

PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

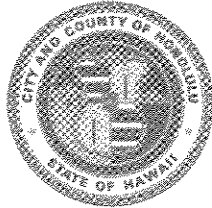
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FRANK F. FASI
MAYOR

(I.F.C. OF ENVIRONMENTAL
QUALITY CONTROL)



ROBIN FOSTER
CHIEF PLANNING OFFICER

ROLAND D. LIBBY, JR.
DEPUTY CHIEF PLANNING OFFICER

MH 5/93-1264

June 17, 1993

Honorable Brian J. J. Choy, Director
Office of Environmental Quality Control
State of Hawaii
Central Pacific Plaza
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Choy:

Acceptance Notice for the
Final Supplemental Environmental Impact Statement (EIS)
for the Proposed Ewa By Gentry Expansion Project
Tax Map Key: 9-1-69: Por. 6

We are notifying you of our acceptance of the Final Supplemental EIS for the proposed Ewa By Gentry Expansion project. Pursuant to Section 11-200-23(e), Chapter 200, Title 11 ("Environmental Impact Statement Rules") of the Hawaii Administrative Rules, this acceptance notice should be published in the OEQC Bulletin.

We have attached our Acceptance Report and a copy of the Final Supplemental EIS for the subject project. Should you have any questions, please contact Matthew Higashida of our staff at 527-6056.

Sincerely,

A handwritten signature in black ink, appearing to read "Robin Foster".

ROBIN FOSTER
Chief Planning Officer

RF:lh

Attachments

cc: Gentry Pacific
Gray, Hong, Bills & Associates, Inc.

1993 - Oahu - FEIS -

Ewa Gentry

FILE COPY

FINAL SUPPLEMENTAL
ENVIRONMENTAL
IMPACT STATEMENT

FOR

EWA BY GENTAY

EWA, OAHU



GRAY • HONG • BILLS
& ASSOCIATES, INC.

119 Merchant Street #607 • Honolulu, Hawaii 96813
(808) 521.0306 • FAX (808) 531.8018

**EWA BY GENTRY
FINAL SUPPLEMENTAL
ENVIRONMENTAL IMPACT STATEMENT**

EWA, OAHU, HAWAII

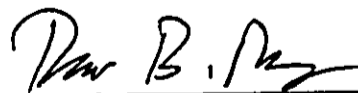
TMK: 9-1-69: Por. 6

Prepared For

**Gentry Hawaii, Limited
560 North Nimitz Highway, Suite 301
Honolulu HI 96813**

Prepared By

**GRAY, HONG, BILLS & ASSOCIATES, INC.
119 Merchant Street, Suite 607
Honolulu HI 96813
Phone 521-0306 / Fax 531-8018**



David B. Bills, Vice President

May 17, 1993

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EWA BY GENTRY

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

I. INTRODUCTION AND SUMMARY

A. APPLICANT

Gentry Hawaii, Limited is a Hawaii company. Its place of business and mailing address are:

Gentry Hawaii, Limited
560 North Nimitz Highway, Suite 301
Honolulu HI 96813

B. BRIEF PROJECT SUMMARY

The proposed project is a 71-acre site which will consist of a 10-acre industrial area and 61-acre residential area. The residential area will support 500 single-family units. The Ewa By Gentry Project prepared and processed an Environmental Impact Statement in 1988, which identified 7,120 residential units, park area and commercial area on 932 acres. The currently proposed project area would be added to the 1988 project boundaries to produce a total development consisting of 8,300 dwelling units on 1,003 acres.

C. SIGNIFICANT BENEFICIAL AND ADVERSE IMPACTS

1. Beneficial Impacts

The proposed project will create residential housing, as well as create employment opportunities on the Ewa Plains, in conjunction with the Kapolei Area Long-Range Master Plan.

2. Adverse Impacts and Proposed Mitigation Measures

- a. The proposed development will increase demands on potable water sources. This increased demand will be mitigated by ensuring that it falls within sustainable yields as allocated and approved by the State Commission on Water Resource Management.

- b. Urbanization will increase stormwater runoff to drainage tributaries within the project boundaries. The increase in runoff will be mitigated by providing drainage improvements in the form of natural channel systems which provide capacity to carry increased stormwater requirements.
- c. The project development will result in increased air quality impacts in the form of emissions from motor vehicles, emissions from power generating facilities and fugitive dust during construction. The impacts of motor vehicles will be mitigated by providing a roadway system with increased capacity to accommodate anticipated traffic flows and by generating employment centers to reduce the total amount of vehicle miles required to reach employment centers. With respect to increased emission from power generating facilities, there are numerous energy-efficient features, which the project can promote to minimize energy consumption. Finally, with respect to construction activities, there are numerous construction techniques available to minimize fugitive dust and ensure that construction vehicles are in proper operating condition.
- d. The project will result in increased demands on roadway systems in the Ewa area. The impact of these increased demands will be minimized by expanding the roadway system to accommodate additional traffic flows.
- e. The project will increase demands on public facilities and services, including educational facilities, medical and social services, recreation and community facilities, solid waste collection and disposal, wastewater collection and disposal, and police and fire protection. The increased demand with respect to these public facilities and services will be mitigated by coordinating with these agencies to ensure that adequate capacity is available, and contributing to providing adequate capacity and services where applicable.

3. Alternatives Considered

Two alternatives are being considered for the subject project, and these include no-development, as well as a reduced level of development. The reduced level of development has been identified as ranging anywhere between no-development and to that level which is currently proposed.

4. Summary of Unresolved Issues

- a. The subject Development Plan approval is unresolved, and through the preparation and processing of this application, a determination will be reached.
- b. The roadway system is unresolved, due to the fact that actual plans have to move from the planning stage to the construction stage. As this effort continues, the issue will be resolved. However, the developer will be responsible to pay a fair share of highway improvements.
- c. The availability of wastewater treatment plant capacity is unresolved, and through processes such as the currently commissioned Facilities Plan preparation by the City & County of Honolulu Division of Wastewater Management, the capacity issue will be resolved. In addition, administrative hearings will also resolve the issue.
- d. The City & County Department of Parks and Recreation has expressed concerns regarding the location of park facilities related to the current amendment request. Through consultation procedures with this department, the issue will be resolved. Initial consultation has confirmed park area requests, but exact locations must be set.
- e. The Department of Education has expressed serious reservations about the planned elementary school facilities to serve the Leeward area versus the projected enrollment. Currently, there is not enough elementary school space to meet projections. The Department also indicates that intermediate school capacity and high school capacity will be exceeded until the Kapolei schools are built. The earliest the Kapolei schools can be built is 1998.
- f. The State of Hawaii Commission on Water Resource management indicates there are insufficient "non-potable cap rock" water supplies to meet the Ewa Plains requirements. Wastewater reuse is proposed as the appropriate alternative.
- g. The Department of General Planning has requested a Fiscal Impact Analysis which is unavailable at this date. However, informal analysis indicates that the proposed project will generate more revenues than costs for both the City and State.

5. Compatibility with Land Use Plans and Policies

From both a State primary and County perspective, there is an objective to create housing and employment on the Ewa Plains to support a Second City. The proposed project is consistent with these objectives.

The only objective of both State and City planning policies which would be considered incompatible are those with respect to agriculture. However, landowner, the Estate of James Campbell and Oahu Sugar Company have already entered into a working agreement phasing out sugarcane operations on lands within the project area.

6. Necessary Approval and Permits Required

a. Planning

Development Plan Approval
Change of Zoning

b. Use

Water allocation from the State Commission on Water Resource Management

c. Construction

Department of the Army permit for fills within Kaloi Gulch (if fill is required)
National Pollutant Discharge Elimination System (NPDES) permits for stormwater pipe discharges and grading operations

Construction plan approval

II. STATEMENT OF PURPOSE AND NEED FOR ACTION

Gentry Properties prepared and processed an Environmental Impact Statement covering 7,120 residential units on 932 ± in 1988 in conjunction with a City & County of Honolulu Department of General Planning Development Plan Amendment request. The project included schools, parks and a golf course. The Land Use Plan previously authorized by Development Plan approvals is shown on Figure 1 (Master Plan)¹

The purpose of the current action is to expand the existing Master Plan boundaries as follows:

1. Add 61 ± acres of residential use supporting 500 units.
2. Add 10 ± acres of industrial use.
3. Increase the Development Plan density on the 932 ± acre Master Plan from 7,120 units to 7,800 units.

The revised Master Plan is also shown on Figure 1 (Master Plan) with the 61 ± acre residential addition and 10 ± acre industrial addition highlighted.

The need for the action is two-fold, as stated below:

1. The addition of 500 residential units on 61 ± acres of land, plus the assimilation of 670 units within the existing Development Plan boundaries, will ultimately add 1,170 residential units to the housing marketplace.

The need for additional housing island-wide, and particularly in the Second City area, has been cited by virtually every public and private market study, as well as nearly every public and private housing agency.

2. One of the premises for the Second City concept is that employment opportunities are a prerequisite. The addition of 10 acres of industrial use will contribute its small part to this prerequisite.

Hawaii Administrative Rules (HAR) Chapter 200 of Title 11, subchapter 6(b)(2)(a) specifically states that Chapter 343 review is required for any Development Plan Amendment requiring the requested residential and industrial redesignation.

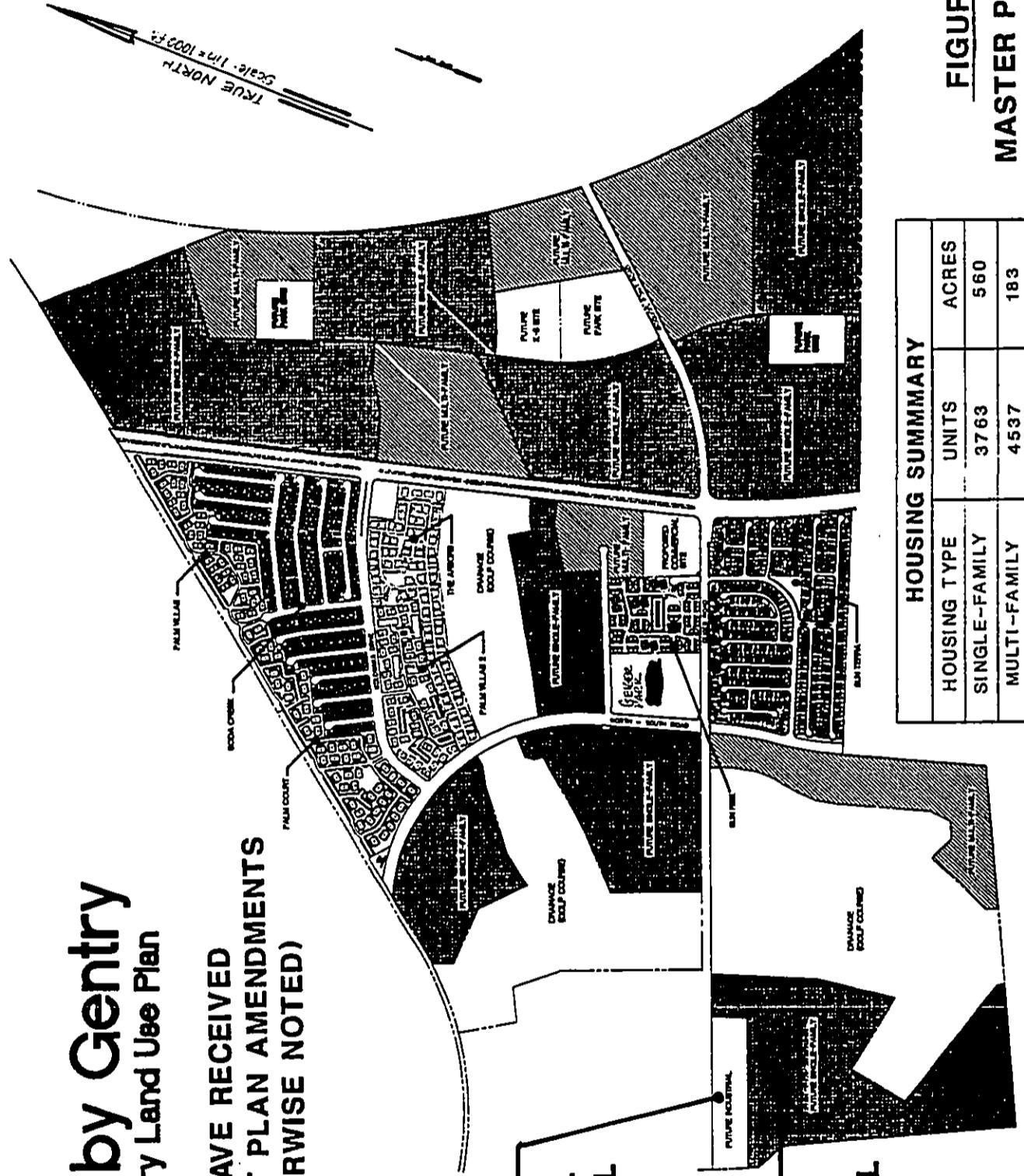
Ewa by Gentry

Preliminary Land Use Plan

(ALL AREAS HAVE RECEIVED
DEVELOPMENT PLAN AMENDMENTS
UNLESS OTHERWISE NOTED)

10 ACRES
AGRICULTURAL
TO INDUSTRIAL

61 ACRES
AGRICULTURAL
TO RESIDENTIAL



HOUSING SUMMARY		
HOUSING TYPE	UNITS	ACRES
SINGLE-FAMILY	3763	560
MULTI-FAMILY	4537	183

FIGURE 1
MASTER PLAN

III. PROJECT DESCRIPTION

A. LOCATION

The site of the proposed action is shown on Figure 2 (Kapolei Area Long Range Master Plan). This figure represents the master planned development on 32,000 acres of the Estate of James Campbell. "The planning and development process has been, and continues to be, a joint effort of the community, the State of Hawaii, the City & County of Honolulu, area developers and the Estate of James Campbell."²

The specific project site as identified by the tax map system is shown on Figure 3. Applicable tax map keys are 9-1-69: Por. 6.

