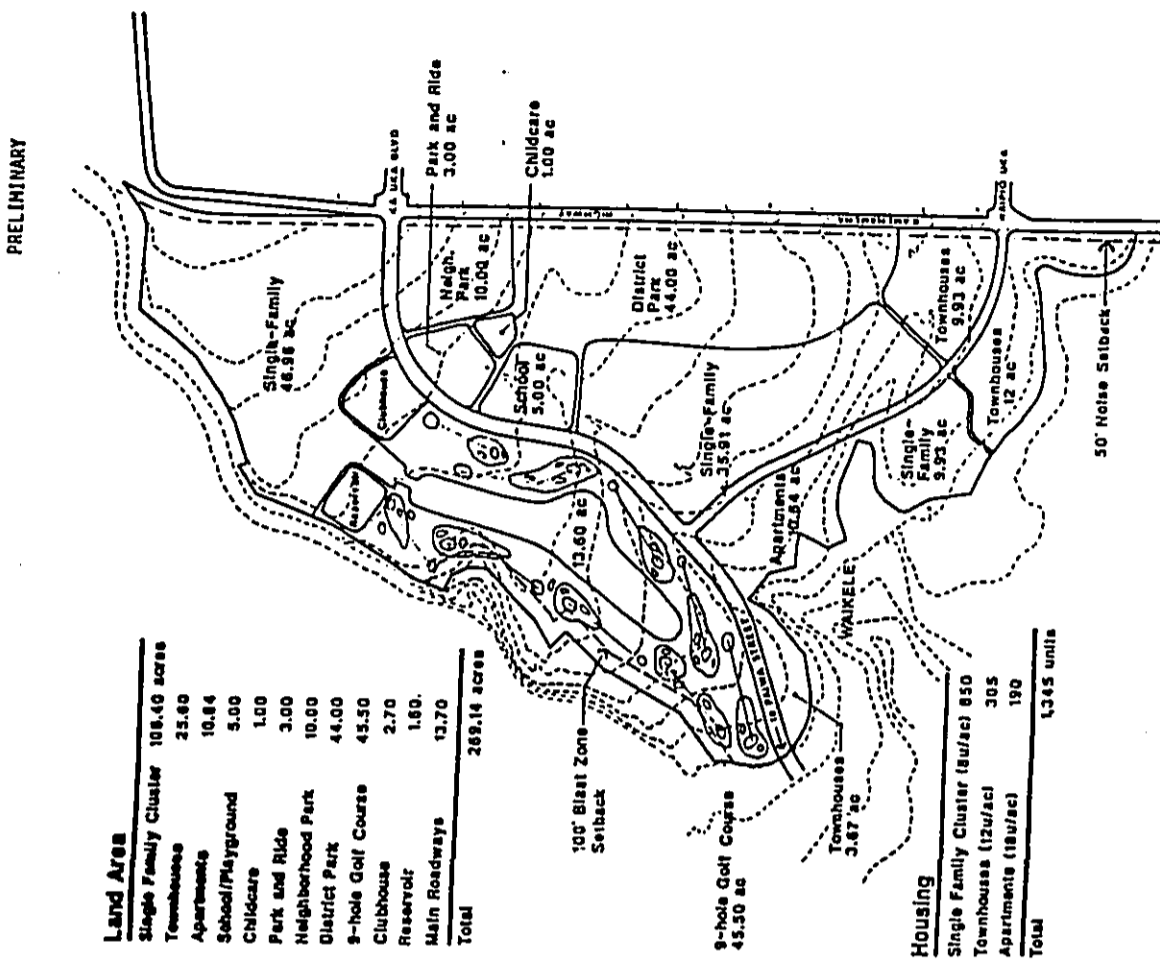


PROJECT LOCATION



GENERAL LOCATION MAP

FIGURE 1



Land Area	Acres
Single Family Cluster	108.40
Townhouses	25.60
Apartments	10.84
School/Playground	5.00
Childcare	1.00
Park and Ride	3.00
Neighborhood Park	10.00
District Park	44.00
9-hole Golf Course	45.50
Clubhouse	2.70
Reservoir	1.80
Main Roadways	13.70
Total	269.16

Housing	Units
Single Family Cluster (850)	850
Townhouses (120/acre)	305
Apartments (180/acre)	190
Total	1,345

November 22, 1988

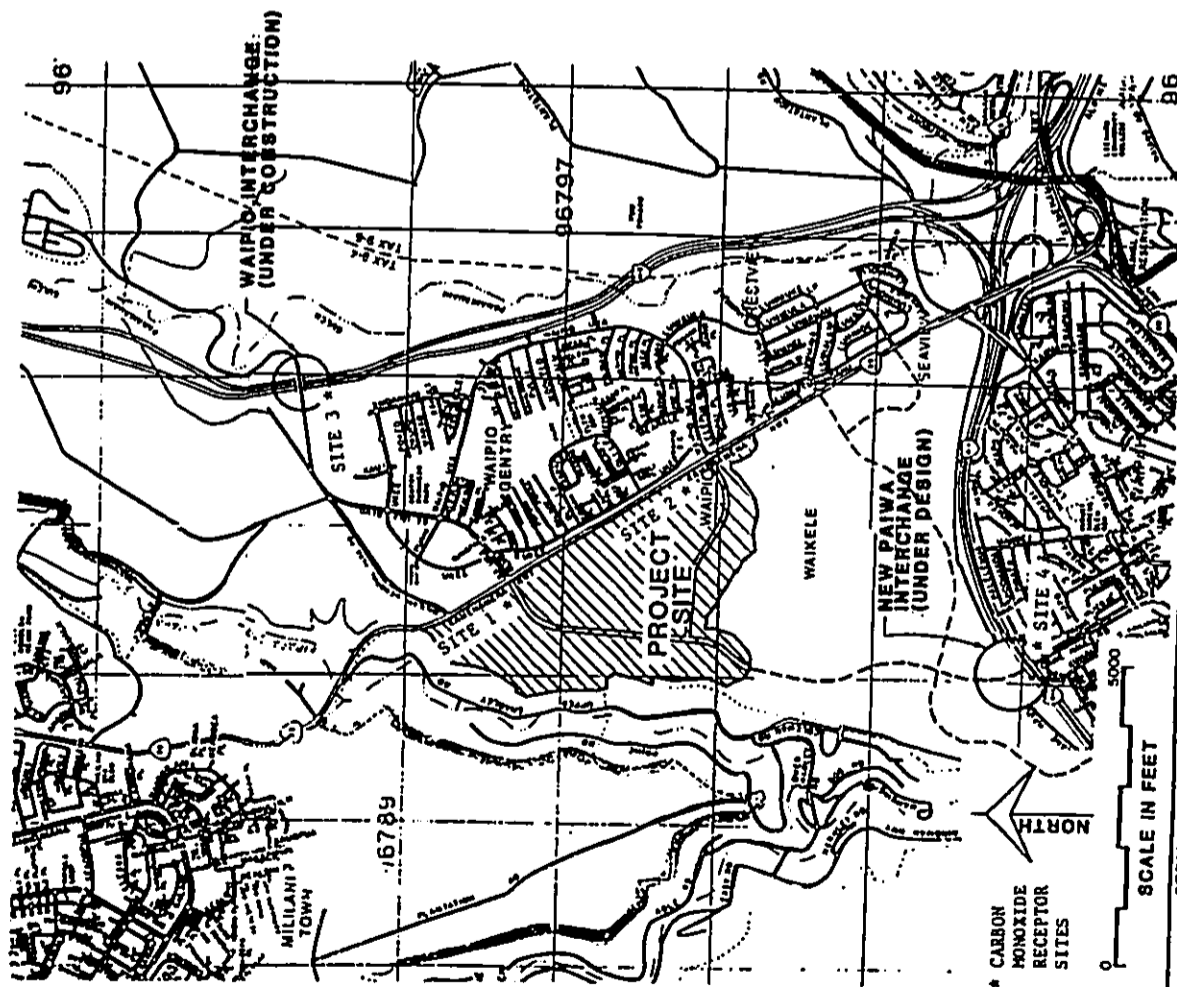
North

0 200 400 800

Graphic Scale in Feet

FIGURE 3

WAIOLA ESTATES



DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT CITY AND COUNTY OF HONOLULU TRAFFIC IMPACT REPORT FOR THE PROPOSED WAIOLA ESTATES PROJECT	AUSTIN, TRUTSUMI, & ASSOC., INC. (REGISTERED PROFESSIONAL ENGINEERS)	EXHIBIT 2
	VICINITY MAP	

TABLE 1

SUMMARY OF STATE OF HAWAII AND
FEDERAL AMBIENT AIR QUALITY STANDARDS
(AAQS)
(micrograms per cubic meter except where noted)

POLLUTANT	SAMPLING PERIOD	FEDERAL		STATE OF HAWAII
		PRIMARY	SECONDARY	
Total Suspended Particulate Matter (TSP)	Annual Geometric Mean	75	60	60
	24 Hour	260	150	150
PM-10 Particulates <10 microns in diameter	Annual Mean	50	50	50
	24 Hour	150	150	150
Sulfur Dioxide	Annual Mean	80		80
	24 Hour	365		365
	3 Hour		1300	1300
Nitrogen Dioxide	Annual Mean		100	100
	8 Hour		10	5
Carbon Monoxide (milligrams per cubic meter)	1 Hour		40	10
	1 Hour			
Photochemical Oxidants (as Ozone)	1 Hour		240	100
	Calendar Quarter		1.5	1.5

Federal AAQS: U.S. Government, Code of Federal Regulations, Title 40, Protection of Environment, Part 50, National Primary and Secondary Ambient Air Quality Standards.

State of Hawaii AAQS: State of Hawaii, Title 11, Administrative Rules, Chapter 59, Ambient Air Quality Standards, as amended, April, 1986.

TABLE 2

SUMMARY OF RECENT AIR POLLUTANT MEASUREMENTS
AT MONITORING STATIONS NEAREST TO
THE PROPOSED PROJECT SITE

Pollutant/Location	1985	1986	1987
Carbon Monoxide/Honolulu: (milligrams per cubic meter)			
No. Days of 1-Hr Samples	342	348	345
Range of Daily Max 1-Hr Values	0.0 - 10.4	0.2 - 13.5	0.3 - 11.1
Average Daily Max 1-Hr Value	1.5	2.2	1.7
No. of State 1-Hr AAQS Exceedences	1	3	1
No. Days of 8-Hr Samples	246	213	228
Range of Daily Max 8-Hr Values	0.1 - 4.4	0.3 - 4.7	0.3 - 3.9
Average Daily Max 8-Hr Value	1.3	1.4	1.2
No. of State 8-Hr AAQS Exceedences	0	0	0
Ozone/Sand Island: (micrograms per cubic meter)			
No. Days of 1-Hr Samples	341	346	342
Range of Daily Max 1-Hr Values	8 - 198	10 - 88	4 - 84
Average Daily Max 1-Hr Value	43	39	36
No. of State 1-Hr AAQS Exceedences	3	0	0
Lead/Liliha: (micrograms per cubic meter)			
No. of 24-Hr Samples	58	61	59
Range of 24-Hr Values	0.0 - 0.5	0.0 - 0.3	0.0 - 0.1
Average Quarterly Value	0.2	0.0	0.0
No. of State AAQS Exceedences	0	0	0

TABLE 2 CONT'D
 SUMMARY OF RECENT AIR POLLUTANT MEASUREMENTS
 AT MONITORING STATIONS NEAREST TO
 THE PROPOSED PROJECT SITE

Pollutant/Location	YEAR		
	1985	1986	1987
Particulate Matter/Pearl City (micrograms per cubic meter)	47	60	51
No. of 24-Hr Samples	16 - 62	17 - 65	20 - 61
Range of Daily Values	35	29	34
Average Daily Value	0	0	0
No. of State 24-Hr AAQS Exceedences			
PM-10/Pearl City: (micrograms per cubic meter)			
No. of 24-Hr Samples	27	61	63
Range of Daily Values	8 - 24	9 - 30	8 - 32
Average Daily Value	15	16	15
No. of 24-Hr AAQS Exceedences	0	0	0
Sulfur Dioxide/Barbers Point: (micrograms per cubic meter)			
No. of 24-Hr Samples	50	57	53
Range of Daily Values	<5 - 25	<5 - 10	<5 - 13
Average Daily Value	5	<5	5
No. of State 24-Hr AAQS Exceedences	0	0	0

Source: State of Hawaii Department of Health

TABLE 3

ESTIMATED ANNUAL EMISSIONS OF AIR POLLUTANTS
 TO MEET DEMANDS OF WAIOLA ESTATES PROJECT
 FOR ELECTRICAL ENERGY AND SOLID WASTE DISPOSAL

POLLUTANT	POWER PLANTS	H-POWER
Particulate Matter	1.8	0.5
Sulfur Dioxide	18.1	1.1
Nitrogen Dioxide	24.0	5.5
Carbon Monoxide	1.1	4.9

EMISSIONS
(Tons/Year)

TABLE 4

RESULTS OF MORNING PEAK HOUR CARBON MONOXIDE MODELING
(milligrams per cubic meter)

SITE	LOCATION	YEAR/SCENARIO	
		1989	1993 WITHOUT WAIOLA WITH WAIOLA
1	Kaehana Highway & Ka Uka Boulevard	9	7 10
2	Kaehana Highway & Waipio Street	12	7 10
3	H-2 at Waipio Interchange	1	2 2
4	H-1 at Paliwa Interchange	1	10 11

STATE OF HAWAII AQOS: 10
FEDERAL AQOS: 40

NOTE: See Figure 2 for location of receptor sites. See text, Section 7, for description of scenarios, models, and assumptions.