B. STATEMENT OF OBJECTIVES

The objectives of The Gentry companies is to develop and market a widely marketable residential community on an economically profitable basis. The intended market for Ewa By Gentry Project ranges from the low-moderate income category through the entire affordable housing market, as well as a small portion of the upper-middle income market.³ This objective was identified in the 1988 EIS and remains unchanged.

In addition, The Gentry Companies has a commitment to acquire lands totaling approximately 1,000 acres. On portions of land not particularly suited for residential use, other uses are appropriate. Therefore, 10± acres are proposed for industrial designation with the objective of providing stimulus for employment opportunities on the Ewa Plain.

C. GENERAL DESCRIPTION OF THE ACTION'S TECHNICAL, ECONOMIC, SOCIAL AND ENVIRONMENTAL CHARACTERISTICS

1. Technical Characteristics

The proposed action project site in larger scale is shown on Figure 4 (Project Site Map). As shown, the 61± acre residential area would be developed with an access roadway system connecting to Geiger Road. Within the roadway would be water, sewer, drainage, underground electric and telephone and cable systems conforming to City & County standards. The roadway system would utilize 60-foot, 44-foot and 32-foot rights-of-way having curb, gutter and sidewalk. All lots are proposed to be single-family lots.

It is anticipated that the industrial portion of the proposed action will be developed with leasable lots for Limited Industrial District Uses, as described by the City & County of Honolulu Land Use Ordinance. Such

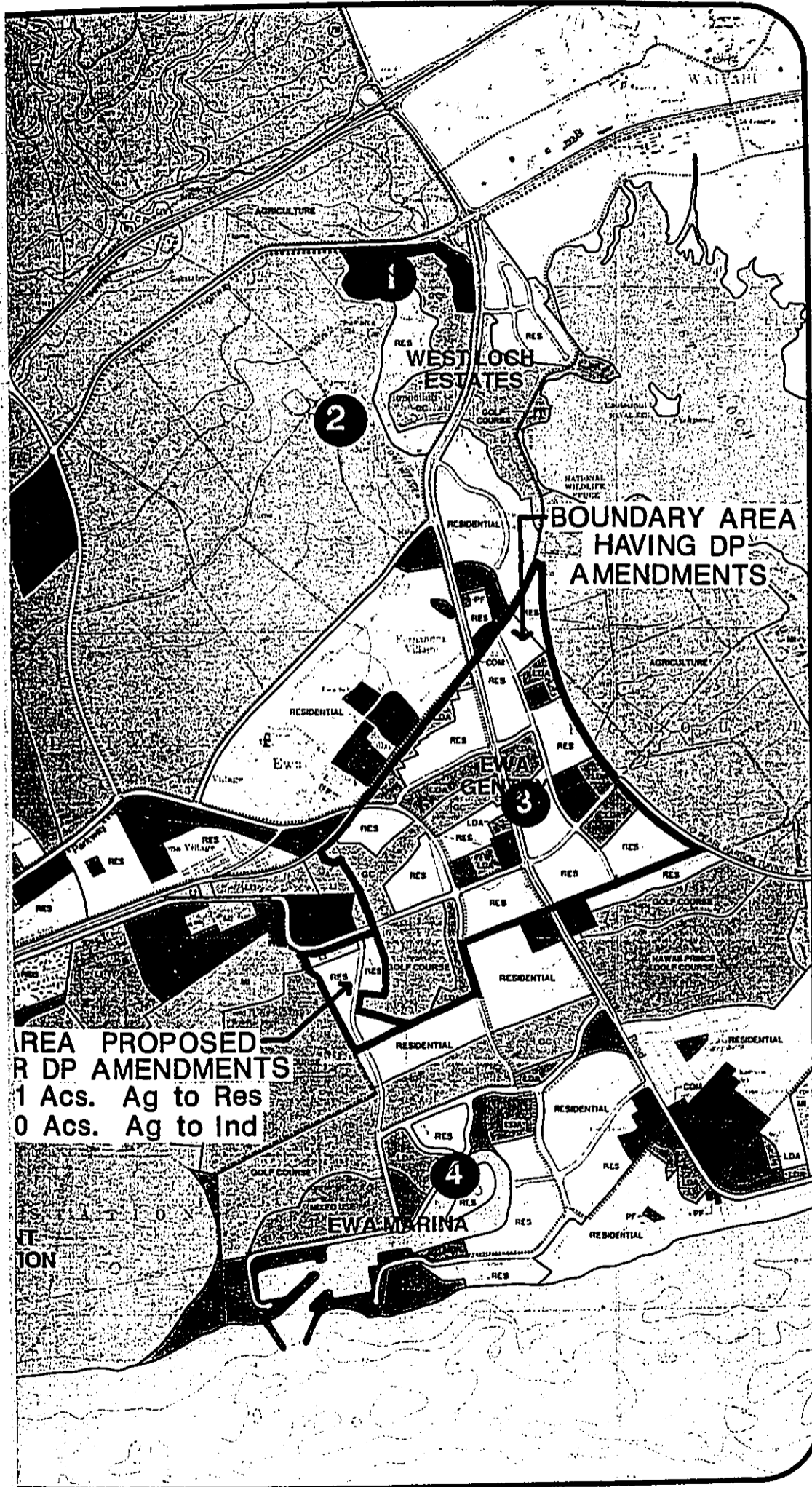
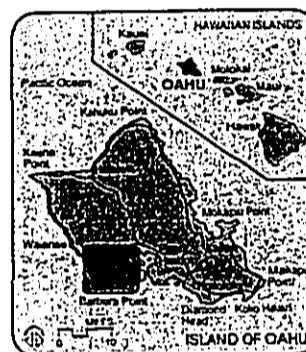


FIGURE 2

Kapolei Area
Long Range
Master Plan
Ewa, Oahu, Hawaii

THE ESTATE OF JAMES CAMPBELL

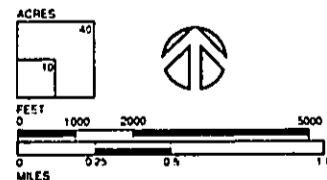


LAND USE CLASSIFICATION

- RESIDENTIAL
- LOW DENSITY APARTMENT
- MEDIUM DENSITY APARTMENT
- COMMERCIAL/OFFICE
- LIGHT INDUSTRIAL
- HEAVY INDUSTRIAL
- RESORT
- PARK (PUBLIC AND PRIVATE)
- MIXED USE
- PUBLIC FACILITY (EXISTING AND POTENTIAL)
- GOLF COURSE
- PRESERVATION
- AGRICULTURE
- MILITARY

ROADWAY CLASSIFICATION

- PRIMARY HIGHWAYS
- EXISTING AND PROPOSED ROADWAYS
- PROPOSED TRANSIT ALIGNMENT
- PROPOSED BIKEWAYS

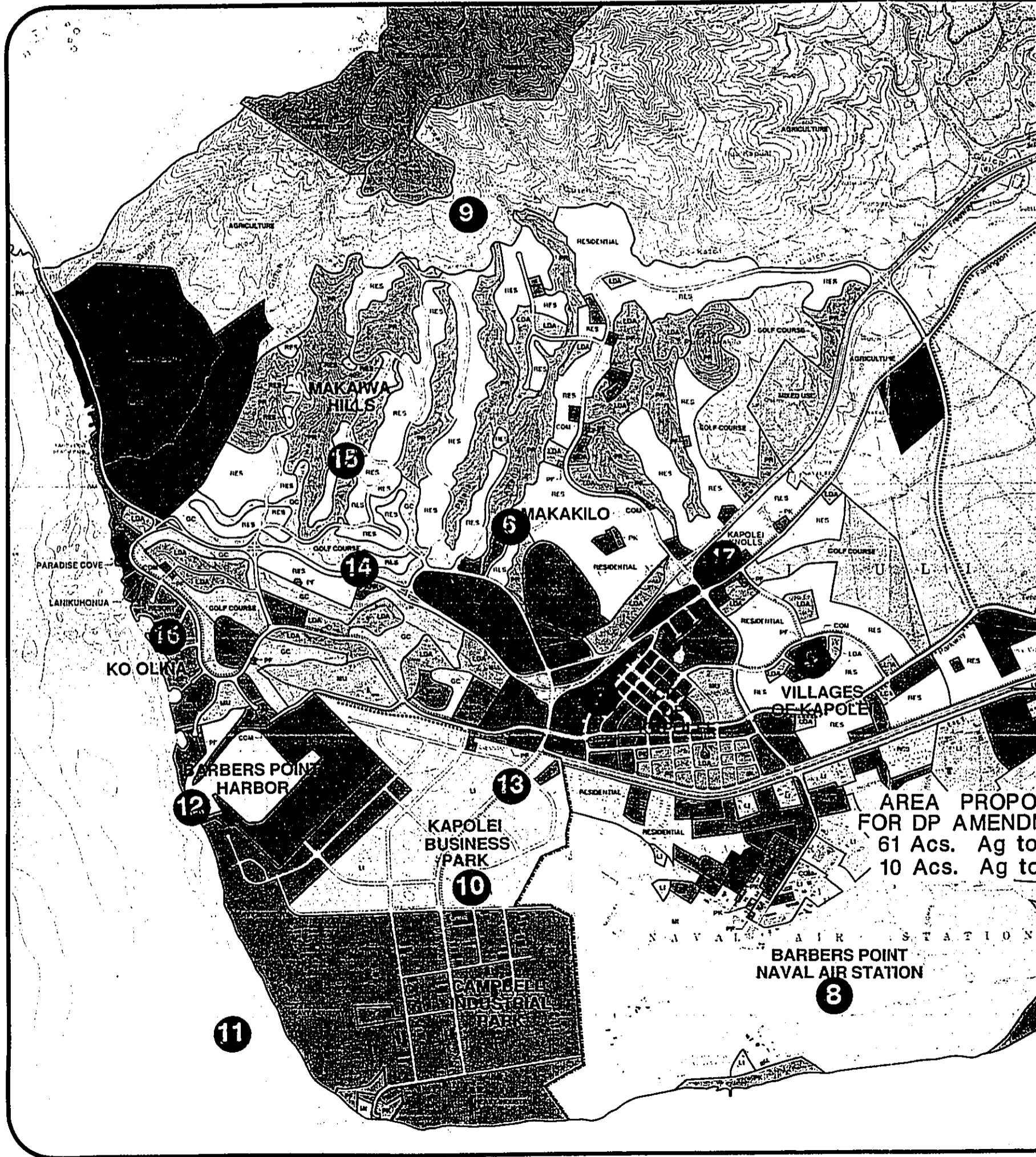


This map is for planning purposes and is subject to change at any time without notice.
© 1991 The Estate of James Campbell

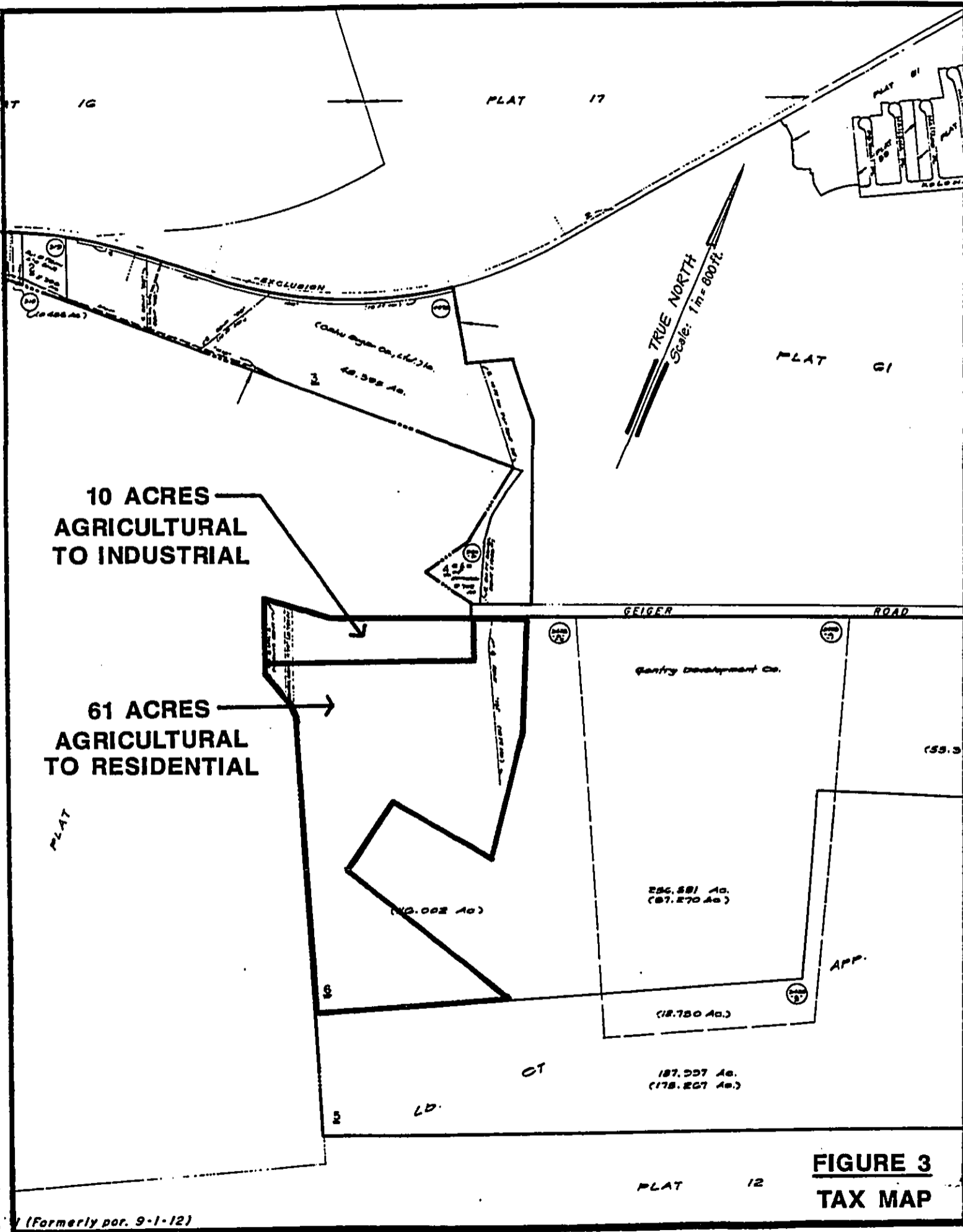
MARCH 1991

Helber Hastert & Kimura Planners

DOCUMENT CAPTURED AS RECEIVED



AREA PROPO
FOR DP AMENDI
61 Acs. Ag to
10 Acs. Ag to



**FIGURE 3
TAX MAP**

(Formerly par. 9-1-12)

TRUE NORTH
Scale: 1 in. = 400 ft.