TABLE 5

ESTIMATE OF MAXIMUM EIGHT HOUR CARBON MONOXIDE CONCENTRATION
(milligrams per cubic meter)

SITE	LOCATION	YEAR/SCENARIO	
		1989	1993 WITHOUT WAIOLA WITH WAIOLA
1	Kaehana Highway & Ka Uka Boulevard	4	3 4
2	Kaehana Highway & Waipio Street	5	3 4
3	H-2 at Waipio Interchange	<1	1 1
4	H-1 at Paliwa Interchange	<1	4 4

STATE OF HAWAII AQOS: 5
FEDERAL AQOS: 10

NOTE: See Figure 2 for location of receptor sites. See text, Section 7, for assumptions used in eight hour concentration estimate.

APPENDIX F

Update of Traffic Noise Impact Study

For The Proposed

Waiola Estates Subdivision

Prepared by

Y. Ebisu & Associates

February 1989

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UPDATE OF
TRAFFIC NOISE IMPACT STUDY
FOR THE PROPOSED
WAIOLA ESTATES SUBDIVISION

Prepared for:
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FEBRUARY, 1989

This study is an update of the original evaluation of potential noise impacts associated with the proposed Waiala Estates Subdivision. The results of the original evaluation were previously reported in Reference 1 and were based on the original traffic study (Reference 3) for the project. This current report extends the traffic noise evaluations from the 1990 to the 1993 time period. The traffic noise level increases on Kamehameha Highway and Ka Uka Boulevard were recalculated for the 1993 time period, and traffic noise impacts associated with project and non-project traffic were reassessed. Increases in traffic noise of 0.0 to 0.9 dbn are predicted to occur as a result of project plus non-project traffic on Kamehameha Highway and Ka Uka Boulevard.

The use of a 50 FT noise setback from the Kamehameha Highway Right-of-Way is planned for Waiala Estates homes fronting the highway. This setback, plus the 50+ FT distance between the highway Right-of-Way and the displaced highway centerline should be sufficient to maintain traffic noise levels at Waiala Estates homes in the "Moderate Exposure, Acceptable" category.

Although the proposed project is not expected to be the primary cause of traffic noise impacts in the area by 1993, secondary noise impacts associated with the planned widening of Kamehameha Highway in front of the subdivision are predicted for the worst case scenario of a widened highway operating at a higher capacity level in the time period beyond 1993. Noise mitigation measures may be required in the Gentry Waipio area south of Waipio Uka Boulevard to mitigate increased traffic noise levels, particularly if federal funding assistance is used in the widening project.

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CHAPTER II. PURPOSE AND METHODOLOGY

The purpose of this noise study update was to predict the traffic noise level increases associated with the proposed Waiola Estates Subdivision Project, and to evaluate possible noise impacts on the surrounding area resulting from the project traffic noise sources. Traffic noise predictions were performed using the Federal Highway Administration (FHWA) Noise Prediction Model (Reference 2), and using the updated traffic assignments for the project (Reference 4). Historical traffic counts obtained by the State Department of Transportation at stations on Kamehameha Highway (References 5 thru 8) were used to develop the relationships between peak hour Leg(h) and daily Ldn traffic noise levels, and to develop the assumed traffic mixes. Traffic volumes along Kamehameha Highway reported in Reference 4 were used in conjunction with the 1985 state counts to calculate the Base Year (or existing) traffic noise levels along the highway.

The future project and non-project traffic assignments were obtained from Reference 4, and apply to the 1993 time period. Major changes and improvements to the existing system by the 1993 time period were assumed, such as the widening of Kamehameha Highway at the Crestview and Seaview Village Subdivisions, the widening of Kamehameha Highway between Waipio Uka Street and Milliani Memorial Park Road, and the construction of access ramps to the H-2 Freeway at Milliani Memorial Park Road. Potential traffic noise impacts resulting from the additional non-project and project traffic were identified, and possible noise mitigation measures were described.

Potential traffic noise impacts (on existing Gentry Waipio and future Waiola Estates residences) resulting from the widening of Kamehameha Highway at the Waiola Estates Subdivision were previously evaluated. A worst case noise impact evaluation was performed assuming a maximum PH peak hour, two-way, traffic volume of 5,000 VPH at 35 to 40 MPH speed on the highway at capacity condi-

tions, and reported in the original noise study (Reference 1).

CHAPTER III. NOISE DESCRIPTORS AND THEIR RELATIONSHIP
TO LAND USE COMPATIBILITY

Two noise descriptors currently used to relate outdoor noise levels to land use compatibility, and to assess environmental noise in general, are the Equivalent Noise Level (Leq) and the Day-Night Average Sound Level (Ldn). Both of these descriptors are averages of instantaneous A-Weighted Sound Levels as read on a standard Sound Level Meter. In traffic noise evaluations, the averaging period for the Leq descriptor is usually an hour, and more specifically, the peak hour of traffic. In all evaluations, the minimum averaging period for the Ldn descriptor is 24 hours (by definition), with the recommended averaging period being one year for land use compatibility evaluations. Additionally, sound levels which occur during the nighttime hours of 10:00 PM to 7:00 AM are increased by 10 decibels (dB) prior to computing the 24-hour average by the Ldn descriptor. A glossary of acoustical descriptors is contained in APPENDIX B.

TABLE 1, which was derived from information contained in Reference 9, presents current federal standards and acceptability criteria for residential land uses exposed to various levels of environmental noise. As a general rule, noise levels of 55 Ldn or less occur in rural areas or urbanized areas which are shielded from high volume streets. In urbanized areas, Ldn levels generally range from 55 to 65 Ldn, and are usually controlled by motor vehicle traffic noise. Buildings which front major roadways are generally exposed to levels of 65 Ldn, and as high as 72 Ldn when the roadway is a high speed freeway. Due to noise shielding effects from intervening structures, buildings which are located within interior lots are exposed to lower exterior noise levels of 60 Ldn or less.

For the purposes of determining noise acceptability for funding assistance from federal agencies (FHA/HUD and VA), an exterior noise level of 65 Ldn or lower is considered acceptable for

TABLE 1

EXTERIOR NOISE EXPOSURE CLASSIFICATION
(RESIDENTIAL LAND USE)

NOISE EXPOSURE CLASS	DAY-NIGHT SOUND LEVEL	EQUIVALENT SOUND LEVEL	FEDERAL(1) STANDARD
Minimal Exposure	Not Exceeding 55 Ldn	Not Exceeding 55 Leq	Unconditionally Acceptable
Moderate Exposure	Above 55 Ldn But Not Above 65 Ldn	Above 55 Leq But Not Above 65 Leq	Acceptable(2)
Significant Exposure	Above 65 Ldn But Not Above 75 Ldn	Above 65 Leq But Not Above 75 Leq	Normally Unacceptable
Severe Exposure	Above 75 Ldn	Above 75 Leq	Unacceptable

Notes: (1) Federal Housing Administration, Veterans Administration, Department of Defense, and Department of Transportation.

(2) FHWA uses the Leq instead of the Ldn descriptor. For planning purposes, both are equivalent if: (a) heavy trucks do not exceed 10 percent of total traffic flow in vehicles per 24 hours, and (b) traffic between 10:00 PM and 7:00 AM does not exceed 15 percent of average daily traffic flow in vehicles per 24 hours. The noise mitigation threshold used by FHWA for residences is 67 Leq.

residential developments. This standard is applied nationally (see Reference 10), including Hawaii. Because of our open living conditions, the predominant use of naturally ventilated dwellings, and the relatively low exterior to interior sound attenuation afforded by these naturally ventilated structures, an exterior noise level of 65 Ldn in local residential neighborhoods does not eliminate all risks of noise impacts. For these reasons, and as recommended in Reference 11, a lower level of 55 Ldn is considered as the "Unconditionally Acceptable" (or "Near Zero Risk") level of exterior noise for residential uses. However, after considering the cost and feasibility of applying the lower level of 55 Ldn, government agencies such as FHA/HUD and VA have selected 65 Ldn as a more appropriate regulatory standard.

For commercial and light industrial developments, exterior noise levels in the order of 65 to 75 Ldn are considered acceptable. FIGURE 1, extracted from Reference 12, depicts suggested noise level compatibility guidelines for various land use categories. Note that for commercial land uses, "Compatible" (or "Unconditionally Acceptable") noise levels are approximately 10 Ldn higher than for residential uses. This is due to the generally higher tolerance for noise in nonresidential settings, and the higher probability of total closure and air conditioning of commercial structures. Federal agencies utilize similar land use compatibility guidelines (Table 2 of Reference 9) for commercial and light industrial developments.

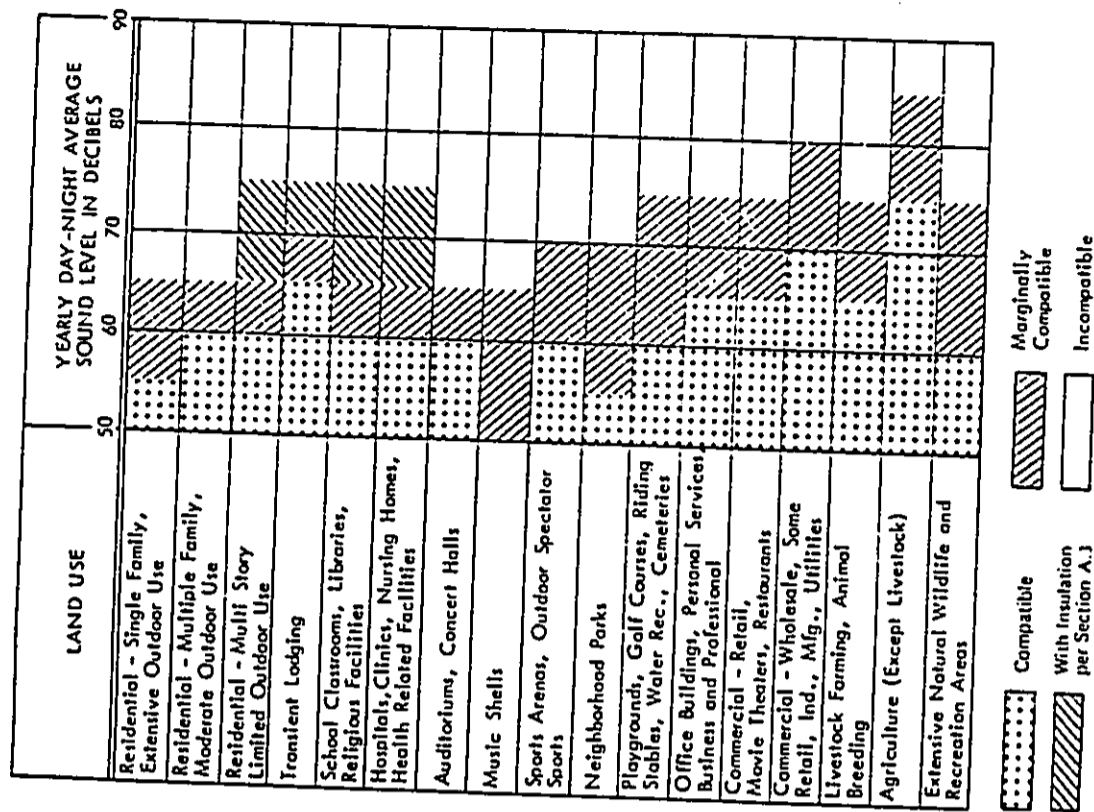


FIG. 1. Land use compatibility with yearly day-night average sound level at a site for buildings as commonly constructed. [For information only; not a part of American National Standard for Sound Level Descriptors for Determination of Compatible Land Use S3.23-1980.]