HONOULIULI S.T.P.

GEIGER ROAD

INDUSTRIAL 10 AC.
 $A_{12} = 10.0$ $Q = 30.8$ DI-B

DI-C D48"

$A_{1A} = 13.9$
 $Q = 37.4$ DI-A

$A_{12} = 8.9$
 $Q = 24.0$ DI-B

S.F. 61 AC.

$A = 8.0$
 $Q = 21.6$ DI

CLUBH AREA

PRACT AREA

BARBERS POINT N.A.S.

MASTER PLAN GOLF COURSE

GOLF 102 AC

Pond 7

Pond 8

$A_{12} = 9.1$
 $Q = 24.5$ DI

$A_{13} = 12.2$
 $Q = 32.9$ DI

FIGURE 4
PROJECT MAP

uses include drive-through facilities, light manufacturing and packaging, public structures and uses, self-storage facilities, repair establishments and warehousing. Based on a 7,500 square foot minimum lot size, approximately 45-50 limited use lots could be created. Utility connections for water, sewer, drainage, underground electric and telephone meeting City & County standards are proposed. Access roadways utilizing City & County rights-of-way requirements would also be provided.

In addition to the foregoing technical descriptions, the subject action will increase the Development Plan density within the previously-approved Development Plan boundaries from 7,120 residential units to 7,800 residential units. The density has increased through refinements to the land planning process and was not identified in the 1988 Ewa by Gentry EIS.³ The density increase is specifically being recognized as a part of the proposed action to ensure environmental review and assessment of its impacts.

Table 1 quantitatively summarizes the technical characteristics of all proposed actions.

2. Economic Characteristics

Development of 61 acres of residential land and 10 acres of industrial land is anticipated to cost over \$100,000,000. This will create saleable residential units and leasable industrial lots. Anticipated revenues should range between \$125,000,000 to \$150,000,000.

3. Social Characteristics

Ewa By Gentry residential development is providing housing for people with income levels beginning with affordable income level through upper middle income levels. Affordable requirements are anticipated to match that which currently exist. This requirement states that 60 percent of the units should be available to families up to 140 percent of median-family income. In addition, Ewa By Gentry is contributing to creation of jobs in the Ewa area by creating industrial properties.

It is further anticipated that residents, employers and employees utilizing the residential and industrial components of the proposed action will be part of a planned community where public services, schools, commercial activities and recreational activities are readily available.

The proposed action will have the following environmental characteristics:

a. Land Use

At present, the 71 acres proposed for residential and industrial use are vacant. The lands will be changed from fallow sugarcane lands below Geiger Road to an urbanized setting consisting of houselots and Limited Industrial Lease lots.

b. Surface Water Patterns

The current project area will not be within a major drainageway and the site only discharges stormwater when rainfall is sufficient to cause surface water runoff. After development, the same condition will generally occur, except a storm drainage system will be created to collect and discharge stormwater in a controlled fashion toward the Kaloι Gulch improvements. As reported in the 1988 EIS,³ all Kaloι Gulch stormwater will be routed through the project's golf course lands.

Urbanization will increase the amount of stormwater runoff by approximately $135 \pm$ CFS, as identified in the project's approved Drainage Report. Runoff is calculated using the rationale method as defined by the City & County Drainage Standards.

c. Groundwater Usage

The proposed project, including the 71 acres of residential and industrial development, as well as 650 additional dwelling units, will increase groundwater usage in the form of potable water source requirements by 0.62 MGD, as shown on Table 1. However, the net increase for the total Ewa By Gentry area will be 0.3 MGD (Nance, 1993)⁴ since the 1988 EIS³ reported water demands for approximately 7,800 units.

d. Sewage Treatment and Disposal

As with groundwater usage, the proposed project will create the need for sewage treatment and disposal which must be assimilated into the environment. Table 1 identifies a sewage flow for the project of 0.41 MGD.

e. Solid Waste

As shown on Table 1, the project population of 4,300 will generate 14.3 tons/day of solid waste. Collection and disposal will be

provided by public services through the City & County Department of Solid Waste Management.

f. **Noise**

The project is anticipated to fall within noise levels associated with the uses proposed. Specifically, residential development is anticipated to generate noise levels of 55 dBA⁵ or less during the day and 45 dBA⁵ or less in nighttime hours. Industrial development is anticipated to generate noise levels of less than 70 dBA⁵ during daytime hours.

TABLE 1
Summary of Technical Information

Item	61-Acre Residential Site	10-Acre Industrial Site	650 Unit Addition to Existing Development Plan Project	Total
Infrastructure				
Water demand ¹ ave, (MGD)	0.2500	0.040	0.33	0.62
Wastewater ² ave, (MGD)	0.160	0.04 ³	0.21	0.41
Solid Waste ⁴ (tons)	5.33	2.1 ⁵	6.9	14.3
Power ⁶ (megawatts)	1.3	1.1	1.6	4.0
Housing				
Units	500	--	650	1,150
Population ⁷	1,870	--	2,340	4,300

1-Based on City & County of Honolulu, Board of Water Supply Water System Standards, Table 15, page 35: Residential - 500 gals/unit, Light Industry - 4000 gals/acre.

2-Based on City & County of Honolulu, Department of Public Works Design Standards, Division of Wastewater Management, Volume I: Wastewater generation - 80 gals/person/day.

3-Based on 4000 gals/acre/day (same as water demand).

4-Based on 5.7 pounds/person/day (Gray, Hong Bills & Associates, 1988).

5-Based on 40 capita/acre and 10.6 lb/employee/day. (From Table 8.2 - Unit Waste Factors for Various Generators, Standard Handbook of Environmental Engineering, McGraw-Hill Publishing Company, 1989).

6-Based on 3 kilowatts/household/day and power demand factor of 0.85.

7-The Gentry Companies, 1987 and Gray, Hong, Bills & Associates, 1988.

D. DISCLOSURE OF THE USE OF PUBLIC FUNDS OR LANDS FOR THE ACTION

No direct use of public funds or lands are proposed for the action. Project development will be solely by The Gentry Companies' private expenditures. However, indirect public money will be used for project support in the form of school construction and community park construction. The use of these public funds was identified in the 1988 EIS³.

E. PHASING AND TIMING OF ACTION

Development Schedule: Gentry Development Company commenced the Ewa By Gentry project in 1988 and has completed approximately 2000 units and has under construction another 700 units. With lands currently designated for development on the Development Plan and the areas covered under the subject amendment petition, the petitioner proposed to build out within the next five years under the following schedule:

TABLE 2

Phasing and Timing

Year	Single-Family	Multi-Family	Total
Completed	600	1,400	2,000
1993	415	670	1,085
1994	680	710	1,390
1995	775	730	1,505
1996	760	580	1,340
1997	533	447	980
Total	<u>3,763</u>	<u>4,537</u>	<u>8,300</u>

F. HISTORICAL PERSPECTIVE

The project site from a historical perspective has been an area supporting agriculture. In addition, the proposed project site borders the Barbers Point Naval Air Station. As reported in the 1988 EIS,³ the Estate of James Campbell has already made a commitment with Oahu Sugar Company to gradually phase out sugarcane cultivation on the Ewa Plain to allow development of the Kapolei Area Long Range Master Plan shown on Figure 2. The Barbers Point Naval Air Station will remain a fixture on the Ewa Plain.

IV. DESCRIPTION OF ANY KNOWN ALTERNATIVES TO THE PROJECT

A. "NO ACTION" ALTERNATIVE

A "no action" alternative would simply produce no development on the subject project site. The land would remain in its vacant state, and there would be no increased demands on infrastructure support, should this alternative be realized. This alternative will not allow the completion of the Ewa By Gentry Master Plan created in the 1980s. Further, this alternative would not produce any housing or create any additional job markets on the Ewa Plains. For all the foregoing reasons, the applicant has rejected this alternative.

B. "REDUCED LEVEL OF DEVELOPMENT" ALTERNATIVE

The currently proposed action identifies 61 acres of residential land, 10 acres of industrial land, and increasing the housing density within the Ewa By Gentry project analyzed in a 1988 Environmental Impact Statement by 670 units. This alternative is intended to represent levels of development between that currently proposed and the "No Action" alternative. The closer this alternative comes to matching the currently proposed action, the greater will be the infrastructural support requirements. The level of service required is proportional to the amount of housing units created and Table 1 can be interpolated to quantitatively assess the infrastructure requirements.

In principle, a reduced level of development does not allow the applicant to fulfill its desire of completing its Master Plan, and does not allow additional house construction and/or the creation of employment opportunities. For this reason, the applicant has rejected the "Reduced Level of Development" alternative.

V. DESCRIPTION OF THE ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION

In 1988, an Environmental Impact Statement³ covering the Ewa By Gentry project including 7,120 housing units on 932 acres was accepted in conjunction with a Development Plan Amendment sought by The Gentry Companies. A detailed description of the environmental setting, including impacts and mitigation, was provided in conjunction with this 1988 document. Since this current document is a Supplemental Environmental Impact Statement, the information contained in the 1988 document is being used as a basis for description of the environmental setting. The environmental setting therefore is being summarized and specific emphasis is being provided to changes which are applicable since acceptance of the 1988 document.

A. PHYSICAL ENVIRONMENT

1. Geology and Soils

The Island of Oahu is volcanic in nature and is characterized by underlying basaltic flows. The Ewa Plain, however, also has an extensive coral shelf which has been covered by alluvium which has been transported from the Waianae Mountains by gradual erosion.

The U. S. Soils Conservation Service classification of soils in the area consist of Honouliuli silty clays, Mamala stony silty clays, Waipahu silty clays and Ewa silty clay loam.⁶ All of the foregoing clay soils are categorized as expansive and have the ability to hold water with diminished percolation rates.

Impacts - The proposed project will not create an impacts on geology and soils.

Mitigation - No mitigation measures are proposed.

2. Topography

The topographic contours on the project site are generally level. Elevations within the specific project area vary from 20 feet above mean sea level (msl) to approximately 35 feet msl. The ground slope in the area is approximately 1 percent.

Impacts - There are no impacts on topography.

Mitigation - No mitigation measures are proposed.

3. Climate

Weather on the Ewa Plan is generally constant and relatively dry. The average temperature range varies between 21 and 28 degrees Celsius. The average rainfall is approximately 20 inches per year, with most rain occurring between December and April. The prevailing northeasterly tradewinds blow at an average of approximately 9 knots and are generally constant through the year.

Impacts - There are no impacts to climate.

Mitigation - No mitigation measures are proposed.

4. Water Resources

a. Groundwater

Groundwater in the Ewa Plains is divided into two aquifers. The higher aquifer is referred to as a "cap rock" coral aquifer and receives its recharge from surface water drainage. This aquifer is not a potable drinking water source.

The higher quality aquifer is the basaltic Koolau volcanic series. The makai boundary of this aquifer is believed to be located north of the project site and above the H-1 Freeway. This aquifer is fed by rainfall occurring in the Koolau Range, which infiltrates surface soils and rock to supply the basal groundwater. The surface "cap rock" coral aquifer acts as a barrier between the ground surface and the basaltic aquifer.

Impacts - The proposed Development Plan Amendment will increase the source requirements from the basal aquifer by 0.3 MGD. The groundwater requirements from the non-potable cap rock aquifer will increase by 0.55 MGD, as reported in the 1988 EIS. The increased usage in the form of source requirements will deplete the available reserves and create a situation where groundwater pumpage comes closer to meeting the "sustainable yield" of the aquifer.

Mitigation - To ensure there are adequate supplies of water available from the potable and non-potable aquifers, the State Commission on Water Resource Management monitors and approves the cumulative request for source development. Potable source requirements for the project were approved by this Commission for the water requirements reported in the 1988 EIS

and have been reconfirmed, based on the current requirements identified in the supplemental document.

However, the Commission identifies that non-potable sources from the cap rock aquifer are insufficient. The Commission further has directed the developer to work as a member of the Cap Rock Regional Plan to develop alternative non-potable water sources. The alternative source being proposed is reclaimed effluent from the Honouliuli Wastewater Treatment Plant. 25 MGD is ultimately proposed for reuse.