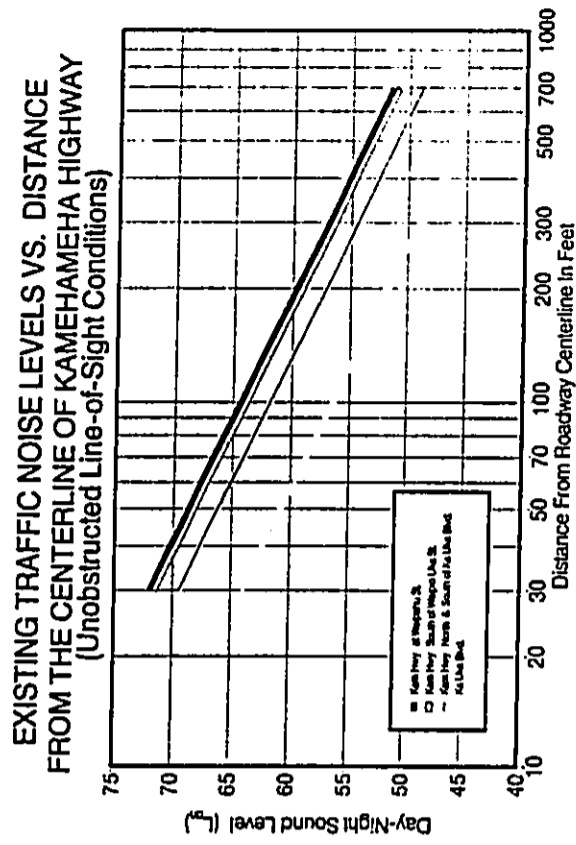
CHAPTER IV. EXISTING NOISE ENVIRONMENT

Along the Kamehameha Highway Right-of-Way, existing or Base Year traffic noise levels are in the "Significant Exposure, Normally Unacceptable" category. Existing setback distances to the 65 Ldn contour line are estimated at 61 FT and 81 FT from the centerline of the highway in directions north and south, respectively, of the project (see FIGURE 2). In the vicinity of the Waipahu Street intersection, where traffic volumes are highest, the existing setback distance to the 65 Ldn contour line is estimated at 88 FT from the centerline of Kamehameha Highway. In the Crestview and Seaview Village Subdivision areas near the Waipahu Street intersection, traffic noise levels are in the "Significant Exposure, Normally Unacceptable" category (approximately 66 to 68 Ldn) along the first row of lots which front the highway. In the Gentry Waipio Subdivision area north of the Crestview Subdivision, significantly larger (approximately 95 to 150 FT) setbacks exist between Kamehameha Highway and the existing dwelling units, and traffic noise levels are therefore in the "Moderate Exposure, Acceptable" category at 64 to 59 Ldn.

Along Ka Uka Boulevard, existing traffic noise levels are low, and in the "Moderate Exposure, Acceptable" category, with traffic noise levels at approximately 61 Ldn along the Right-of-Way.

Existing background ambient noise levels at the proposed subdivision site are controlled by traffic noise within 500 FT of Kamehameha Highway. Beyond that distance, background ambient noise is controlled by aircraft, or birds and other natural sources, and is estimated at 40 to 45 Ldn.

FIGURE 2



CHAPTER V. FUTURE TRAFFIC NOISE ENVIRONMENT

Predictions of future (CY 1993) traffic noise levels were made using the traffic volume assignments for the project as contained in TABLE 2. Future traffic noise levels on each roadway segment were calculated separately with and without the project traffic. Also, the contributions of project traffic noise levels to the total (project plus non-project) levels were calculated.

The predicted increases in PM peak hour Leq(h) and daily Ldn traffic noise levels from the present to the completion of the development in 1993 are shown in TABLE 3. The difference between Ldn and peak hour Leq(h) was assumed to be equal to the present difference of 1.3 dB. TABLE 4 presents the predicted increases and decreases in the setback distances to the 60, 65, and 70 Ldn traffic noise contours under unobstructed line-of-sight sound propagation conditions, and with the project traffic included. For a fully developed Waiola Estates Subdivision, increases in the setback distances to the 65 Ldn contour are predicted to be approximately 3 FT along Kamehameha Highway to the north of the project; approximately 8 FT along Kamehameha Highway fronting the project; and 3 FT along Ka Uka Boulevard. It should be noted that the predicted increases in the noise contour setback distances are the result of both project and non-project traffic volume increases. South of the project along Kamehameha Highway, the setback distances to the 65 Ldn contour are predicted to decrease from Base Year setback distances.

TABLE 5 presents the anticipated increases in traffic noise levels, and the contribution of project traffic to these increases. As indicated in TABLE 5, increases in traffic noise levels associated with project traffic are predicted to range from 0.0 to 2.2 Ldn. Following completion of the subdivision project, future traffic noise levels along Kamehameha Highway south of the project site are predicted to decrease by 0.3 to 1.1 Ldn. To the north, future traffic noise levels along Kamehameha Highway are predicted

TABLE 2
FUTURE PROJECT AND NON-PROJECT TRAFFIC VOLUMES
FOR PM PEAK HOUR (IN VPH)

STREET SECTION	NON-PROJECT VOLUME (VPH)	PROJECT VOLUME (VPH)
Kam. Hwy. North of Ka Uka	1,584	77
Kam. Hwy. South of Ka Uka	1,580	169
Kam. Hwy. S. of Waipio Uka	2,098	274
Kam. Hwy. @ Waipahu St.	2,998	274
Ka Uka Boulevard	352	438

LOCATION	SPEED VPH (MPH)	* HOURLY LEQ(H) IN DB @ 50' * DB ALL VEH INCREASE					
		AUTO	MT	HT			
EXISTING PM PEAK HR. TRAFFIC:							
Kam. Hwy. North of Ka Uka	40	1,540	62.5	57.0	59.3	65.0	-
Kam. Hwy. South of Ka Uka	40	1,432	62.2	56.7	59.0	64.7	-
Kam. Hwy. S. of Waipio Uka	40	2,377	64.4	58.9	61.2	66.9	-
Kam. Hwy. @ Waipahu St.	40	2,698	65.0	59.5	61.8	67.4	-
Ka Uka Boulevard	35	677	56.7	51.5	54.3	59.5	-
FUTURE PM PEAK HR. TRAFFIC:							
Kam. Hwy. North of Ka Uka	40	1,661	62.8	57.4	59.6	65.3	0.3
Kam. Hwy. South of Ka Uka	40	1,749	63.1	57.6	59.9	65.5	0.9
Kam. Hwy. S. of Waipio Uka	37	2,372	63.1	57.8	60.4	65.7	-1.1
Kam. Hwy. @ Waipahu St.	37	3,272	64.5	59.2	61.8	67.1	-0.3
Ka Uka Boulevard	35	790	57.4	52.2	55.0	60.1	0.7

Note: Assumed traffic mix of 97% Autos, 2% Medium Trucks, and 1% Heavy Vehicles on Ka Uka Boulevard and Kamehameha Highway.

TABLE 3

COMPARISONS OF EXISTING AND FUTURE TRAFFIC NOISE LEVELS IN PROJECT ENVIRONS

STREET SECTION	60 Ldn SETBACK (FT)		65 Ldn SETBACK (FT)		70 Ldn SETBACK (FT)	
	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE
Kam. Hwy. North of Ka Uka	131	138	61	64	28	30
Kam. Hwy. South of Ka Uka	125	143	58	66	27	31
Kam. Hwy. S. of Waipio Uka	175	147	81	68	38	32
Kam. Hwy. @ Waipahu St.	190	182	88	84	41	40
Ka Uka Boulevard	56	62	26	29	12	13

Notes: All setback distances are from the roadway centerlines. See TABLE 3 for traffic assumptions. Ldn assumed to be 1.3 dB greater than PM peak hour Ldn for all roadways. Setback distances are for unobstructed line-of-sight conditions.

TABLE 5
PROJECT AND NON-PROJECT TRAFFIC NOISE INCREASES

LOCATION	EXISTING Ldn	FUTURE Ldn	PROJECT INCREASE
Kam. Hwy. North of Ka Uka	66.3	66.6	0.2
Kam. Hwy. South of Ka Uka	66.0	66.8	0.5
Kam. Hwy. S. of Waipio Uka	68.2	67.0	-1.1
Kam. Hwy. @ Waipahu St.	68.7	68.4	-0.3
Ka Uka Boulevard	60.8	61.4	2.2

Note: Ldn values calculated at 50 FT from roadways' centerlines.

to increase by 0.2 Ldn, which is not significant. The greatest increases in project related traffic noise are predicted to occur along Ka Uka Boulevard, and are expected to be in the order of 2.2 Ldn. However, non-project traffic noise levels along the boulevard are predicted to decrease, resulting in a smaller net increase in total noise levels by 0.7 Ldn.

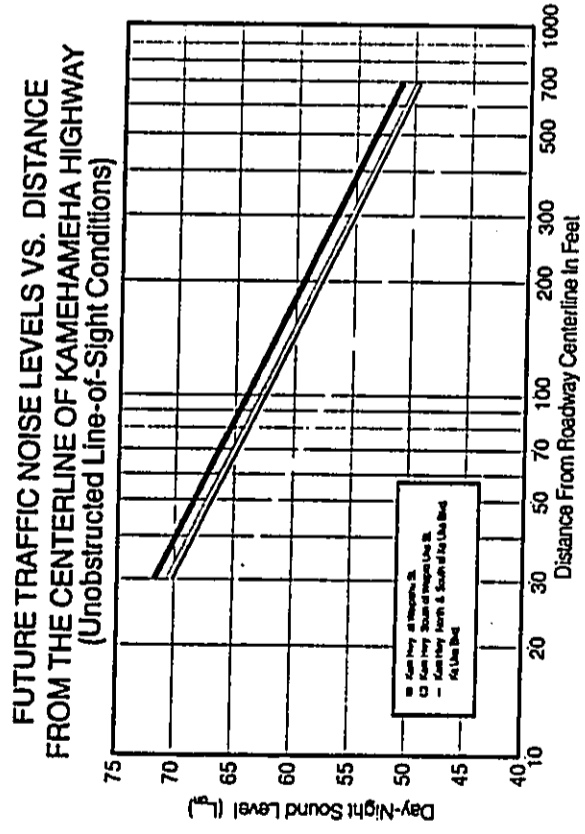
Future traffic noise levels vs. distance from the centerlines of the street segments servicing the project are depicted in FIGURE 3 for unobstructed line-of-sight conditions. Future traffic noise levels along the Kamehameha Highway Right-of-Way at the Waiala Estates Subdivision are predicted to be in the "Significant Exposure, Normally Unacceptable" category, with noise levels of 66 Ldn along the Highway Right-of-Way. Along Ka Uka Boulevard, future traffic noise increases are predicted to be 0.7 Ldn. Although the increases along Ka Uka Boulevard are predicted to occur, future noise levels along the boulevard are expected to remain in the "Moderate Exposure, Acceptable" category following development of the project.