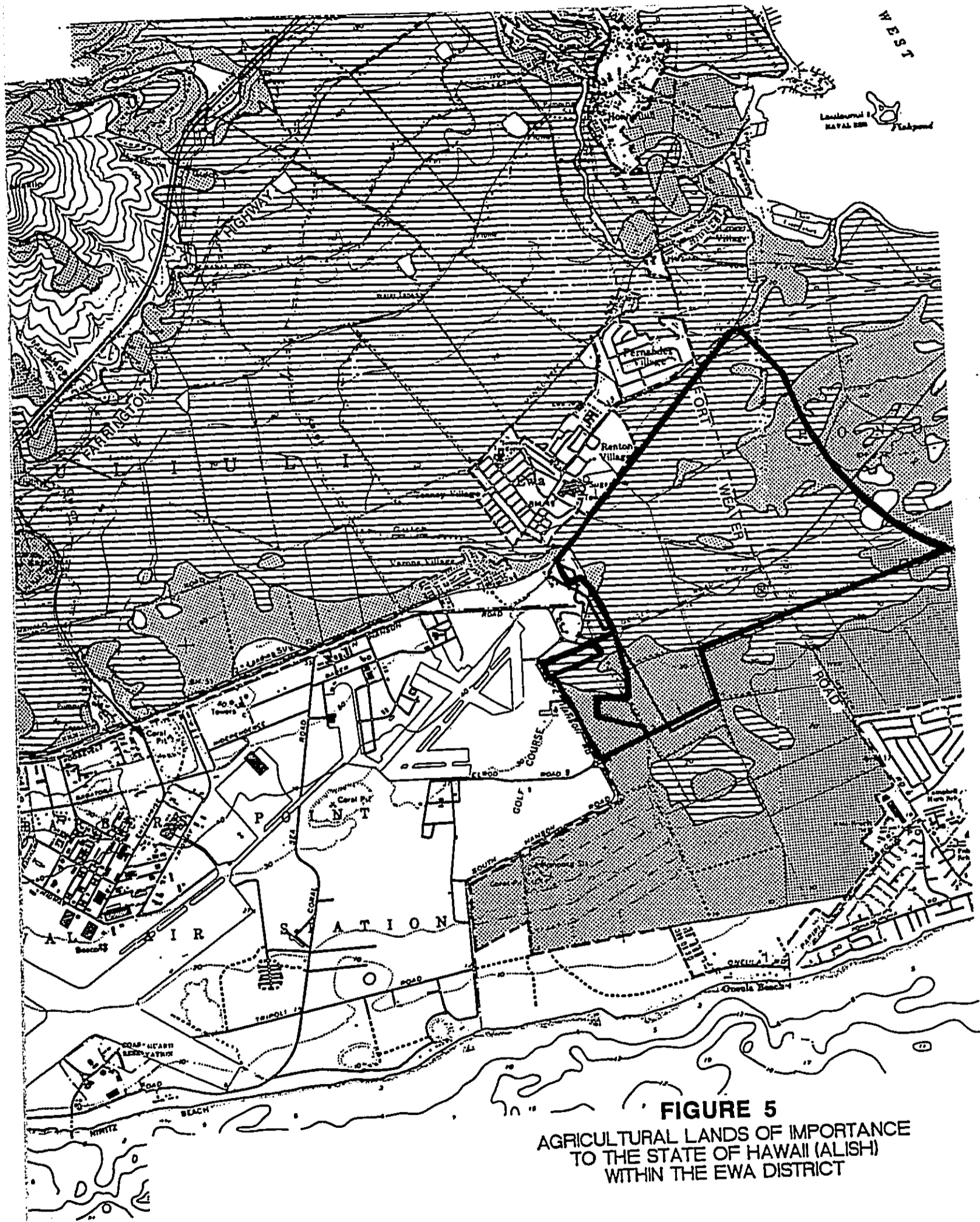
b. Drainage

The whole area of Gentry is located between two watersheds. The watershed to the west side of the project site and in close proximity to the currently proposed action is Kaloι Gulch. This watershed basin is 728 square miles and is known as Kaloι Gulch. The drainage basin terminates at the ocean. Existing Kaloι Gulch has inadequate capacity to handle peak discharges. During peak discharge events, water sheetflows across canefield land and vacant land and also percolates into the "cap rock" aquifer via ground depressions. The capacity of Kaloι Gulch is estimated to be approximately 1,050 cubic feet per second under existing conditions.

Impacts - The 1988 Environmental Impact Statement reported that the eventual peak discharge passing through Kaloι Gulch in the vicinity of the project is approximately 11,000 CFS. This discharge can be realized when the proposed urbanization on the Kapolei Area Long-Range Master Plan are in place. As identified, the existing Kaloι Gulch drainage system is inadequate and drainage hazard impacts will be realized without appropriate mitigation.

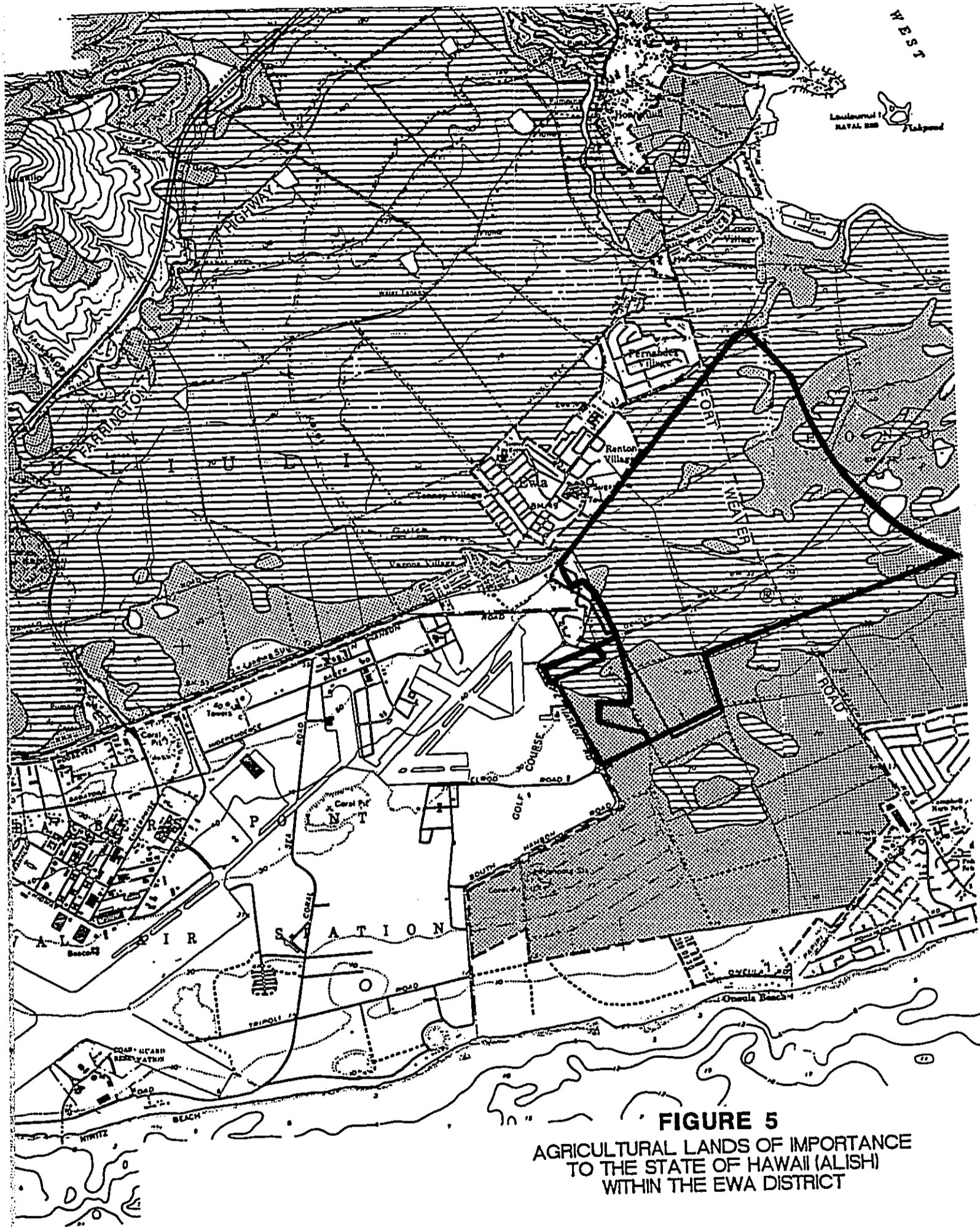
Mitigation - The 1988 Environmental Impact Statement contained the Drainage Master Plan for the Ewa By Gentry Project. Although minor modifications to the Master Plan have been developed, the principle of providing an open channel through the Ewa By Gentry golf course project transmitting water through the project is proposed as mitigation. This will pass water through the project boundaries with freeboard provisions to ensure stormwater events will not produce water levels encroaching into residential units. The current drainage master plan provides capacity for a peak flow of 9,600 CFS.⁷

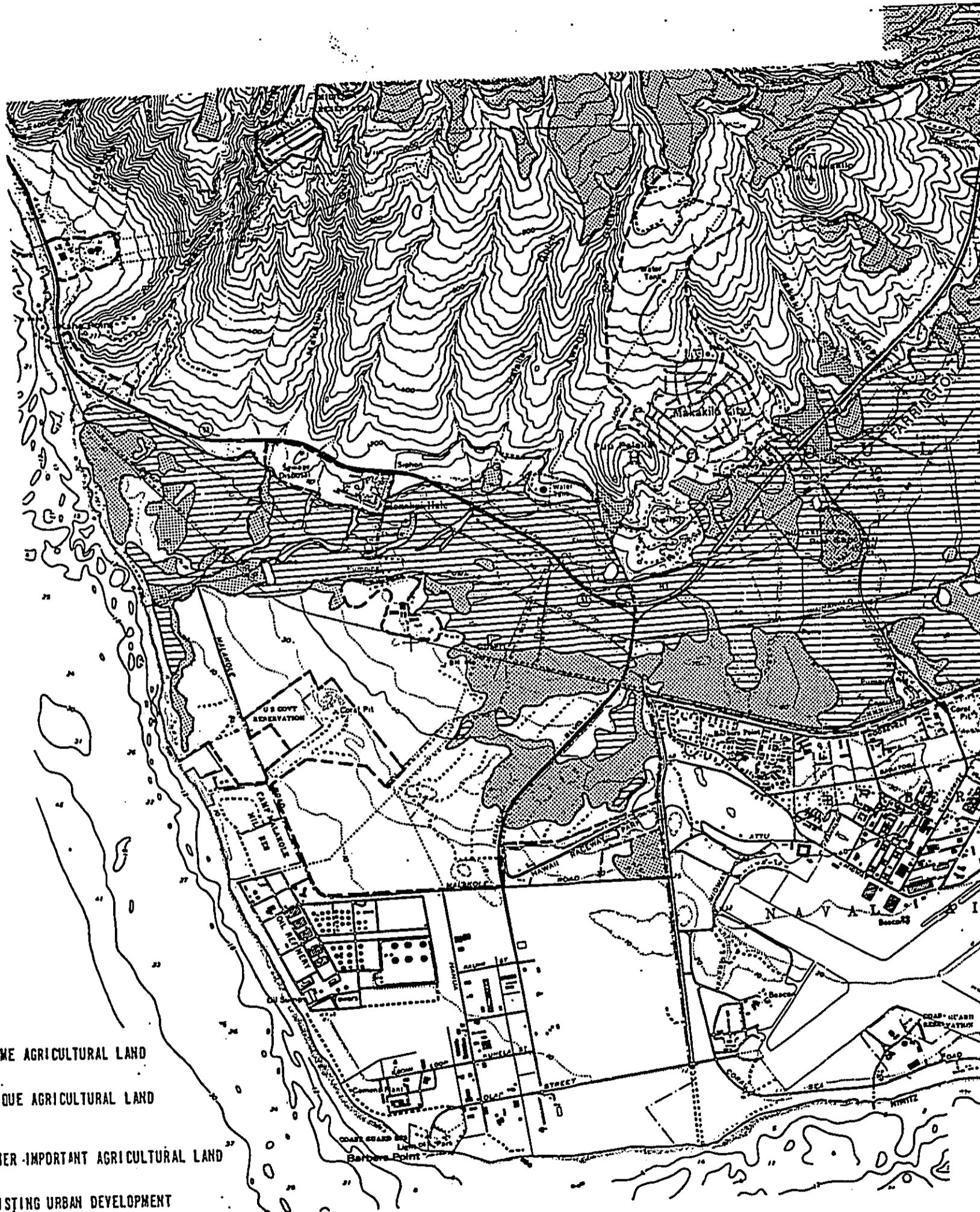
In addition, all stormwater entering Ewa By Gentry must pass through its property and ultimately discharge into the ocean. Therefore, numerous developers must accommodate Kaloι Gulch








CORRECTION

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





-  PRIME AGRICULTURAL LAND
-  UNIQUE AGRICULTURAL LAND
-  OTHER IMPORTANT AGRICULTURAL LAND
-  EXISTING URBAN DEVELOPMENT
-  U. S. GOVERNMENT

drainage. The developers include the Housing Finance and Development Corporation (HFDC), The Gentry Companies, the City & County of Honolulu, Haseko and the Estate of James Campbell. While all developers must design stormwater conveyance systems based on an envelope curve principle, there is a need for joint cooperation to ensure water quality. The City & County of Honolulu Department of Public Works will shortly issue a draft report (May 1993) identifying its recommendations with respect to water quality issues and alternatives.

5. Agricultural Resources

The site currently proposed for 71 acres of Development Plan Amendment consist of lands that are currently fallow sugarcane fields. The State Department of Agriculture has produced a series of maps which identifies agricultural lands of importance to the State of Hawaii (ALISH). Figure 5 contains the ALISH exhibit, included in the 1988 EIS, with the existing Ewa By Gentry project and proposed amendment sites identified. The currently proposed sites are predominantly in lands identified as "other important agricultural land."

The State of Hawaii Department of Agriculture has also developed a quantitative Land Evaluation and Site Assessment system (LESA) for determining the quality of Hawaii's land for viable agricultural use. As reported in the 1988 Environmental Impact Statement, the average Land Evaluation (LE) rating for the Ewa By Gentry project site is approximately 77. This rating indicates that the general suitability of the project site lands for agricultural cultivation is viable.