Due to their relatively large setback distances, all front row homes of the proposed Waiala Estates Subdivision are expected to be exposed to traffic noise levels below FHWA and FHA/HUD standards under worst case conditions (see Reference 1). Due to their large setback distance of 150 FT, all homes of Gentry Waipio north of Waipio Uka Street will not be exposed to traffic noise above the federal standards. Existing homes of Gentry Waipio south of Waipio Uka Street, which are within 70 FT of the displaced centerline of Kamehameha Highway, are predicted to exceed FHA/HUD standards.

Along the internal circulation roadways of the proposed subdivision, traffic noise levels should not exceed FHWA or FHA/HUD criteria at 28 FT setback distance (from the roadway centerline) for peak hour volumes less than 750 VPH and average speeds of 35 MPH or less. Because peak hour, project traffic volumes are not expected to exceed 750 VPH on either of the two major roadways

through the proposed subdivision, traffic noise levels along the internal roadways of the project should be in the "Moderate Exposure, Acceptable" noise exposure category for minimum setback distances of 28 Ft.

FIGURE 3



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

CHAPTER VI. DISCUSSION OF FUTURE NOISE IMPACTS

Future traffic noise levels are expected to be in the "Significant Exposure, Normally Unacceptable" noise exposure category along the Waiola Estates Right-of-Way which fronts Kamehameha Highway. This conclusion is valid for both the existing and future Right-of-Way widths of Kamehameha Highway. A minimum setback distance of 100 FT from the centerline of the widened highway is required to meet FHWA and FHA/HUD standards for the worst case condition of approximately 5,000 VPH on the improved highway (see Reference 1). Construction of a 6 FT high sound attenuating wall along the highway Right-of-Way is a noise mitigation measure which would allow for reduced setback distances for single story homes fronting the highway. However, if multistory homes are constructed within 100 FT of the centerline of the highway, a 6 FT high wall will not be adequate, and other mitigation measures, such as air conditioning or the use of sound attenuating windows, will be required to meet federal standards.

Along Kamehameha Highway, at the existing Crestview and Seaview Village Subdivisions, traffic noise levels are predicted to decline from Base Year levels by approximately 0.3 Ldn from existing levels of approximately 66 Ldn. For this reason, project related traffic noise impacts are not expected to occur in the Crestview and Seaview Village Subdivisions.

At the existing Gentry Waipio residences south of Waipio Uka Street, project related traffic noise impacts are not expected due to the projected decrease in total traffic source noise levels by approximately 1.1 Ldn following completion of the project. However, due to the highway widening project, a 1.5 Ldn increase in traffic noise is predicted to occur as a result of the displacement of the highway centerline toward the Gentry Waipio residences. By CY 1993, a net increase of 0.4 Ldn is predicted due to changes in traffic volume and the widening project. The extra sound shielding (or attenuation) benefits of the roadway cut in

the area were not included in these estimates of the net increase in noise levels in the area south of Waipio Uka Street. A more detailed evaluation of the traffic noise levels in this area should be performed after the geometry of the new roadway cut is established.

Because of the large setback distance between Kamehameha Highway and Gentry Waipio residences north of Waipio Uka Street, future traffic noise is predicted to be below FHA/HUD noise mitigation thresholds, and remain in the "Moderate Exposure, Acceptable" noise category in the Gentry Waipio area.

Along Kamehameha Highway and north of the project toward Milliani Town, project related traffic noise impacts are predicted to be minimal and insignificant. Predicted increases in traffic noise levels attributable to project traffic were calculated to be only 0.3 Ldn.

Project and non-project traffic entering and exiting H-2 Freeway via the new access ramps are predicted to use Ka Uka Boulevard between the freeway and Kamehameha Highway. Traffic noise level increases along Ka Uka Boulevard by the 1993 period are predicted to be moderate (0.7 Ldn), and should not exceed federal standards at existing residences fronting the boulevard. Traffic noise impacts along the freeway are expected to be minimal because the major portion of the lands adjoining the freeway south of the planned access ramps are currently undeveloped, or are shielded from freeway noise by topographic features.

CHAPTER VII. POSSIBLE NOISE MITIGATION MEASURES

The results of this and the previous noise study indicate that sufficient setback distances exist to noise sensitive developments in the Gentry Waipio area between Waipio Uka Street and Ka Uka Boulevard, such that noise mitigation measures are not required for these existing Gentry Waipio residences. However, sufficient setback distances do not exist in the Crestview and Sea-view Subdivision areas toward Waipahu Street, and will probably not exist following the planned widening of Kamehameha Highway in that area. A minimum wall height of 6 FT may be required along the new highway Right-of-Way to reduce future traffic noise levels below 65 Ldn. A few (approximately four) two story homes in the area will not be entirely shielded by a 6 FT high wall, and the use of other mitigation measures, such as air conditioning affected rooms or installation of window sound attenuators, may be employed.

The use of a 50 FT noise setback from the Kamehameha Highway Right-of-Way is planned for Waioala Estates homes fronting the highway. This setback, plus the 50+ FT distance between the highway Right-of-Way and the displaced highway centerline should be sufficient to maintain traffic noise levels at Waioala Estates homes in the "Moderate Exposure, Acceptable" category. For this reason, additional noise mitigation measures are not required for compliance with FHA/HUD standards at future Waioala Estates homes along the highway.

APPENDIX A. REFERENCES

- (1) Traffic Noise Impact Study for the Proposed Waioala Estates Subdivision; Y. Ebisu & Associates; April, 1986.
- (2) Barry, T. and J. Reagan; "FHWA Highway Traffic Noise Prediction Model;" FHWA-RD-77-108, Federal Highway Administration; Washington, D.C.; December 1978.
- (3) Traffic Impact Report for the Proposed Waioala Estates Subdivision; Austin, Tsutsumi & Associates, Inc.; April, 1986.
- (4) Updated Existing and Future Traffic Assignments for the Proposed Waioala Estates Subdivision; Austin, Tsutsumi & Associates, Inc.; February 2, 1989.
- (5) April 29-30, 1985, Vehicle Type Classification, Station 13-V, Kamehameha Highway at Waipio Uka Street; Southeast Leg; State Department of Transportation.
- (6) April 29-30, 1985 24-Hour Traffic Counts, Station C-13-K, Kamehameha Highway at Waipahu Street; State Department of Transportation.
- (7) May 9-10, 1985 24-Hour Traffic Counts, Station C-13-J, Kamehameha Highway at Kipapa Stream; State Department of Transportation.
- (8) April 29-30, 1985 24-Hour Traffic Counts, Station 13-V, Kamehameha Highway at Waipio Uka Street; State Department of Transportation.
- (9) "Guidelines for Considering Noise in Land Use Planning and Control," Federal Interagency Committee on Urban Noise, June 1980.
- (10) "Environmental Criteria and Standards, Noise Abatement and Control, 24 CFR, Part 51, Subpart B," U.S. Department of Housing and Urban Development, July 12, 1979.
- (11) "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety," Environmental Protection Agency, EPA 550/9-74-004), March 1974.
- (12) American National Standard, "Sound Level Descriptors for Determination of Compatible Land Use," ANSI S1.23-1980, Acoustical Society of America.

EXCERPTS FROM EPA'S ACOUSTIC TERMINOLOGY GUIDE

Descriptor Symbol Usage
The recommended symbols for the commonly used acoustic descriptors based on A-weighting are contained in Table 1. As most acoustic criteria and standards used by EPA are derived from the A-weighted sound level, almost all descriptor symbol usage guidance is contained in Table 1.

Since acoustic nomenclature includes weighting networks other than "A" and measurements other than pressure, an expansion of Table 1 was developed (Table II). The group adopted the ANSI descriptor-symbol scheme which is structured into three stages. The first stage indicates that the descriptor is a level (i.e., based upon the logarithm of a ratio), the second stage indicates the type of quantity (power, pressure, or sound exposure), and the third stage indicates the weighting network (A, B, C, D, E, ...). If an weighting network is specified, "A" weighting is understood. Exceptions are the A-weighted sound level and the A-weighted peak sound level which require that the "A" be specified. For convenience in those situations in which an A-weighted descriptor is being compared to that of another weighting, the alternative column in Table II permits the inclusion of the "A". For example, a report on blast noise might wish to contrast the L_{Cdn} with the L_{Aeq} .

Although not included in the tables, it is also recommended that "L_{eq}" and "L_{eq}(t)" be used as symbols for perceived noise levels and effective perceived noise level, respectively.

It is recommended that in their initial use within a report, such terms be written in full, rather than abbreviated. An example of preferred usage is as follows:
The A-weighted sound level (L_A) was measured before and after the installation of acoustical treatment. The measured L_A values were 85 and 75 dB respectively.

Descriptor Nomenclature

With regard to energy averaging over time, the term "average" should be discouraged in favor of the

term "equivalent". Hence, L_{eq} is designated the "equivalent sound level". For L_{eq} , $L_{eq}(t)$, and "equivalent" level, the concept of "day, night, or night averaging" is by definition understood. Therefore, the designations are "day sound level", "night sound level", and "day-night sound level", respectively.

The peak sound level is the logarithmic ratio of peak sound pressure to a reference pressure and not the maximum root mean square pressure. While the latter is the maximum sound pressure level, it is often incorrectly labelled peak. In that sound level meters have "peak" settings, this distinction is most important.

"Background ambient" should be used in lieu of "background", "ambient", "residual", or "indigenous" to describe the level characteristic of the general background noise due to the contribution of many unidentifiable noise sources near and far.

With regard to units, it is recommended that the unit decibel (abbreviated dB) be used without modification. Hence, dBA, dBS, and dBSPL are not to be used. Examples of this preferred usage are: the Perceived Noise Level (PNL) was found to be 75 dB; $L_{PN} = 75$ dB. This decision was based upon the recommendations of the National Bureau of Standards, and the policies of ANSI and the Acoustical Society of America, all of which allow any modification of dB except for prefixes indicating its multiples or submultiples (e.g., deci).

Noise Impact
In discussing noise impact, it is recommended that "Level Weighted Population" (LWP) replace "Equivalent Noise Impact" (ENI). The term "Relative Change of Impact" (RCI) shall be used for comparing the relative differences in LWP between two alternatives. Further, when appropriate, "Noise Impact Index" (NII) and "Population Weighted Loss of Hearing" (PWL) shall be used consistent with CHARA Working Group 69 Report Guidelines for Preparing Environmental Impact Statements (1977).

APPENDIX B. (CONTINUED)
TABLE II: Recommended Descriptor List

TEXT

TERM	A-WEIGHTING	ALTERNATIVE (1) A-WEIGHTING	OTHER WEIGHTING	UNWEIGHTED
1. Sound (Pressure) Level	L_A	L_pA	$L_B, L_C, L_D, L_E, L_{max}$	L_p
2. Sound Power Level	L_{WA}		L_{WB}	L_W
3. Max. Sound Level	L_{max}	L_{maxA}	L_{maxB}	L_{pmax}
4. Peak Sound (Pressure) Level	L_{pA}		L_{pB}	L_{pk}
5. Level Exceeded $x\%$ of the time	L_x	L_{Ax}	L_{Bx}	L_{px}
6. Equivalent Sound Level	L_{eq}	L_{Aeq}	L_{Beq}	L_{peq}
7. Equivalent Sound Level Over Time (t)	$L_{eq}(t)$	$L_{Aeq}(t)$	$L_{Beq}(t)$	$L_{peq}(t)$
8. Day Sound Level	L_d	L_{Ad}	L_{Bd}	L_{pd}
9. Night Sound Level	L_n	L_{An}	L_{Bn}	L_{pn}
10. Day-Night Sound Level	L_{dn}	L_{Adn}	L_{Bdn}	L_{pdn}
11. Yearly Day-Night Sound Level	$L_{dn}(y)$	$L_{Adn}(y)$	$L_{Bdn}(y)$	$L_{pdn}(y)$
12. Sound Exposure Level	L_S	L_{SA}	L_{SB}	L_{Sp}
13. Energy Average value over (non-time domain) set of observations	$L_{eq}(e)$	$L_{Aeq}(e)$	$L_{Beq}(e)$	$L_{peq}(e)$
14. Level exceeded $x\%$ of the total set of (non-time domain) observations	$L_x(e)$	$L_{Ax}(e)$	$L_{Bx}(e)$	$L_{px}(e)$
15. Average L_x value	L_x	L_{Ax}	L_{Bx}	L_{px}

- (1) "Alternative" symbols may be used to assure clarity or consistency.
- (2) Only B-weighting shown. Applies also to C, D, E, ... weighting.
- (3) The term "pressure" is used only for the unweighted level.
- (4) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is $L_{eq}(1)$). Time may be specified in non-quantitative terms (e.g., "the washing cycle noise for a washing machine").