Impacts - As indicated in the 1988 Environmental Impact Statement,² development by Ewa By Gentry Project will take agriculturally productive lands out of cultivation and replace these lands in an urban setting. This represents an impact on agricultural resources.

Mitigation - The Kapolei Area Long-Range Master Plan is located on the Estate of James Campbell, and the Estate has an agreement with the major sugarcane producer on the Plain (OSCo) to gradually phase out sugarcane cultivation in an orderly fashion.

6. Air Quality

The 1988 Environmental Impact Statement summarized the Hawaii and Federal ambient air quality standards for various pollutants, including particulates, sulfur dioxide, carbon monoxide, nitrogen oxide, ozone and lead. In general, the Hawaii standards are considerably more stringent than comparable Federal standards for the same air quality

indicators. Historical information has shown, where monitoring information exists, that the Hawaii standards are rarely exceeded. Therefore, on the basis of long-term information, it was reported that the project site and surrounding Ewa District environment is presently not influenced by significant sources of air pollutants.

With respect to the currently proposed action, there is one potential source of air quality pollutants. The 71-acre project site is in close proximity to the City & County of Honolulu Honouliuli Wastewater Treatment Plant facilities. Due to the wastewater treatment plant's extensively long collection system, sewage has a tendency to become septic and discharge of air pollutants in the form of hydrogen sulfide and mercaptans is concentrated at the wastewater treatment plant facilities. Hydrogen sulfide gas is characterized by a pungent "rotten egg" smell and concentrations in excess of .0025 parts per billion are considered unacceptable. Currently, the City & County of Honolulu is implementing an extensive odor abatement program specifically geared at capturing hydrogen sulfide and mercaptans. The City's consultant maintains that, after start-up, all air quality requirements with respect to H₂S will be achieved (GMP, 1993).⁹

Impacts - Air quality will be primarily influenced by the creation of additional motor vehicle activity associated with the Ewa By Gentry Project and other surrounding projects on the Ewa Plains. Specifically, the Ewa Marina, Phase II, Final Environmental Impact Statement (FEIS) prepared by Haseko (Hawaii, Inc.) utilized the Ewa Region Highway Transportation Master Plan as the basis for air quality projections related to motor vehicles.⁹ The site identified for critical analysis focused on the Fort Weaver Road area south of Geiger Road. The Ewa By Gentry Project was included as a part of the base traffic volume reported in this document. Therefore, the conclusions reached in the 1991 Ewa Marina Phase II FEIS are similar, if not identical, to that of the Ewa By Gentry Project. The results of "worst case" analysis showed no exceedences of State or Federal 8-hour standards respect to carbon monoxide concentrations.⁹

Development of the Ewa By Gentry Project will create a total power demand of 22 megawatts which will be produced by Hawaiian Electric Company (HECO) at its Kahe Generating Station. The 1988 EIS³ reported a total electrical generation demand of 18 megawatts. This power requirement will increase emissions at the Kahe facility. The Ewa Marina Phase II (FEIS) reported that 18 megawatts of power demand for the Marina project would increase county emissions by 0.5 percent.⁹ Based on the similar size power requirement for Ewa By Gentry, it has been extrapolated that the total Ewa By Gentry Project will produce a proportional increase in county emissions.

It is anticipated that construction activities will also provide impacts in the form of fugitive dust from activities such as earthmoving and emission from construction vehicles.

Mitigation - Proposed mitigation measures to reduce impact of vehicle activity include creation of high improvements to increase capacity. To that end, Gentry Development Companies is a member of the developer's working group preparing the Ewa Region Highway Transportation Master Plan. The whole purpose of this Master Plan creation is to identify and implement highway improvements. Other identified mitigation measures to minimize air quality impacts include development of a mass transit system, increased bus usage and carpooling. However, one of the most important mitigation measures which can be realized is the true creation of a Second City on the Ewa Plains with employment opportunities to eliminate the amount of vehicle miles necessary for residents of the Ewa Plains to reach their employment destinations. This is a primary feature of the Kapolei Area Long-Range Master Plan.

Measures which exist to minimize the impact of air quality deterioration through power generation at the Kahe Power Plant include utilization of development techniques and construction techniques which minimize power requirements. The Ewa Marina FEIS specifically reported various methods as recommended by the State Department of Business Economic, Development and Tourism. These methods are reported below:⁹

- East/west orientation of streets for the long dimensions of houses to minimize heat gains in the morning and afternoon.
- Adequate system of walkways and bikeways to encourage walking and bicycling between home, school, park and commercial areas.
- Selection and placement of landscape materials to provide shading for minimization of heat gains in the morning and afternoon
- Use drought-resistant plants for landscaping to reduce energy use associated with irrigation.
- Install operable windows and orient opening towards prevailing winds.
- Install eaves (minimum 30 inches), louvers, trellises, or shade screen to shade windows, especially on west, south, and east sides.

- Include attics ventilated by devices such as louvers at or near the roof ridge.
- Include radiant barriers in attics.
- Use light colored finishes on roofs and walls.
- Install heat pump water heaters, or
- Install solar water heaters or provide for future installation by pre-plumbing and pre-wiring.
- Install the most energy-efficient appliances.
- Install time switches to high-usage applications or equipment such as electric water heaters.
- Install fluorescent lights with high efficiency ballasts.

With respect to construction-related air quality impacts, the City & County of Honolulu grading ordinance has recognized for numerous years the appropriate methods to minimize air quality disruption created through earthwork operations, in particular. Specifically, frequent watering of soils is required and landscaping of exposed soils is required as soon as possible. Further, various permits are required to ensure that construction vehicles comply with appropriate emission standards to minimize air quality deterioration.

7. Noise

The 1988 Environmental Impact Statement reported findings of a 1984 Air Installations Compatible Use Zone (AICUZ) plan for the Barbers Point Naval Air Station. This evaluation indicated that the Ewa By Gentry Project was in an acceptable-moderate exposure noise exposure class based on Federal noise guidelines and standards. Figure 6 shows the 1984 noise contours.³

Since the 1988 Environmental Impact Statement, a subsequent AICUZ has been prepared for the Barbers Point Naval Air Station. This AICUZ was prepared as a result of an agreement between the Navy and the Estate of James Campbell concerning the development of certain lands adjacent to the Air Station. The current AICUZ is shown on Figure 7 and demonstrates that the exposure for all of Ewa By Gentry, and specifically the currently-proposed amendment site, will fall into an acceptable-minimal exposure noise exposure class.¹⁰ This rating is

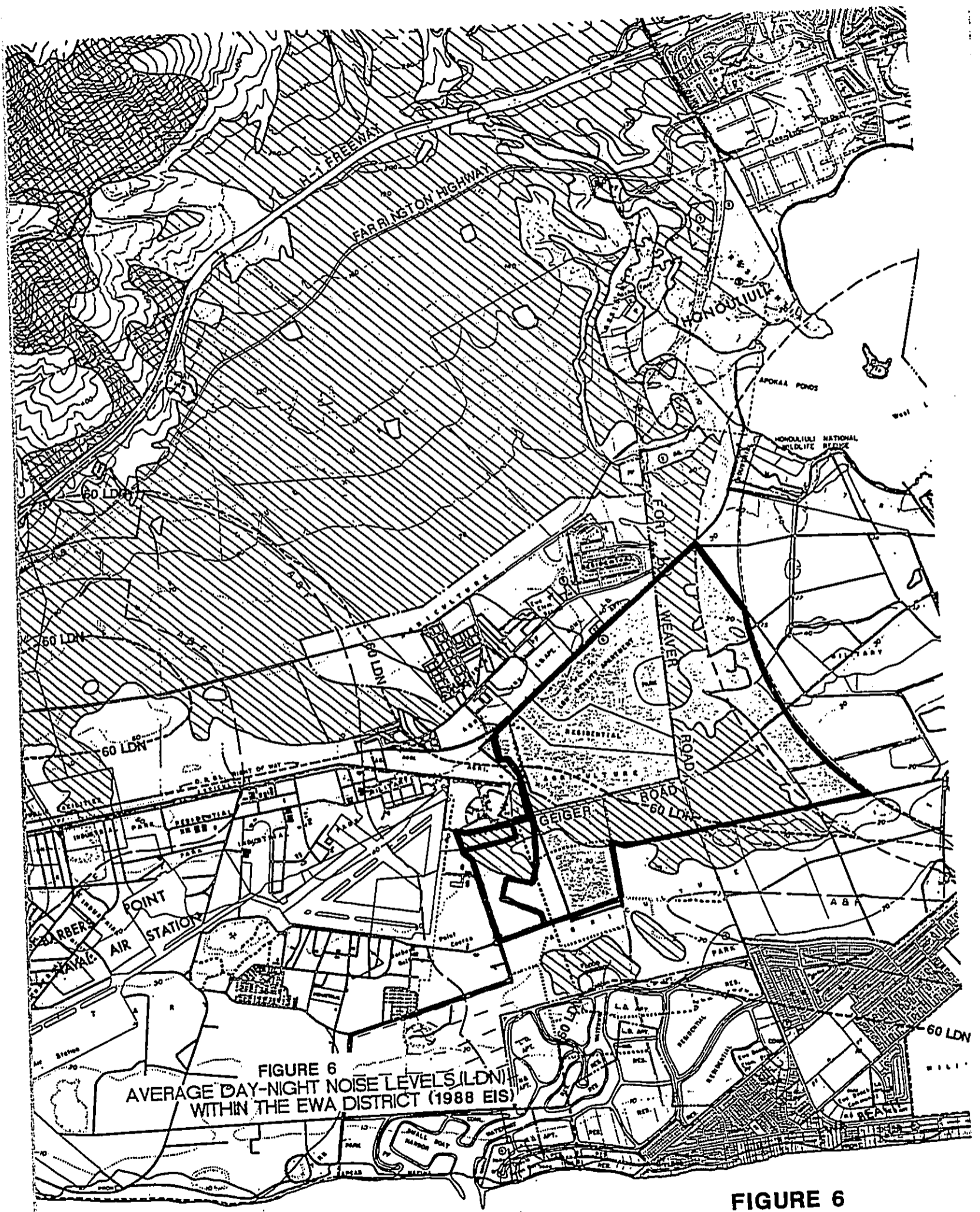
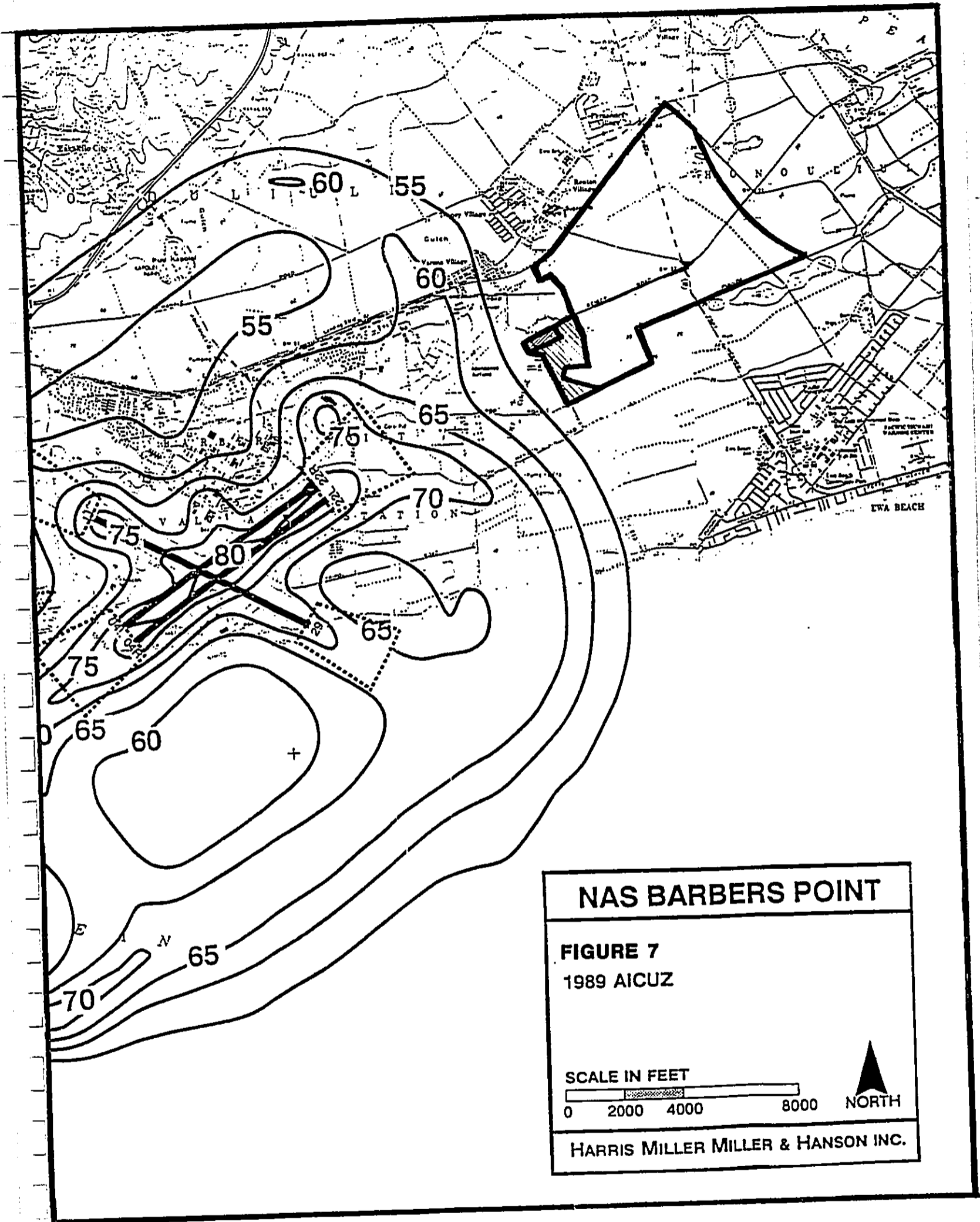


FIGURE 6
 AVERAGE DAY-NIGHT NOISE LEVELS (LDN)
 WITHIN THE EWA DISTRICT (1988 EIS)

FIGURE 6

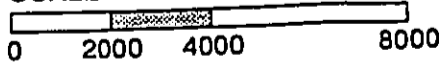




NAS BARBERS POINT

FIGURE 7
1989 AICUZ

SCALE IN FEET



HARRIS MILLER MILLER & HANSON INC.