APPENDIX G

Drainage Report

For

Waiola Estates

At

Waipio, Ewa, Oahu, Hawaii

Tax Map Key: 9-4-07: 1

by

Park Engineering, Inc.

February 1989

The development will be generally sloped from north to south, the same pattern of the existing topography.

Except for some minor surface runoff from along Kamehameha Highway fronting the project site, areas outside the confines of the development area do not contribute any storm water to the site. However, as part of this project, improvement will be made to the highway fronting the development area and the runoff along the highway will be collected and directed to the existing drain line on Maipio Uka Street. Therefore, the drainage systems for the subdivision will handle only on-site surface runoff. A network of underground drainage systems, together with inlet structures will handle the runoff from the development area.

Presently, concentrations of surface runoff from the development area discharges at five (5) different offsite locations. The network of underground drainage systems for the development will discharge into these five (5) off-site locations.

When the 270 acres are fully developed, the site will generate approximately 866 cfs during a 10 yr ($T_m = 10$ yr) storm. During peak storm ($T_m = 50$ yr), the area will generate approximately 1,134 cfs. The attached Drainage Runoff Map shows the acreages for each sub-area and the approximate locations of the network of drainage system outlets from each sub-area. The Hydrologic Analysis Section of this report tabulates the runoffs from each sub-area.

The criteria set forth in the STORM DRAINAGE STANDARDS, May 1988, of the Department of Public Works, City and County of Honolulu, will be used in the drainage network systems for this project. The systems will be designated to handle a 10 yr storm.

For drainage areas greater than 100 acres, the Storm Drainage Standards refer to Plate 6 to determine the runoff quantity. Sub-area B is greater than 100 acres. However, within the sub-area, there will be separate drainage systems

with its own off-site discharge outlet. Drainage areas for each system will be somewhat less than 100 acres. Therefore, Plate 6 would not be applicable in determining the runoff.

HYDROLOGIC ANALYSIS

Runoff Formula

$Q = CIA$
 Q = Runoff in cubic feet per second (cfs)
 C = Runoff coefficient
 I = Rainfall intensity in inches per hour (in/hr)
 A = Drainage area in acres (Acs)

Runoff Coefficient

$C = 0.65$ for Residential

Rainfall Intensity

$T_m = 10$ yr 1 hr rainfall = 2.6 in
 $T_m = 50$ yr 1 hr rainfall = 3.4 in

Time of Concentration

Typical Lot
Length = 150 ft
Slope = 1.5%
Pavement Slope = 0 - 3%
 $T_c = 16+1 = 17$ min
Correction Factor = 1.9

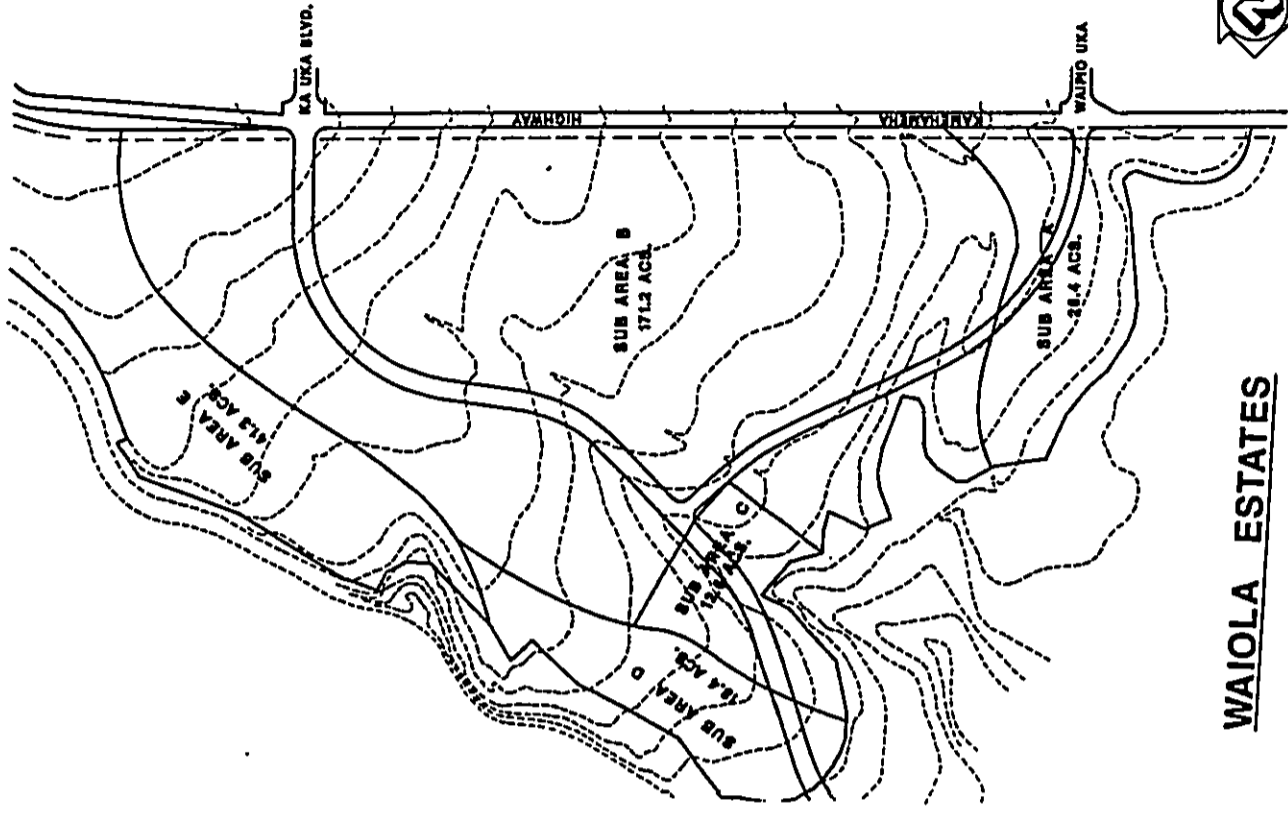
Rainfall Intensity

$I = 1.9 \times 2.6 = 4.94$ in/hr
 $I = 1.9 \times 3.4 = 6.46$ in/hr

Runoff/Area

$T_m = 10$ yr $CI = 4.494 \times 0.65 = 3.21$ cfs/Ac
 $T_m = 50$ yr $CI = 6.4 \times 0.65 = 4.20$ cfs/Ac

Runoff Area No.	Area (Ac.)	Q_{10} (cfs)	Q_{50} (cfs)
A	26.4	84.7	110.9
B	171.2	549.6	719.0
C	12.6	40.4	52.9
D	18.4	59.1	77.3
E	41.3	132.6	173.5
TOTAL	269.9	866.4	1133.6



WAIOLA ESTATES

DRAINAGE RUNOFF MAP



APPENDIX H

**Environmental Aspects of Storm Water Runoff
Waiola Estates Subdivision Development,
Central Oahu, Hawaii**

July 1986

by

**Gordon L. Dugan, Ph.D.
Environmental Consultant**

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INTRODUCTION

The proposed 269-acre Maioia Estates Development is situated on the west side of Kamehameha Highway, approximately two miles northwest of the Middle Loch of Pearl Harbor in central Oahu, as shown in Figure 1. The site, presently covered with a full stand of pineapple, gently slopes towards Pearl Harbor, with elevations ranging from approximately 310 to 420 ft over its approximately one mile longitudinal length. A more detailed boundary/location map is presented in Figure 2. A photograph of the pineapple fields covering the proposed site is shown in Figure 3.

The latest available isohyetal (rainfall) maps (Dowaid, 1982) indicate that the average annual rainfall at the project site is near 32 in., which corresponds very close to the previous long-term isohyetal lines, such as those shown in Figure 1. The evapotranspiration for the site is expected to be near 70 in./yr, based on previous studies using accurately measured lysimeters and long-range pan evaporation rates (Lau et al., 1974). Thus, the groundwater recharge potential of the site itself is quite limited, except for heavy storm events. In addition there is essentially no upgradient surface water runoff potential to the site as Kamehameha Highway and Kipapa Gulch forms the proposed project's upper boundaries (Figure 2). Over the years irrigation water movement has transversed and/or flowed into the site. The site is just inside the periphery of the 45.7 sq. mile Waialeale Watershed, the largest on Oahu, which includes the land use by agriculture, military, and municipal endeavors, as well as undeveloped land. The soil at the site is essentially completely represented by the Molokai soil series (Foote et al., 1974), a reddish colored soil, which is typically encountered in central Oahu.

RECEIVED AS FOLLOWS

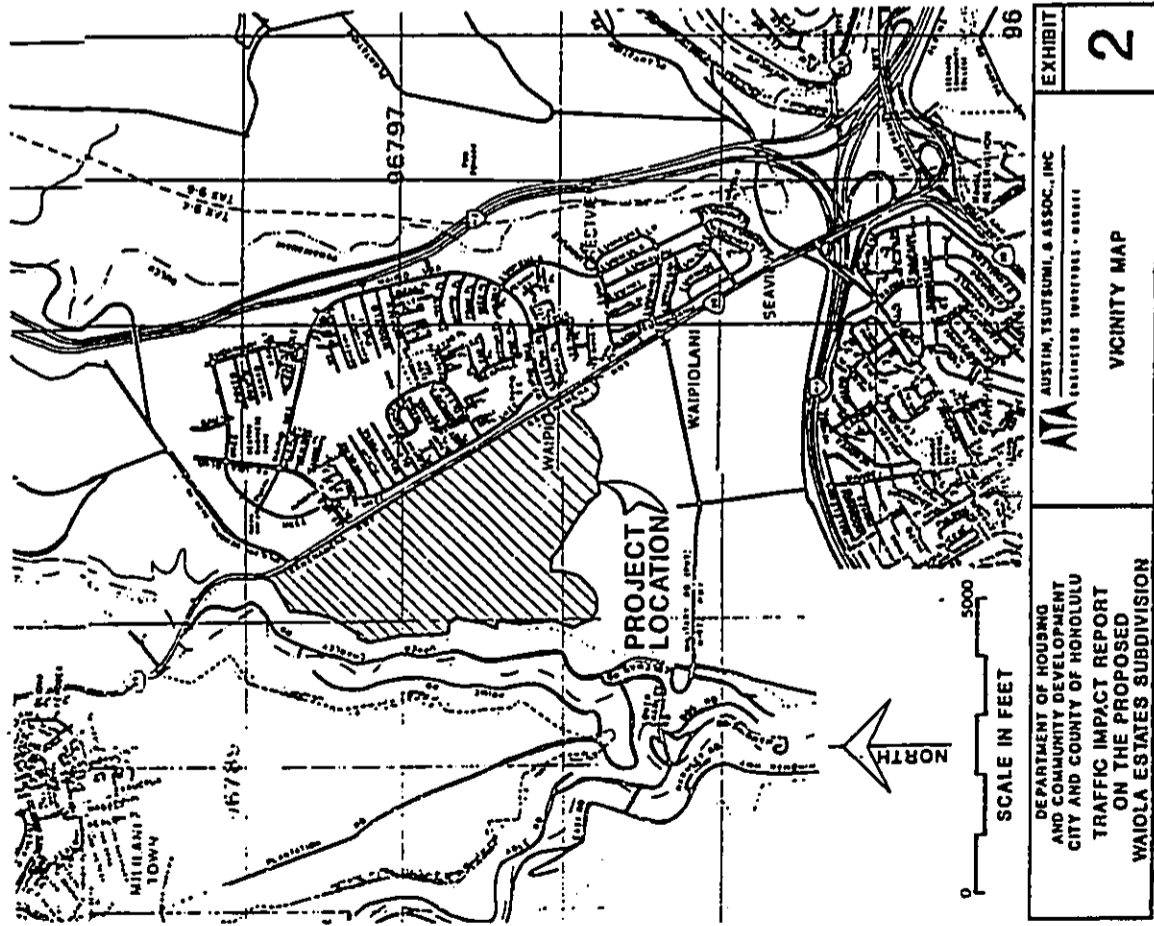


Figure 2. Proposed Waiola Estates Subdivision Development Site, Central Oahu, Hawaii

PURPOSE AND SCOPE

The purpose of this study is to evaluate the environmental impact of the proposed Waiola Estates Subdivision Development Project as it relates to surface water runoff. From an assemblage of baseline hydrologic and water quality data, an estimate of the existing and projected volume and quality characteristics of surface water runoff will be made, along with an assessment of the environmental impact resulting from this runoff, in the form of written comments.

METHODOLOGY

The methodology used in this study consisted of assembling, analyzing, and interpreting existing data from federal, state, and county agencies, as well as from on-site surveys of field conditions.



Figure 3. View (facing Hest Loch of Pearl Harbor) of the Pineapple Forest Covering the Proposed Waiola Estates Subdivision Development Site.

Inasmuch as the scope of work consisted of estimating the alterations in volume and quality of surface water runoff resulting from the proposed project, it was necessary to identify those factors that affect runoff generation and runoff quality for both pre- and post-development conditions.

Methods currently available to estimate the surface water runoff volume from a specific storm event requires the determination of reasonable rainfall-runoff coefficients for varying magnitude and duration storms, and for different land management, vegetation, soil, and soil moisture conditions, to name but a few hydrologic factors. In most practical situations, it is not considered feasible, due to the numerous influencing factors, to determine varying rainfall-runoff coefficients; rather, it is more practical for design and evaluation purposes to use a single coefficient for a particular land-use over a given rainfall-intensity range. However, in order to circumvent a major portion of the unavoidable error created by using a constant rainfall-runoff coefficient, a method developed by the Hawaii Environmental Simulation Laboratory (HESL) of the University of Hawaii, was utilized to determine representative storm water volumes under varying conditions (Lopez, 1974; Lopez and Dugan, 1978).

The HESL method is based on an incorporation of U.S. Soil Conservation Service (SCS) data and U.S. Weather Bureau data from the "Rainfall-Frequency Atlas of the Hawaiian Islands" (1962). The SCS data involves the use of soil maps (Foote et al., 1972) and SCS-derived curve numbers obtained from empirical data, including precipitation, soil and changing soil moisture conditions and vegetative cover information from the classification of thousands of soils throughout the nation. These soils were classified into four groups, labeled, A, B, C, and D, with Class A having the highest water intake rates and Class D soils the lowest. These curve numbers, modified for

Hawaiian conditions, pertain only to non-urban conditions. For urban conditions, the HESL method utilized information published by Miller and Viessman (1973).

Once the increase in surface water runoff volume had been established, it was necessary to determine the runoff quality for pre- and post-development conditions.

The quality parameters of stormwater runoff considered the most representative to identify potential changes under different land management practices (i.e. pre- and post-development conditions) are: total nitrogen; total phosphorus; and suspended solids (sediments).

The U.S. Geological Survey (USGS) in conjunction with its national stream flow gaging program periodically collects and analyzes samples from selected streams. The Waikole Stream at Waipahu, which as previously mentioned is the largest drainage area on Oahu (45.7 sq. miles to gaging site) is one of the most intensively (if not the most) sampled (water quality) stream site in the State of Hawaii. The gaging station is located 300 ft upstream of Highway 90 (Farrington Highway), about one-half mile above the point where it discharges into the West Loch of Pearl Harbor and about two miles directly south of the lower boundary of the proposed project site.

Although water sampling was conducted to some extent at the Waikole Stream gaging site from 1967 to 1972 extensive water quality sampling and analysis didn't commence until the summer of 1972. Since that time the full nitrogen series and total and phosphate phosphorus have been periodically conducted as well as numerous other water quality parameters including the major cations and anions, heavy metals, and occasionally various pesticides and biological parameters. In addition, an automatic sediment sampler was installed for relatively continuous suspended sediment samples in July 1972.

Prior to the summer of 1972 nitrate was the only nitrogen series analyzed for, there was no phosphorus analysis, and suspended sediment samples were collected by grab samples (USGS, 1967-1984). The automatic sediment (suspended) sampler enables the determination of the total daily sediment load and average concentration.

The total nitrogen and phosphorus concentration values, for comparative purposes for undeveloped conditions were derived by calculating the mean of the median yearly values for the period 1973 through 1984 (water year basis), which were 3.39 mg/L and 1.20 mg/L, respectively. For comparative purposes, and for conservative reasons, these values were rounded-off to 3.0 and 1.0 mg/L, respectively, for total nitrogen and total phosphorus. The average output of nitrogen, using the calculated values, for the mean flow over the 31 years of record (38.3 cfs) (USGS, 1967-1984) relates to a nitrogen output of approximately 8.8 lb N/acre-yr, with phosphorus being about one-third less. These output values appear somewhat higher, but not particularly out of the range, than those reported by Loehr (1972) for various rural and agricultural lands throughout the nation, which seemed to produce nitrogen output values of near 3 lb/acre-yr and phosphorus values one magnitude less. The higher values from the Waialeale Watershed is not surprising considering the composition of the land use within the Watershed.

The suspended solids (sediment) values were derived by plotting the weighted suspended solids concentration values (total suspended sediment load divided by mean daily flow) against the average daily flow for stream flows during the 1973-1984 water year period which appeared to have unweighted suspended sediment concentrations of > 500 mg/L. The weighted suspended sediment values proved to be higher than the unweighted values in all cases. A total of 53 values were plotted and nearly all appeared to approach or

exceed the previously reported 1-year return interval flow for Waialeale Stream (Department of Land and Natural Resources, 1971), however, this comparison can only be used as a rough indication inasmuch as instantaneous flow is compared to mean daily flow.

As would be expected and also reported in the extensive Oahu Water Quality Program Study (Department of Public Works, 1971) the suspended sediment output tended to increase with increasing flow. This was quite apparent in the plot of the 53 values, but there were a few seemingly deviate values, again as generally expected. Nevertheless, if for conservative comparative purposes the approximately lower one-third of the concentration values were assumed to represent the suspended sediment concentration value a derived comparative value of nearly 1200 mg/L was obtained, a value which was subsequently adopted.

Quality data for urban storm water (post-development conditions) is sparse, both locally and nationally. Loehr (1974) compiled urban storm water runoff quality data collected from throughout the United States, as well as from a few international locations. As expected, the data are diverse. Locally, Fujiwara (1973) reported urban storm water quality data collected from storm drains in different land use drainage areas of Honolulu, the residential portion of which is shown in Table 1. For the present study, his 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 in residential runoff.

Applying these concentrations to the post-development runoff volumes, the projected sediment and nutrient loads from the project site could then be estimated.

SURFACE WATER RUNOFF ALTERATIONS

Quantity

The estimated storm water runoff and constituent changes due to the proposed Waioala Estates Subdivision Development Project (269 acres) 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.

As previously mentioned the project site is represented by the Molokai soil series, listed by SCS as Class "B" soil, which is a fairly easily drained class of soils. Use was also made of a study of runoff from pineapple land on the island of Hawaii and Oahu through a cooperation agreement between the U.S. Conservation Laboratory in Phoenix, Arizona and the University of Hawaii at Manoa Department of Agronomy and Soil Science (Cooley and Lane, 1980). The study identified SCS curve numbers (used for runoff determinations) for pineapple land to be surprisingly lower than corresponding values from mainland conditions, 48 and 69, respectively. The net result of the lower curve number is a significant decrease in the amount of calculated surface runoff.

As can be readily observed in Table 2, there is essentially no storm runoff volume for the 1- and 5-yr, 1-hr duration storm for existing 1986 (pre-development) conditions; however, as the storm duration and recurrence interval increases the predevelopment conditions approaches about 1/2 of full development conditions. Among other factors causing this difference is that as the intensity and duration of the storm increases the ability of the soil to accept water decreases which approaches the less permeable

Table 1
Representative Storm Water Quality Data for a Honolulu Residential Area^{a/}

All units in mg/L except total coliform, fecal coliform, and fecal strep which are listed as No./100 mL.

<u>Constituent</u>	<u>Concentration</u>
Total Solids	511
Suspended Solids	252
COD	142
BOD	10
Dissolved Oxygen	7.1
NO ₃ -N	0.211
TKN	0.381
Total P	0.57
Ortho P	0.27
Grease	2.8
Lead	0.407
Chromium	0.013
Zinc	0.512
Copper	0.036
Iron	0.377
Total Coliform	83,000
Fecal Coliform	1,965
Fecal Strep	6,393

^{a/} Storm water samples collected on Aupuni Street near Kulelewa Stream.

* Values obtained from Fujiwara (1973).

TABLE 2

Estimated Storm Water Runoff Volume and Constituent Changes due to the Proposed Maioia Subdivision Development Project, Central Oahu, Hawaii

Storm ^a		Storm Water Runoff														
Dur- ation hr	Recur- rence Interval yr	Quan- tity in.	Hydraulic				Nitrogen ^b				Phosphorus ^c				Suspended Solids ^d	
			Development		Full		Development		Full		Development		Full		Development	
			1986 AF event	AF event	Δ AF event	1986 1b event	Full 1b event	Δ 1b event	1986 1b event	Full 1b event	Δ 1b event	1986 ton event	Full ton event	Δ ton event	1986 ton event	Full ton event
1	1	1.45	0.0	15.7	+ 15.7	0.0	25.6	+ 25.6	0.0	24.3	+ 24.3	0.00	5.33	+ 5.33	0.00	5.33
1	5	2.1	0.0	28.1	+ 28.1	0.0	45.8	+ 45.8	0.0	43.5	+ 43.5	0.00	9.54	+ 9.54	0.00	9.54
1	10	2.4	0.1	34.1	+ 34.0	0.9	55.6	+ 54.7	0.3	52.8	+ 52.5	0.18	11.58	+ 11.40	0.18	11.58
1	25	2.8	0.8	42.3	+ 41.5	6.4	69.0	+ 62.6	2.1	65.5	+ 63.4	1.28	14.37	+ 13.09	1.28	14.37
1	50	3.0	1.3	46.4	+ 45.1	10.9	75.8	+ 64.9	3.6	72.0	+ 68.4	2.18	15.79	+ 13.61	2.18	15.79
1	100	3.5	3.3	57.0	+ 53.7	26.7	93.0	+ 66.3	8.9	88.3	+ 79.4	5.34	19.37	+ 14.03	5.34	19.37
24	1	3.4	2.8	54.8	+ 52.0	23.1	89.5	+ 66.4	7.7	85.0	+ 77.3	4.61	18.65	+ 14.04	4.61	18.65
24	5	7.0	33.4	133.1	+ 99.7	272.8	217.3	- 55.5	90.9	206.4	+ 115.5	54.55	45.26	- 9.29	54.55	45.26
24	10	8.7	55.1	170.7	+ 115.6	449.6	278.6	- 171.0	149.9	264.7	+ 114.8	89.92	58.05	- 31.87	89.92	58.05
24	25	10.5	81.2	210.7	+ 129.5	662.8	343.9	- 318.9	220.9	326.7	+ 105.8	132.55	71.64	- 60.91	132.55	71.64
24	50	12.0	104.9	244.1	+ 139.2	855.9	398.4	- 457.5	285.3	378.5	+ 93.2	171.17	83.00	- 88.17	171.17	83.00
24	100	14.0	138.5	288.7	+ 150.2	1130.0	471.2	- 658.8	376.7	447.6	+ 70.9	226.00	98.16	- 127.84	226.00	98.16

a) From U.S. Weather Bureau "Rainfall Frequency Atlas of the Hawaiian Islands" (1962).

b) Based on a nitrogen value of 3.0 mg/L for 1986 conditions and 0.60 mg/L for "Full" development.

c) Based on a phosphorus value of 1.0 mg/L for 1986 conditions and 0.57 mg/L for "Full" development.

d) Based on a suspended solids value of 1200mg/L for 1986 conditions and 250 mg/L for "Full" development.

conditions that would normally occur under full developed conditions, as a result of roofs, sidewalks, etc.