FIGURE 8

SUMMARY OF FEDERAL NOISE GUIDELINES AND STANDARDS

NOISE ZONE CLASSIFICATION

Noise Exposure Class	Noise Descriptor			HUD Noise Standards For New Residential Development
	DNL ¹ Day-Night Average Sound Level	L _{eq} (hour) ³ Equivalent Sound Level	NEF ⁴ Noise exposure Forecast	
Minimal Exposure	Not Exceeding 55	Not Exceeding 55	Not Exceeding 20	"Acceptable"
Moderate Exposure	Above 55 ² But Not Exceeding 65	Above 55 But Not Exceeding 65	Above 25 But Not Exceeding 30	
Significant Exposure	Above 65 Not Exceeding 70	Above 65 Not Exceeding 70	Above 30 Not Exceeding 35	"Normally Unacceptable"
	Above 70 But Not Exceeding 75	Above 70 But Not Exceeding 75	Above 35 But Not Exceeding 40	
Severe Exposure	Above 75 But Not Exceeding 80	Above 75 But Not Exceeding 80	Not Exceeding 45	"Unacceptable"
	Above 80 But Not Exceeding 85	Above 80 But Not Exceeding 85	Above 45 But Not Exceeding 50	
	Above 85	Above 85	Above 50	

¹CNEL - Community Noise Equivalent Level (California only) uses the same values.

²HUD, DOT, and EPA recognize Leq = 55 dB as a goal for outdoors in residential areas in protecting the public health and welfare with an adequate margin of safety (Reference: EPA "Levels" Document.) However, it is not a regulatory goal. It is a level defined by a negotiated scientific consensus without concern for economic and technological feasibility or the needs and desires of any particular community.

³The Federal Highway Administration (FHWA) noise policy uses this descriptor as an alternative to L10 (noise level exceeded ten percent of the time) in connection with its policy for highway noise mitigation. The Leq(design hour) is equivalent to DNL hours; 2) traffic between 10 p.m. and 7 a.m. does not exceed fifteen percent of the average daily traffic flow in vehicles per 24 hours. Under these conditions DNL equals L10 - 3 decibels.

⁴For use in airport environs only; is now being superceded by DNL.

Source: Federal Interagency Committee on Urban Noise - "Guidelines for Considering Noise in Land Use Planning and Control" - NIOS P881-214124, June 1981.

more acceptable with respect to housing than that identified in the 1988 EIS. The class ratings are shown on Figure 8.³

Impacts - As reported in the 1988 Ewa By Gentry EIS, impacts of noise are primarily associated with traffic, and specifically residential areas adjacent to major thoroughfares. The proposed Development Plan area does not have any major collectors and Geiger Road as well as the road passing through the Development Plan area will be 60-foot right-of-ways, providing two-lane-two-way traffic.

Mitigation - While noise is not anticipated to be a significant impact, the use of larger setbacks from rights-of-ways, or the use of sound-screening attenuation devices, including landscaping, are appropriate methods reasonably available to the project, if necessary.

8. Biological Resources

a. Flora

The 1988 Environmental Impact Statement authorized a botanical survey¹¹ of all of Ewa By Gentry project lands. The survey concluded that most of the project site was generally dominated by sugarcane fields and introduced species were mostly weedy and occurring on lands undisturbed by sugarcane cultivation. Further, the study identified that very few remnant native plants remain on the Ewa Plain, since it has been disturbed for such a long period of time. The only two identified endangered species on the Ewa Plain are limited to Campbell Industrial Park and the Barbers Point Naval Air Station, where they occur on limestone substrate. The final conclusion of the 1988 Botanical Survey were that no remnant native plant communities or rare, threatened and endangered plants on the Ewa By Gentry project site.

Impacts - No impacts on flora are anticipated.

Mitigation - No mitigation measures are proposed.

b. Fauna

The 1988 Environmental Impact Statement authorized preparation of a survey¹² to identify fauna in the Ewa By Gentry project region. No endemic birds or animals were determined to be present on the project site and only introduced mammals inhabit the area. These mammals include mongoose, three species of rats, feral cats and feral dogs.

Impacts - No impacts on fauna are anticipated.

Mitigation - No mitigation measures are proposed.

9. Cultural Resources

a. Introduction

The 1988 Environmental Impact Statement for the Ewa By Gentry Project identified the existing environment from both an historical perspective, as well as a socio-economic perspective. A summary of the findings is contained in this section.

b. Historical Perspective

Development of the first artesian well at West Loch was by James Campbell in 1879. Subsequently, agricultural activity was brought to the Ewa Plains in the form of sugarcane cultivation. Prior to this date, the Ewa Plains land had little use or development potential. Sugarcane cultivation flourished for some 60 to 70 years.

In the 1960s, events such as increasing production and labor costs, as well as development of new international production areas, reduced the profitability of sugarcane cultivation on the Ewa Plains. As of this date, Oahu Sugar Company (OSCo) is the only company which continues to cultivate sugar on the Ewa Plains.

With respect to rare and historical environmental resources, and in particular archaeological significance, the 1988 EIS consultant report concluded that none of these resources existed, nor was there any significant likelihood that subsurface deposits could be retrieved. Historically, the area was generally recognized as a "low, uncultivated plain" and significant activities related to aquaculture were performed much closer to the coastline.³

Impacts - From an historical perspective, the impact of the proposed project will be that all evidence of the era of sugarcane will be eliminated from the Ewa Plain. All evidence of this era will be documented by written record and by photographs.

Mitigation - No specific mitigation measures are proposed. Further, as identified, there are no historically significant artifacts in the area to be preserved or maintained.

c. Socio-Economic Perspective

The 1988 EIS³ reported that during the flourishing years of the sugar industry in Hawaii, production areas such as Ewa revolved around the plantation, both socially and economically. Plantation workers and their families were provided nominal labor and wages, as well as affordable housing, utility service, recreational opportunities and other community services to secure plantation workers and their families with their lifestyle.

As the sugar industry declined, the Ewa plantation villages of Varona, Tenney, Renton, C Village and others changed from reliance solely on the plantation to that of new employment and social opportunities throughout the Island of Oahu. The plantation villages are further looking towards public agencies for providing desired community and potential services, including new services. With the development of the Kapolei Area Long-Range Master Plan, even more diversified activities, employment opportunity and public services are being realized.

In addition, the Barbers Point Naval Air Station has been an employer on the Ewa Plains for numerous years, and will continue to remain as such.

Impacts - The impact of the proposed project will be a further transformation of the Ewa area from the plantation environment to a planned community, creating housing and employment centers, working together.

Mitigation - No mitigation measures are proposed other than to ensure an orderly and logical transformation to complete the Kapolei Area Long-Range Master Plan.

10. Population

It is anticipated the population growth will increase rapidly over the next 17 years. Table 3 provides current projections from the City & County of Honolulu, as well as that reported by the Estate of James Campbell. This population growth will be 77,000-82,500 people with fulfillment of the Kapolei Area Master Plan shown on Figure 2.

Impacts - The Department of General Planning has projected population growth on the Ewa Plains in conjunction with the creation of a Second City. The Estate of James Campbell has also projected population growth to create its Kapolei Area Long-Range Master Plan. No specific impacts solely related to population are identified.

However, the direct impacts on the environment are reported under other sections of this document.

Mitigation - No mitigation is proposed.

11. Employment

One of the foundations of the Kapolei Area Master Plan is the creation of commercial areas to support the growing population and creation of a true "Second City" concept, rather than expand the current bedroom communities. Employment will be available at the City of Kapolei, Kapolei Business Park, Campbell Industrial Park, Barbers Point Naval Air Station and Ewa Resorts. Job projections are shown on Table 3.

Impacts - As with population, all planning entities definitively expect and encourage employment within the Ewa Plain to support the proposed population and create a Second City. Employment opportunities are a beneficial impact to the Ewa Plain. Other impacts associated with employment such as infrastructure requirements and effect on the environment are reported elsewhere.

Mitigation - No mitigation is proposed.

12. Recreation

As reported in the 1988 EIS recreational participation data indicated the primary recreational activities consisted of swimming and sunbathing at the local beaches and parks and bicycling on public roads and sidewalks. The results from opinion polls also indicated that fishing, picnicking and general City & County park use were also significant recreational activities of Ewa residents.

Impacts - The Ewa By Gentry Project will ultimately support 8,300 residential housing units. This will result in a population of approximately 30,000 residents. The Department of Parks and Recreation through its consultation comments has reported a development plan guideline of 2 acres of active recreation per 1,000 persons. Therefore, the Ewa By Gentry Project has a commitment for approximately 60 ± acres of active recreational areas.

Mitigation - Additional park site areas will be provided through consultation with the Department of Parks and Recreation to confirm acreages and confirm locations for park requirements. (Parks & Recreation, Yuen, 1993)¹³

13. Educational Background

As reported in the 1988 Environmental Impact Statement, 1988 Census information indicated that Barbers Point and Makakilo communities contain the greatest proportion of high school graduates, while the Ewa Village community had the least. Similarly, a higher number of college graduates also lived in Makakilo and Barbers Point and least resided in Ewa Villages and Ewa Beach areas.³

Impacts - No impacts are identified with respect to educational background and a discussion on educational facilities is included under public facilities and services (see page 33).

Mitigation - No mitigation measures are proposed.

TABLE 3 ^a

General Planning Projections for Ewa

Category	Current	Year 2005	Year 2010
Employment	12,400	39,500	48,500
Housing	11,700	30,000	39,000
Population	43,000	94,300	120,000

Estate of James Campbell ^b

Employment	-- ^c	-- ^c	-- ^c
Housing	11,700	44,700	47,000
Population	43,900	97,000	126,300

a-(General Planning, Young, 1993)¹⁴

b-(Campbell Estate, 1993)²

c-(Unavailable)

B. MAN-MADE ENVIRONMENT

1. Housing

The 1988 Environmental Impact Statement identified the 5 primary residential areas existing on the Ewa Plain at Iroquois Point, Ewa Beach, Barbers Point, Makakilo and 6 more villages referred to as "Ewa Villages." Total housing stock that existed at that point in time was 9,500 dwelling units.³

Currently, the previously-identified residential areas still exist. Additional residential housing areas which are part of the Kapolei Area Master Plan have broken ground and housing units are being constructed. Housing units are being created at Makakilo, Ewa by Gentry, the Villages at Kapolei and West Loch Estates. The current housing stock reported by the Department of General Planning is 11,700 units (1990). Housing projections through the Year 2010 are shown on Table 3.

Impact - There are no man-made environment housing impacts. The proposed Ewa By Gentry Project will provide a total of 8,300 housing units, of which 7,150 are approved in the existing Ewa Development Plan and 1,150 are identified in the current Development Plan Amendment. There is no specific impact anticipated on housing other than fulfilling the Master Plan projections for the Ewa Plains.

Mitigation - No mitigation measures are proposed.

2. Commercial Areas

Commercial areas identified in the 1988 EIS were the Ewa Beach Shopping Center containing approximately 72,000 square feet of commercial retail floor space. The adjacent professional services complex consisted of approximately 13,500 feet of office space.

Currently, commercial development has commenced at the City of Kapolei, which will ultimately be a 7 million square feet office and retail center and the Kapolei Shopping Center, which will ultimately be a 240,000 square foot complex.² In addition, Campbell Square in Kapolei Business Park have already had their groundbreaking.² Finally, St. Francis Medical Center-West has been in existence since 1990.

Impacts - No commercial areas are proposed in conjunction with the current Development Plan Amendment. No impacts are identified.

Mitigation - No mitigation measures are proposed.

3. Industrial Areas

The 1988 EIS reported Campbell Industrial Park as the primary industrial facility in Ewa. This statement is true at the current date and the Industrial Park is currently 98 percent occupied. Current employment at the Park is approximately 3,500 people.²

The Ewa industrial activity identified in 1988 was the Barbers Point Harbor. First increment was completed in 1990 and the facility is

designed to accommodate heavy general cargo and bulk commodities.

Impacts - The Ewa By Gentry Project, and specifically the current Development Plan Amendment, identifies 10 acres of industrial lands which will be developed under a limited industrial concept. This proposal is to supplement the Kapolei Area Long-Range Master Plan for stimulation of employment centers on the Ewa Plain.

Mitigation - No mitigation measures are proposed.

C. PUBLIC FACILITIES AND SERVICES

1. Education

The 1988 Environmental Impact Statement identified public schools in the vicinity of the project site as Ewa Beach Elementary, Ewa Elementary, Pohakea Elementary, Ilima Intermediate and Campbell High. Other schools in the Ewa District included Barbers Point, Maupalani and Makakilo. It was further reported that based on anticipated residential growth, additional schools would be required at Kapolei Village, West Loch and Ewa Gentry. Two elementary schools were proposed for Kapolei Village and one each at West Loch and Ewa Gentry. Intermediate and high school were also proposed for Kapolei Village. Since the 1988 EIS, proposed schools have increased to include one more elementary school at Launani - a location between Ewa By Gentry and Ewa Marina. (DoE, Chuck, 1993)¹⁵

The 1988 EIS also identified the average desirable classroom size is 25 students. It further reported a desirable student population for each class of school, including elementary, intermediate and high school. Current school enrollment in the Leeward District is 31,449 students and projections show a 1997 enrollment of 35,915 students. (DoE, Chuck, 1993)¹⁵

Impacts - The 1988 Environmental Impact Statement identified that the Ewa By Gentry Project would generate an increased school enrollment of 3,020 students, based on identification of 7,120 residential units. These projections are currently increased to a total student population of 2,905 students based on 8,300 housing units. This will specifically impact on the actual physical facilities required, as well as manpower necessary in the form of teachers and administration.