As would be generally expected the greatest calculated incremental storm runoff volume (288.7 acre-ft/event) resulted from the 100-year storm with a 24-hour duration under full development conditions, as shown in Table 2. These values (acre-ft/event) represent a volume of water and should not be confused with peak discharge rates which represent the maximum volume of storm water runoff discharged per unit of time (e.g., cfs). Peak discharge rates are required for engineering design or proposed drainage facilities and ascertaining the capacity of existing facilities, while total runoff volume provides a more realistic estimate of impact on water quality.

Quality

Although the changes in the volume of storm water runoff are significant, the quality of the various constituents being transported can be of equal, if not more important. However, as previously mentioned estimates of water quality concentrations resulting from significant storm water runoff that occurs at the most only a few times a year is very perplexing, especially since information on this subject essentially only became available at both the local and national level in the 1970's.

The summation of nitrogen, phosphorus, and suspended solids loads from both present (1986) and projected (full) residential development for storms of 1- and 24-hour duration at recurrence intervals of 1-, 5-, 10-, 25-, 50-, and 100-years are shown in Table 2. The incremental changes per storm event for the present and projected development conditions for the various duration and recurrence interval storms indicate that from the least to the greatest amount of rainfall: nitrogen increases for the lower intensity/duration storms and decreases for the higher level storms; phosphorus increases for

all storm events, but the actual values are not particularly high; and the suspended solids values shows approximately the same pattern as nitrogen, increase at the lower values, decrease at the upper values.

As previously stated it must be emphasized that the constituent values are only for comparative purposes, and should not be taken as absolute values. Overall then (between pre-and-post developed conditions), the output of nitrogen is about the same and phosphorus is expected to increase in the runoff, while suspended solids increase slightly for the lower intensity/duration storms, and then generally decrease for the higher intensity/duration storms. The decreased amount of exposed soil in residential areas tend to reduce the quantity of the suspended solids load at the higher intensity/duration storm events even though the total quantity of storm water increases.

Other water quality constituents of general concern include biocides and heavy metals. Typically the biocides presently being used tend to break down more readily in comparison to the more long lasting types of a few years ago; however, their relatively recent determination in the deep groundwaters of central Oahu has caused considerably concern. This aspect will be addressed in a subsequent section of the report. On the other hand heavy metals do apparently increase somewhat as a result of urbanization; however, the possible long-term effect, if any, that increased heavy metals may have upon the biological life of the receiving waters (primarily the West Loch of Pearl Harbor) at the concentrations expected in residential runoff (Table 1) is presently undefined. No particular heavy metal concentration pattern, when compared to drinking water standards (Public Health Regulations, 1981) was noted for the heavy metal analyses for the 1967 to 1984 water year period (Maikale Stream) except that in a few cases total iron was notably higher up to several mg/L, however, dissolve iron was generally quite low, typically <0.1 mg/L. The

higher total iron content (mainly in the suspended form) is in all probability a reflection of the relatively high iron content of some soils within the drainage area.

The hydrologic and water quality aspects of the surface water runoff were only considered for the present and projected conditions. However, increases in constituent loads will undoubtedly result from construction activities, especially if a significant storm occurs during the interim period between earth moving operations and soil stabilization completion. The impact of construction activities can be minimized by adhering to strict erosion control measures.

VOLATILE ORGANIC COMPOUNDS

The determination and consequent extensive media coverage of various pesticides at detectable levels in the drinking water supply from numerous wells in central Oahu, Hawaii, caused considerable concern, particularly since 1982, among water consumers in the service area. The pesticides of concern have been primarily EDB (ethylene dibromide) and DBCP (dibromochloropropane), generally found at < 100 ppt. Also of concern is TCP (trichloropropane) at concentrations up to approximately 3 ppt. Although these pesticides were only found in well waters of central Oahu at very low concentrations and the U.S. Environmental Protection Agency has not as yet established maximum concentration limits, the Hawaii State Department of Health has proposed that EDB and DBCP be limited to 20 ppt, the lowest maximum concentration limit in the United States. Despite the concern over TCP, the Hawaii State Department of Health has not proposed an upper limit.

Prior to 1980 it was assumed that the volatile organic compounds (VOC) (pesticides) that were applied to agricultural land, most notably the soil fumigants EDB and DBCP, which were used to control nematodes that infest the

roots of pineapples, would volatilize in the top layers of the soil or at least prior to traversing the relatively deep distance (several hundred feet) to the basal groundwater. Credence was given to this theory by previous studies conducted by the University of Hawaii's Water Resources Research Center (WRRC) which showed that chemicals were generally retained in the soil column and only trace amounts of the more refractory materials might break through and be transported to the basal water (Ito et al., 1967, and Fischer, Green, and Burbank, 1977). However, neither EDB nor DBCP were included in these tests and what was then considered as trace materials could now be easily picked up with the present more sensitive detection equipment. In 1977, the pineapple industry voluntarily stopped utilizing DBCP in Hawaii. EDB is also an additive in leaded gasoline and aviation fuels. There is a record of petroleum fuel spills in central Oahu by the military, particularly along their petroleum pipeline that extends from the Hickam AFB to near Wheeler AFB. However, at this time there is apparently no conclusive evidence that this source actually affected the contaminated wells (Wilson, 1984; Engineering-Science, Inc., 1984).

The initiation of the sequence leading to the monitoring of groundwater on Oahu for VOC's at low concentration levels commenced in April 1977 when it was reported that an estimated 495 gal of EDB (with 0.25% DBCP) was spilled within 60 ft of a Del Monte well at Kunia in central Oahu. Testing for EDB from the well's pumped water a short time later proved negative. The ground elevation at this well site is about 850 ft while the basal groundwater head at that time was approximately 17 ft above msl (Mink, 1981).

The discovery of DBCP in a California well in 1979 prompted the retesting of the Del Monte Kunia well, but the results proved ambiguous, inasmuch as both high and negative values were reported. As a consequence of the

ambiguous results, a joint sampling program was organized by the Pineapple Growers' Association of Hawaii and the Hawaii State Department of Agriculture and the Department of Health. The initial results indicated significant concentrations of EDB (92,000 ppt) and DBCP (11,000 ppt), but the concentrations decreased with increased pumping (Hink, 1981).

Subsequent testing of all the municipal water wells on Oahu, starting in 1982, at a high sensitivity level (ppt) indicated that several central Oahu wells had detectable concentrations of EDB, DBCP, and/or TCP, but with the exception of the aforementioned Del Monte Kunia well the other wells typically have average EDB and DBCP concentrations of < 100 ppt. The minimum detectable level of both EDB and DBCP is considered to be 10 ppt. In prior years the less sensitive detection equipment was only able to measure at the ppb range, which is 1000 times greater than the ppt. Consequently results that were previously reported as < 1.0 ppb may actually have been several hundred ppt, a figure that appears very significant to water consumers.

The locations of the areas in central Oahu where well waters have been found to contain either EDB or DBCP at > 20 ppt concentrations are shown in Figure 4. Most of these wells, in addition to the Navy's Maifawa Shaft, have been selected to be part of the Federal Government's funded "Super Fund Wells" program.

The municipal water wells that had either EDB or DBCP concentrations of > 20 ppt were removed from service. Studies sponsored by the City and County of Honolulu Board of Water Supply proved that EDB and DBCP were readily removed down to the detectable limit (10 ppt) by either activated carbon treatment or air stripping volatilization (GHP Associates, 1984; Dugan et al., 1984). From these studies activated carbon was selected. Activated carbon treatment units have been installed or are being installed to treat all well

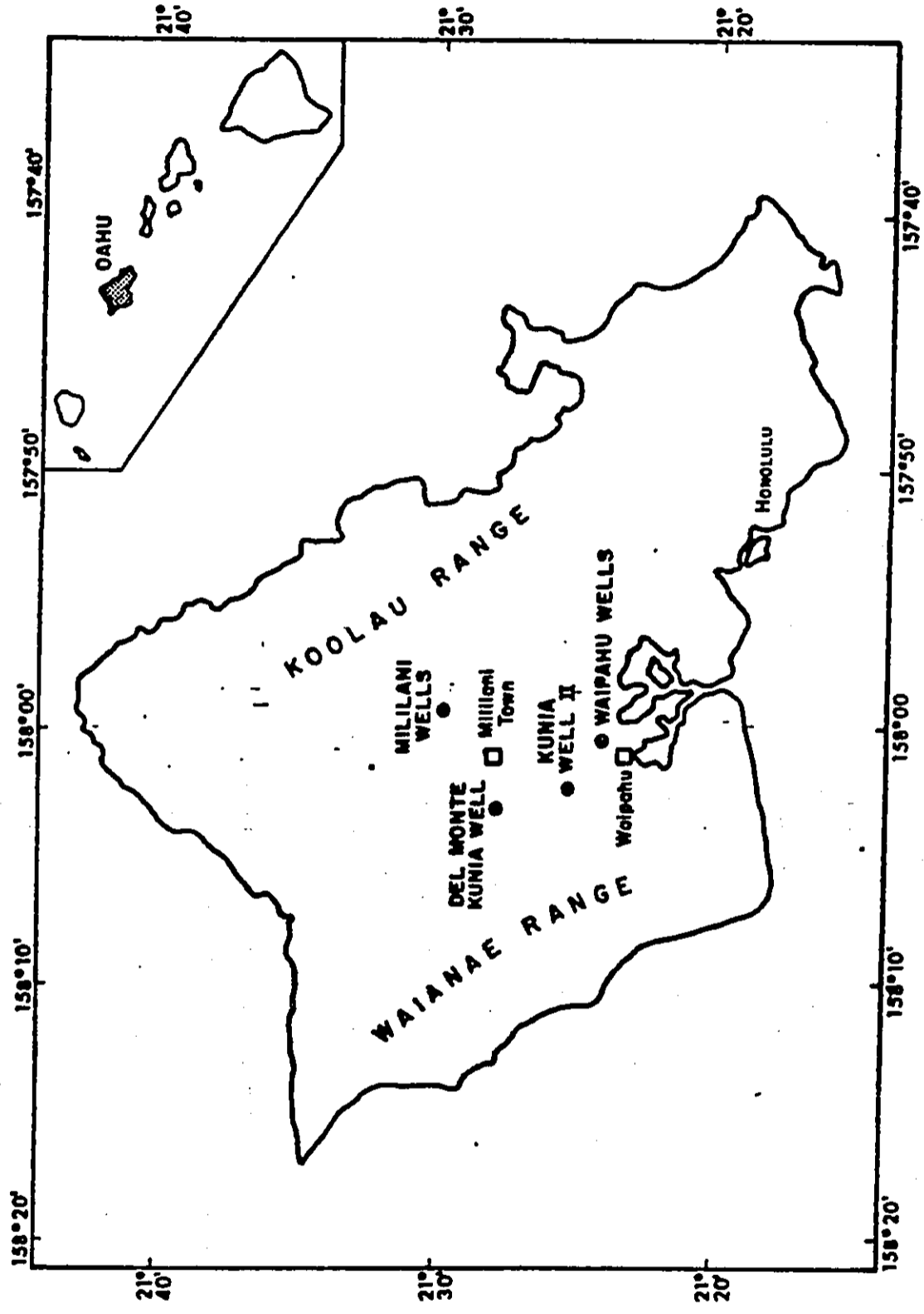


Figure 4. Location of Water Well Sites on Oahu that had EDB and/or DBCP Concentrations > 20 ppt.

waters above the 20 ppt limit for EDB and DBCP that are to be used as municipal water source.