The Department of Education has further indicated that its currently-planned elementary school facilities do not have design enrollment to

meet the currently approved housing projects. With respect to intermediate and high school facilities, both Ilima Intermediate and Campbell High School will be overburded by 25 to 30 percent until Kapolei Intermediate and Kapolei High Schools are completed. The earliest completion date available will be 1998.

Mitigation - Ewa By Gentry has currently set aside 6 acres for a school site to be donated to the State. This donation has been based on a fair share contribution to the Department of Education. The additional student population currently identified will require additional facilities and/or fair share contributions, which Ewa By Gentry proposes to provide, as suggested by the Department of Education.

2. Medical and Social Services

The 1988 EIS reported health care facilities in the area as Waipahu Clinic and Moanalua Kaiser Center. It was reported that St. Francis Hospital was under construction. Currently, the hospital has been completed and in operation since 1990.

Impacts - Development of Ewa By Gentry, as well as development on the Ewa Plain, will increase the need for medical and social services.

Mitigation - Medical facilities serving the Ewa Plain are the Moanalua Kaiser Center and St. Francis Hospital-West. Both facilities are relatively new and these private institutions are specifically located in close proximity to the Ewa area, based on growth projections anticipated by the facilities. (St. Francis, Baich, 1993)¹⁶ Therefore, no specific mitigation measures with respect to medical facilities is proposed, or has been considered.

Social services are normally provided based on population requirements. Facilities are further developed based on a supporting tax revenue base. Expansion or addition of social facilities will be mitigated by provision of additional tax revenues.

3. Transportation

a. Roadway System

The 1988 EIS had a detailed section on transportation and appended a Transportation Impact Analysis. Since the 1988 Environmental Impact Statement, the Ewa Region Highway Transportation Master Plan¹⁷ has been completed and its last revision is dated November, 1992. This Master Plan identifies roadway concepts for Ewa Plain necessary to support the

Kapolei Area Master Plan in the Years 1997 and 2005. The people involved in developing this Master Plan are critical government agencies and principal developers in the area and the parties include the following:

Department of Housing and Community Development
(City & County of Honolulu)
Estate of James Campbell
Finance Realty Company, Ltd.
Gentry Pacific, Ltd.
Hale Kukua Development Corporation
Haseko (Hawaii, Inc.)
Housing Finance and Development Corporation
(State of Hawaii)
West Beach Estates

The Highway Master Plan is specifically referred to as a working plan and revisions, as needed, to maintain consistency with ongoing land use development in the Ewa region are required. The study has generated roadway concepts for future years based on planning projections. Planning projections are available from both the City & County of Honolulu Department of General Planning and the developer's group. Due to the fact that the developer's group envisions a larger number of residential units on the Master Plan (+40 percent) and a slightly smaller number of employment opportunities (-10 percent), for planning purposes the larger estimates were utilized. Figures 6 and 10 (see Appendix C) show the 1997 and 2005 roadway concepts, respectively. In addition, the major facilities of the roadway master plan are shown on the Kapolei Area Long-Range Master Plan (see Figure 2).

During the consultation period the Department of General Planning specifically referenced alignment of the north-south road as an issue for discussion. The current alignment as envisioned by Gentry Development Company is shown on their Master Plan (see Figure 1) and has been confirmed by the traffic consultant. (Pacific Planning, Shimazu, 1993)¹⁸

The exact alignment of the northern end of the North/South Road is not set and an Environmental Impact Statement will be prepared to evaluate alternatives and impacts. As of this date, a contract for the EIS has not been executed. (Pacific Planning, Shimazu, 1993)¹⁸

Appendix A contains the entire current version of the Ewa Region Highway Transportation Master Plan. This is being included as a part of the record, since there is particular interest in this item from a regional standpoint as well as leeward coast perspective due to regional traffic implications.

It should be identified that a critical component of the Ewa Regional Highway Transportation Master Plan is the assumption that employment opportunities will be truly created on the Ewa Plain, thus reducing the peak hour demands to current employment centers of Pearl Harbor and Downtown Honolulu. Should the employment possibilities not be achieved on the Ewa Plain, one of the foundations for the traffic master plan will not have been fulfilled.

Impacts - Development of the Ewa By Gentry Project will produce traffic impact on local, collector and regional systems. Specific traffic impacts through traffic generation projections are included in the Ewa Region Highway Transportation Master Plan.

Mitigation - Development of the Ewa Region Highway Transportation Master Plan is intended to mitigate the impacts of increased vehicular activity on the Ewa Plains. As identified in the Master Plan, infrastructure requirements will be funded and built through a fair-share contribution by the respective developers. Gentry Development Companies has already committed to this program.

A major component of the Ewa Region Highway Transportation Master Plan is the true creation of job opportunities and employment opportunities on the Ewa Plain. Therefore, the creation of jobs decreasing the amount of vehicular miles required to get to employment centers is a critical mitigation measure with respect to traffic on the Ewa Plain.

4. Recreation and Community Facilities

The 1988 Environmental Impact Statement identified recreational facilities of the Ewa area, including neighborhood parks, beach parks, and one existing golf course on the Barbers Point Naval Air Station. It was further identified that existing recreational facilities receive heavy use through the shortage of facilities in other areas.

The 1988 EIS identified the various parks that are being developed in conjunction with the Kapolei Area Master Plan. Location of these

parks as currently proposed is shown on the Kapolei Area Long-Range Master Plan (see Figure 2).

Impacts - As previously identified, the development of Ewa By Gentry will create a design population of approximately 30,000 residents. Based on Development Plan Common Provision guidelines, a total of 60± acres of active recreational area is required to support this population.

Mitigation - Ewa By Gentry has already set aside 3 park sites, as identified in the 1988 Environmental Impact Statement. The current Master Plan shown on Figure 2 shows a fourth park site. While this park site has been questioned by the Department of Parks and Recreation during the consultation process (Parks & Recreation, Yuen, 1993),¹³ this issue will be resolved and Ewa By Gentry will provide its proportional share of park facilities.

5. Water Systems

The 1988 Environmental Impact Statement identified that the Ewa By Gentry Project was in the Ewa/Waianae District of the Board of Water Supply system. Further, the major components of the system were identified.

Currently, Ewa By Gentry is a member of the Ewa Plain Water Development Corporation, which is responsible for providing off-site water facilities, including adequate source development for projects on the Ewa Plain. The Master Plan has a dual water system, including potable water components and non-potable water components. 1988 potable and non-potable average water demands for the Ewa By Gentry Project were identified as 3.4 MGD and 1.0 MGD,¹⁹ respectively. The revised demands are 3.7 MGD and 1.55 MGD.⁴ During the consultation process, the City & County of Honolulu Board of Water Supply has identified that the changes proposed in this Environmental Impact Statement are reflected in the approved Ewa By Gentry water master plan and that the developer will be required to install the complete on-site water system in conformance of Board of Water Supply standards for the project. The State Commission on Water Resource Management has also confirmed the current Ewa By Gentry potable water demands have been recognized and allocated.

Impacts - The impact on water systems is directly related to groundwater and was identified earlier (see page 17).

Mitigation - In addition to obtaining proper source allocation from the State Commission on Water Resource Management, the project will

also install and develop the transmission and storage systems required to deliver water to the Ewa Plain.

6. Solid Waste Management

The 1988 Environmental Impact Statement identified that a refuse disposal service for residential development on the Ewa Plain are provided by the City & County of Honolulu Division of Refuse. Non-residential disposal services are provided by private refuse companies. Sites available for solid waste disposal are the City & County of Honolulu HPOWER facility and Waimanalo Gulch Landfill. These sites and facilities have come into existence since the preparation of the 1988 Environmental Impact Statement. The HPOWER facility has an 1,800 ton/day capacity and has been operating at full capacity since 1990. The Waimanalo Gulch Landfill is estimated to have a 12-year life. (DPW, Hamada, 1993)²⁰

Impacts - As reported in the 1988 EIS, the project consisting of 7,120 units would generate approximately 75 tons/day of solid waste. Based on the currently proposed 8,300 residential units, the total daily solid waste generation would grow to approximately 90 tons/day. However, these generation volumes were based on 5.7 pounds/person/day. The City & County currently uses a figure of 4.2 pounds/person/day (DPW, Namumnart, 1993)²¹ and this will generate 63 tons/day at the Ewa By Gentry Development. Production of this quantity of solid waste will impact the existing county disposal facilities.

The City & County also estimates that one vehicle is necessary to serve 1,800 homes. Therefore, Ewa By Gentry will ultimately produce a need for 4-5 refuse pickup vehicles. (DPW, Shiraishi, 1993)²²

Mitigation - The Ewa By Gentry Project will endeavor to promote recycling as its primary realistic means of mitigating this impact. However, the City & County of Honolulu through creation of its Resource Recovery facility (HPOWER) has already issued a program to recover energy, as well as decrease the amount of solid waste which must be ultimately disposed of in landfills.

7. Wastewater

The 1988 Environmental Impact Statement identified that treatment facilities serving the project area and Ewa Plains are the Honouliuli

Wastewater Treatment Plant facilities. Master Plan collection systems have been preliminarily designed to transport sewage to the facility.

The current capacity of the wastewater treatment plant is 25 MGD. Subsequent expansions increasing the capacity to 38 MGD, and ultimately 51 MGD, are already existing, or in the design stage. In addition, the treatment plant's master plan specifically calls for secondary treatment of 13 MGD of the 38 MGD design flow for reuse as non-potable water for landscaping and golf course irrigation. (DPW, Yoshimoto, 1993)²³

The status of all wastewater management treatment capacity projections are currently questionable due to administrative proceedings and legal proceedings initiated against the City & County by various environmental groups, including the Sierra Club. After these proceedings have been completed, the treatment plant capacity of the Honouliuli system will be more defined.

Impacts - The total Ewa By Gentry Project will generate a wastewater disposal requirement of approximately 2.6 MGD. Included in this total is the 0.4 MGD associated with the specific Development Plan Amendment area. All wastewater must be treated at the Honouliuli Wastewater Treatment Plant facility and this will reduce the treatment plant capacity available. The City & County of Honolulu Division of Wastewater Management (DPW, Yoshimoto, 1993)²³ has recently surveyed Ewa developers for their population and housing projections. Based on the projections provided by all developers, the capacity requirement will exceed the master planned 51 MGD capacity for the Honouliuli Wastewater Treatment Plant. The City further identified that it could not confirm how realistic the developer's projections were. A Facilities Plan addressing projected population growth with respect to Honouliuli treatment plant capacity has been commissioned by the Division of Wastewater Management covering the period 1995 through 2005.

Mitigation - Adequate treatment plant capacity must be available for wastewater disposal. As projects proceed through the planning process, some will move more rapidly and some will stall. While it is impossible to identify which project will fall into either category, some projects may be held back until adequate treatment plant capacity is available.

8. Power Systems

The 1988 Environmental Impact Statement identified that electric power for the area is provided and maintained by Hawaiian Electric

Company (HECO). The 1988 EIS also had a preliminary Master Plan. The Master Plan is still representative. However, re-evaluation and minor changes may be necessary to support the increase in the projected housing demand.

Impacts - As previously identified, the Ewa By Gentry Project will produce a 22 megawatt demand on Hawaiian Electric Company's Kahe power facility. This is a 4-megawatt increase from that reported in the 1988 EIS.

Mitigation - Hawaiian Electric Company is a public utility obligated to provide power to meet the island's growth requirements. As long as planning projections proceed in an orderly fashion, and sufficient time is available to ensure adequate HECO facilities, power will be available.

9. Drainage Systems

There are no major drainage improvements in the area. The U.S.G.S. mapping identifies Kalo Gulch as passing through the Ewa By Gentry project boundaries. A Master Plan has already been approved by appropriate government agencies routing all stormwater through the Ewa By Gentry golf course area. This approved plan will keep the drainageway a natural setting and will allow use of the golf course for retention and recharge of the coral aquifer.

Impacts - (See page 18 for discussion).

Mitigation - (See page 18 for discussion).

10. Communications

The project area is served by GTE Hawaiian Telephone Company. Through the consultation process utilized in preparation of this document, the Telephone Company does not foresee any problems in providing telephone communication services to and within the development.

Impacts - The project will provide additional requirements for facilities, as specifically provided by GTE Hawaiian Telephone Company. Through the consultation process, this company has identified that it foresees no problems in providing service and no impacts are anticipated.

Mitigation - No mitigation measures are proposed.

11. Police and Fire Protection

As reported in the 1988 Environmental Impact Statement, police service for the Ewa area is provided by the Pearl City Station, which is within Police District #3. The 1988 Environmental Impact Statement identified that one police officer is provided for approximately every 400 residents.

The 1988 Environmental Impact Statement identified that fire services in the Ewa area are provided from the Ewa Beach Fire Station, and additional fire support is available from the Waipahu Fire Station. This supplemental document further identifies that the Makakilo Fire Station is also available for support. In 1994, the Campbell Industrial Fire Station will be completed. This facility has been planned and built to serve the expanding Ewa Plain Development. (HFD, Leonardi, 1993)²⁴

Impacts - The Ewa By Gentry Project will place an additional demand on police and fire protection. Based on Police Department projections, the total Ewa By Gentry project would result in a demand for approximately 20 more police officers. Concurrently, development on the Ewa Plains will provide a larger service area for the fire station to cover.