In addition to the water well sampling program, extensive studies of soil core sampling for EDB, DBCP, and TCP have (and are still continuing) taken place at various sampling sites in central Oahu since 1983, with particular emphasis given to EDB, inasmuch as DBCP application was curtailed by Dole Pineapple in 1977. The Del Monte Corporation on Oahu has used EDB as the primary soil fumigant for approximately 30 years and in 1978 Dole Pineapple commenced using EDB after phasing out the use of DBCP (Dept. of Agriculture, 1983). Dr. John Hylin's Laboratory at the University of Hawaii's Department of Agricultural Biochemistry performed the soil analyses for EDB, DBCP and TCP.

A report outlining the results of the soil sampling program was issued in September, 1983 (Dept. of Agriculture, 1983) and since that time Dr. Richard Green and Dr. Frank Petersen with the University of Hawaii's Department of Agronomy and Soils and Department of Geology and Geophysics, respectively have continued to conduct soil sampling for EDB, DBCP and TCP at three separate areas in central Oahu under a MPRC sponsored grant. Dr. John Hylin's Laboratory is still conducting the chemical analysis for the studies. An array of soil coring samples have been taken at the various study sites in central Oahu and surprisingly DBCP is still being recovered even though its use was reported to have been terminated on Oahu after the 1977 pineapple planting season. The emphasis of the study was, however, on the persistence and movement of EDB, since this is the fumigant in current use for pineapple cultivation.

Analysis of soil samples collected at various depths from the different study sites, which had received EDB treatment, within as recently as two

weeks to greater than five years indicated that EDB concentration decreases rapidly with time and depth. For example, after two weeks less than 10% EDB was detected and after three months only 1% was recovered. The decrease at any given depth also appeared to correspondingly decrease with time. EDB did prove to be slightly more volatile than DBCP (Dugan et al., 1984), but health concerns over volatilization of EDB applications to the soil, particularly after a reasonable time period should be considered essentially non-existent or conservatively speaking extremely remote.

REFERENCES

- Cooley, K. R., and Lane, L. J., 1980. "Optimized Runoff Curve for Sugarcane and Pineapple Fields in Hawaii." Journal of Soil and Conservation, May-June, pp. 137-141.
- Department of Agriculture, 1983. "Preliminary Report on Soil Sampling for EDB on Oahu." Division of Plant Industry, Pesticide Branch, State of Hawaii.
- Department of Land and Natural Resources, 1970. "Flood Frequencies for Selected Streams in Hawaii." Reprint R36, Division of Water and Land Development, State of Hawaii.
- Department of Public Works, 1971. "Water Quality Program for Oahu with Special Emphasis on Waste Disposal." Final Report Work Area 3, Projections of Other Pollution Loads, City and County of Honolulu.
- Division of Water and Land Development, 1982. "Medium Rainfalls: State of Hawaii, 1982." Circular C88, Dept. of Land and Natural Resources, State of Hawaii.
- Dugan, G. L., Gee, H. K., Oshiro, K. M., and Lau, L. S., 1984. "Activated Carbon Adsorption of Low Concentration Organic Pesticides in Water." Technical Report No. 166, Water Resources Research Center, University of Hawaii at Manoa, Honolulu.
- Engineering-Science, 1984. "Installation Restoration Program Phase I: Records Search 15th ABW Satellite Installations, Hawaii." Prepared for the U.S. Air Force AFBS/DEV, Tyndall AFB, Florida and HQ PACAF/DEEV, Hickam AFB, Hawaii.
- Eto, M. A., Burbank, M. C., Jr., Klemmer, H. W., and Lau, L. S., 1967. "Behavior of Selected Pesticides with Percolating Water in Oahu Soils." Technical Report No. 9, Water Resources Research Center, University of Hawaii at Manoa, Honolulu.
- Fischer, C., Green, R. E., Burbank, M. C., Jr., 1977. "Refractory Organic Compounds in Treated Effluent and their Removal in Soil, Milliani, Oahu, Hawaii." Technical Report No. 115, Water Resources Research Center, University of Hawaii at Manoa, Honolulu.
- Foote, D. E., et al., 1972. "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii." U.S. Dept. of Agriculture, Soil Conservation Service.
- Fujiwara, T. D., May 1973. "Characterization of Urban Stormwater Discharge from Separate Sewers." M.S. Thesis, Department of Civil Engineering, University of Hawaii, Honolulu, Hawaii.
- GHP Associates, Inc., 1984. "Treatment Study for Ground Water Supply." Progress Report submitted to Board of Water Supply, City and County of Honolulu.
- Lau, L. S., et al., 1974. "Recycling of Sewage Effluent by Irrigation: A Field Study on Oahu, Second Progress Report for July 1972 to July 1973." Technical Report No. 79, Water Resources Research Center, University of Hawaii at Manoa, Honolulu.
- Loehr, R. C., December 1972. "Agricultural Runoff." ASCE Journal Sanitary Engineering Division, Vol. 98, SAG, pp. 909-925.
- Loehr, R. C., August 1974. "Characteristics and Comparative Magnitude of Non-Point Sources." Journal Water Pollution Control Federation, Vol. 46, No. 8, pp. 1849-1872.
- Lopez, N. C., January 1974. "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, August 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.
- Miller, C. R. and W. Viessman, Jr., April 1973. "Runoff Volumes from Small Watersheds." Water Resources Research, Vol. 9, No. 2, Figure 5, p. 432.
- Mink, J. F., 1981. "DBCP and EDB in Soil and Water at Kunia, Oahu, Hawaii." Report prepared for Del Monte Corporation, Honolulu, Hawaii.
- Public Health Regulations, 1981. "Potable Water Systems." Chapter 20 of Title 11, Administrative Rules, Dept. of Health, State of Hawaii.
- Soil Conservation Service, January 1975. "Urban Hydrology for Small Watersheds." Technical Release No. 55, U.S. Department of Agriculture.
- U.S. Geological Survey, 1967-1984. "Water Resources Data for Hawaii and Other Pacific Areas." Water Resources Division.
- U.S. Weather Bureau, 1962. "Rainfall-Frequency Atlas of the Hawaiian Islands." Technical Paper No. 43, Washington, D.C.
- Wilson, J. R., Jr., Commander in Chief Pacific, 1984. Letter to Charles Clark, Director, Department of Health, State of Hawaii, Re: 4222 11335 Ser, dated January 13th, from Camp H. H. Smith, Hawaii 96861.

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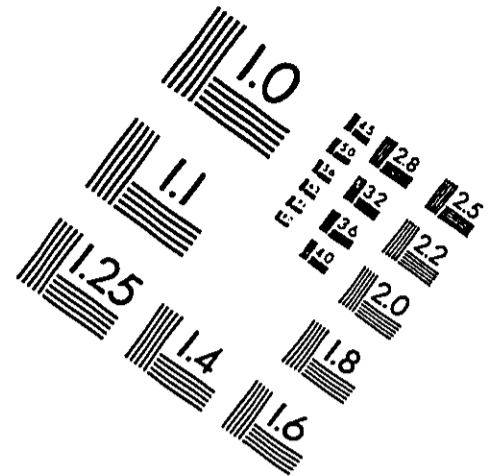
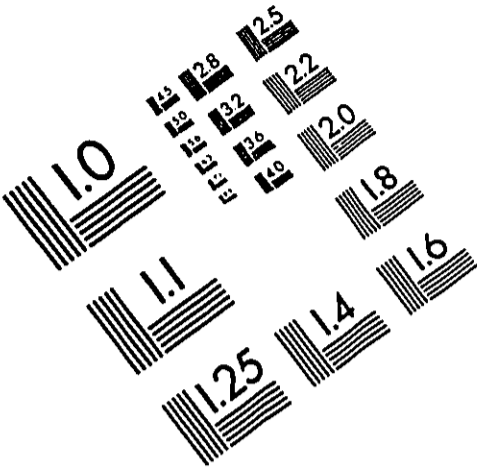
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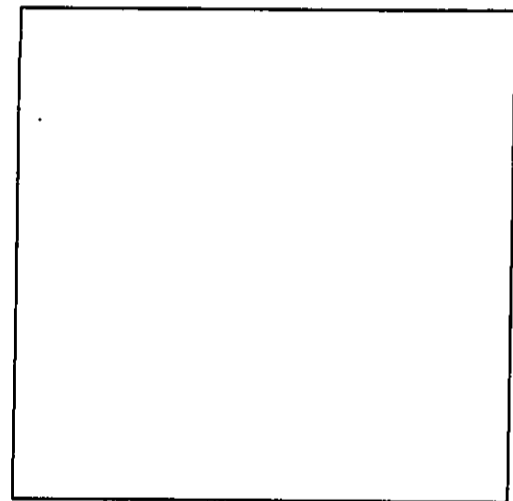
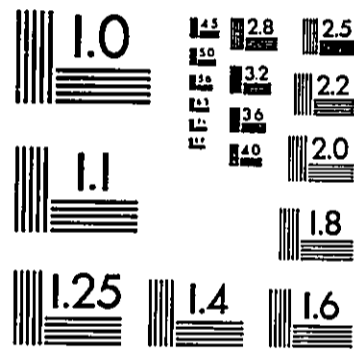
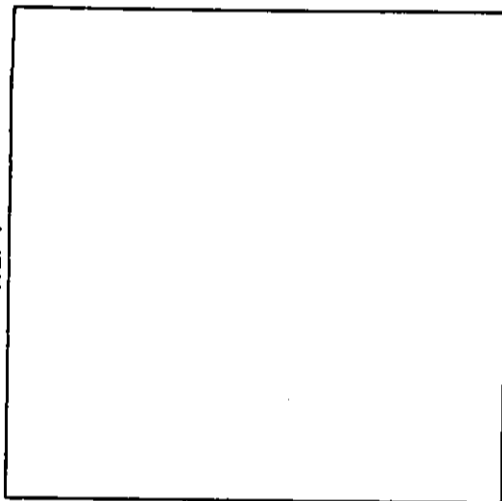
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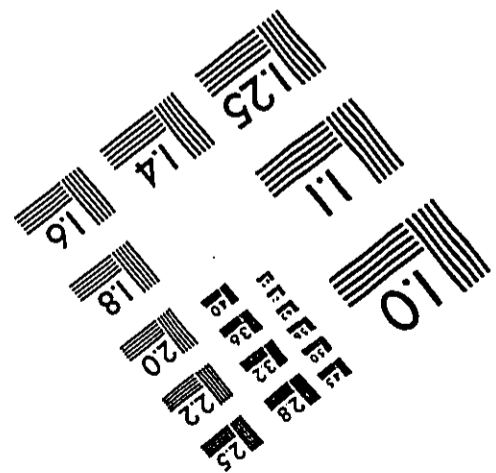
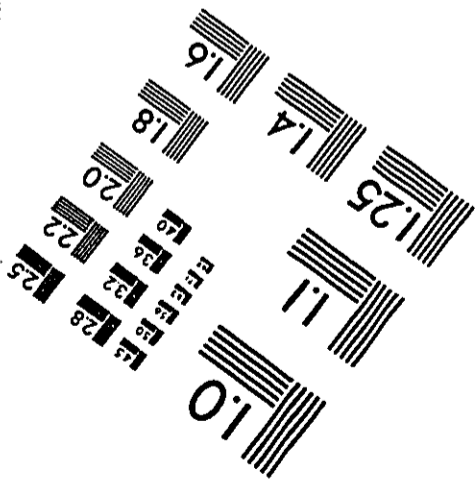


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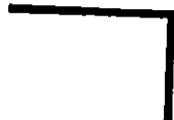
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