Mitigation - Additional facilities and staff requirements will be necessary for both the police and fire protection for development on the Ewa Plains. These services and facilities are supported by the tax base and it is anticipated, as the population grows, the tax base to support additional facilities and manpower will be created.

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

A. FEDERAL

There are no known federal controls affecting development of the proposed project site.

B. STATE

1. State Land Use

The project site is within the State Urban District as shown on Figure 9 (State Land Use Map). The proposed uses are allowed within the Urban District.

2. Hawaii State Plan

The Hawaii State Plan's long-range goals, objectives and policies are set forth in the Hawaii State Planning Act, Hawaii Revised Statutes (H.R.S.) Chapter 226. The goal of this plan is to achieve a strong, viable economy and viable physical environment that will promote the physical, social and economic well-being of the State's individuals, families and social communities (H.R.S. Section 226-1). Applicable sections of the Hawaii State Plan are as follows:

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

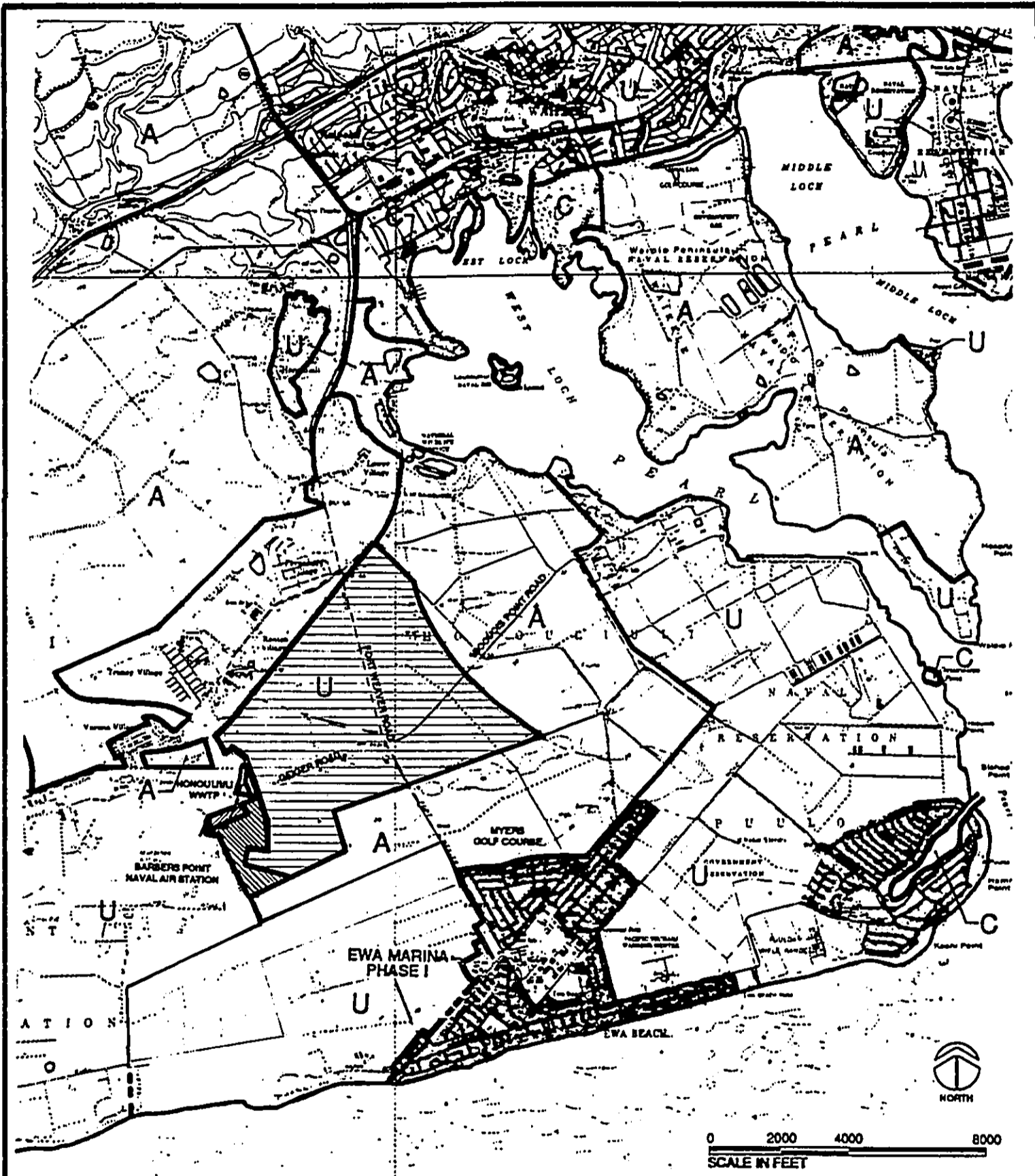
The Ewa By Gentry Project is a planned community, which is a portion of the Kapolei Area Long-Range Master Plan. This long-range master plan is aimed at directing population growth toward Ewa and providing increased housing opportunities.

b. Economy, H.R.S. Section 226-6

A small portion of the Ewa By Gentry Project, and specifically 10 acres of the proposed action, will create industrial uses within the Ewa Plain. This is consistent with promotion the State's economy, as well as specifically promoting employment centers within the Ewa Plain to direct economic activities away from the existing major employment centers.

c. Agriculture, H.R.S. Section 226-7

The Hawaii State Plan is to promote agricultural operations on suitable lands. Lands on which the proposed action are situated



Legend
 U - Urban A - Agriculture
 R - Rural C - Conservation

FIGURE 9
STATE LAND USE DISTRICTS
 Source: Land Use District Maps
 Current as of Nov. 1, 1990

are in fact suitable by current State definition. However, the Estate of James Campbell and Oahu Sugar Company (OSCo) have come to an agreement which will phase out sugarcane operation in certain areas within the Ewa Plain to make way for the Kapolei Area Long-Range Master Plan. Therefore, prior agreements and planning policies have resolved this apparent conflict with the agriculture provision of the Hawaii State Plan.

d. Scenic, Natural Beauty and Historic Resources, H.R.S. Section 226-13

The specific proposed action site will utilize landscaping and minimize building heights to promote open space. There are no park sites incorporated within the proposed action. However, the Ewa By Gentry Project as a whole is creating open space through landscaped areas, golf courses and parks. Further, archaeological review has found no historic artifacts on the property.²⁵

e. Water, H.R.S. Section 226-16

The Hawaii State Plan contends that adequate water be available for development and demands created should not jeopardize the island's well-being. To that end, the Ewa By Gentry Project is a member of the Ewa Plain Water Development Corporation, which is responsible for providing off-site water facilities, including adequate source development for the projects on the Ewa Plain. Through the consultation process of the Environmental Impact Statement preparation, both the Board of Water Supply and Commission on Water Resource Management have confirmed that there is adequate supply available for total Ewa By Gentry Project, including 8,300 residential units.

f. Transportation, H.R.S. Section 226-17

The Gentry Development Company is a part of the developer's working group, which is participating in the preparation of the Ewa Region Highway Transportation Master Plan. This plan is an integrated plan, defining regional concepts for transportation for the whole Kapolei Area Long-Range Master Plan. This process of transportation planning is being used to support full development on the Ewa Plains. Through the consultation process, the City & County Department of Transportation Services has further confirmed the overall roadway system serving the proposed project has generally been approved.

g. Housing, H.R.S. Section 226-19

The Ewa By Gentry Project addresses the need for affordable housing on the Ewa Plain. Ewa By Gentry currently has Development Plan authorization to provide 7,120 new housing units for Oahu residents. Ewa By Gentry will offer a variety of housing types at prices that will be highly competitive with other private projects planned in Ewa and Central Oahu. The current amendment will increase the Development Plan authorization to 8,300 units. Ewa By Gentry will be meeting its requirements for affordable housing.

h. Education, H.R.S. Section 226-21

Ewa By Gentry has already set aside a 6-acre school site to support enrollment generated by 7,120 residential units, as identified in the 1988 EIS. Ewa By Gentry commitment will be further expanded to meet the increase by an additional 1,170 housing units.

3. Hawaii State Functional Plan

The Hawaii State Functional Plan supplements the Hawaii State Plan in the form of 10 functional plans serving as guidelines for the State of Hawaii. The functional plans applicable to this project site are listed below:

State Housing Plan
State Water Resources Development Plan
State Energy Plan
State Health Plan
State Agricultural Plan
State Transportation Plan
State Recreational Plan

All these functional plans have been addressed under the discussions of the Hawaii State Plan, with the exception of Energy and Health. A discussion of each follows:

a. State Energy Plan

The proposed project is in close proximity to existing and proposed development and minimize the need to extend infrastructure requirements to remote areas. In addition, energy conservation/energy saving devices are being encouraged through

the building permit process, as well as through homeowner information and orientation programs.

b. State Health Plan

Residents of the Ewa Plains receive health care at the Kaiser Permanente Leeward Clinic and the St. Francis Medical Center West. The St. Francis Hospital West facility was completed in 1990 and offers a comprehensive range of services ranging from emergency service to full facilities, as well as day-care facilities.

C. CITY & COUNTY

1. General Plan

The General Plan of the City & County of Honolulu provides a statement of long-range objectives for the Island of Oahu. The plan further provides a statement of policies which will allow implementation of these objectives. The General Plan provisions which are relevant to the proposed action include the following:

a. Population

The section of the General Plan promotes both management of the island's population in a form where balance occurs between society, the economy and the environment. The General Plan specifically has a policy concerning creation of a secondary urban center on the Ewa Plains. The Ewa By Gentry project, as well as proposed expansion to the Ewa Gentry Project, is consistent with the Plan's population goals.

b. Natural Environment

This section of the General Plan endeavors to preserve and enhance the natural environment of Oahu. To that end, a primary objective of the project development for Ewa By Gentry is to ensure effective surface drainage and flood control system to preserve the natural setting. The major drainage basin in the area is Kaloi Gulch. Ewa By Gentry has already developed plans to pass all surface water through its project boundaries by utilizing its golf course. This concept will maintain the environment in a natural setting.

c. Housing

The housing section of the General Plan specifically identifies affordable housing and support facilities as well as housing in proximity to employment, recreation and commercial centers as objectives. To that end, the Ewa By Gentry Project is a part of a much larger master plan developed by the Estate of James Campbell. That master plan also supports similar objectives of the General Plan to ensure a true "Second City." Ewa By Gentry specifically will be providing a variety of housing types and will be complying with all affordable housing guidelines as recognized by appropriate agencies. In addition, Ewa By Gentry will also supply housing that has prices comparable to market conditions on the 61-acre project site specifically under consideration. This current Development Plan Amendment will have market home prices in the range of approximately \$200,000 to \$300,000.

d. Transportation and Utilities

This section of the General Plan emphasizes cost-effective transportation, as well as adequate utilities for the service area. High levels of service for water supply and waste disposal are emphasized. To that end, The Gentry Companies are a significant participant in development of the water system for the Ewa Plains, as well as the regional roadway system.

e. Physical Development and Urban Design

The General Plan seeks to systematically ensure that proper coordination is provided for phasing of new developments in an orderly manner while preserving the physical characteristics of existing developments. Specifically, this section encourages the development of a Second City urban center, while maintaining the cooperation of those affected in the sugar industry. Ewa By Gentry has already demonstrated this type of cooperation through its ongoing construction effort.

f. Culture and Recreation

The General Plan seeks to provide a wide range of recreational activities available to the people of Oahu. To that end, the land use plan for Ewa By Gentry currently includes 4 park sites. These facilities are specifically intended to support the recreational provisions of this aspect of the General Plan.

2. Ewa Development Plan

The Ewa Development Plan is shown on Figure 10. The Development Plan provides detail to the General Plan objectives for the Ewa area. The generally recognized boundaries of the Ewa Development Plain extend from West Loch at Pearl Harbor to Nanakuli and cover the coral plain. The principle of the Development Plan for this area states:

"Relevant General Plan policies for Ewa encourage the gradual development of a secondary urban center in order to relieve development pressures in the urban-fringe and rural areas."

To that end, Ewa By Gentry is a portion of the Kapolei Area Long-Range Master Plan which has been developed to achieve the objectives of the Development Plan. Facilities provided by the Ewa By Gentry Project are residential housing, recreation, commercial activities and industrial activities. The specific project area will support a portion of the industrial activities and additional residential use.

3. Development Plan Special Provisions for Ewa

The Development Plan's Special Provisions for Ewa are specifically broken into 4 categories as discussed below:

a. Area Description

It is intended that the Ewa Plain become a Second Urban Center for the purpose of relieving development pressures in the urban-fringe and rural areas. To that end, the special provisions provide guidance to coordinate public and private development consistent with the General Plan. Specifically, the special provisions call for the development of a Second Urban Center in the West Beach-Makakilo area to accommodate the majority of the influx of population in the area between 1985 and the Year 2005. It is also anticipated that that industrialized area of the coral plain be expanded in the mauka direction.

However, the special provisions also recognize the important contribution of agricultural activities on the Ewa Plain and, specifically, agricultural activities in the form of sugar and pineapple cultivation are identified as viable industries which should be respected.

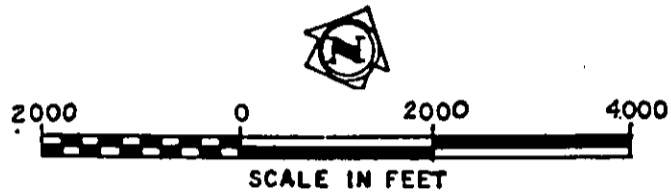
The final consideration under the Area Description category of the special provisions is the recognition of existing communities

ORDINANCE NO. 81-80




















DATE: NOV. 25, 1981

DEVELOPMENT PLAN LAND USE MAP

EWA



LEGEND

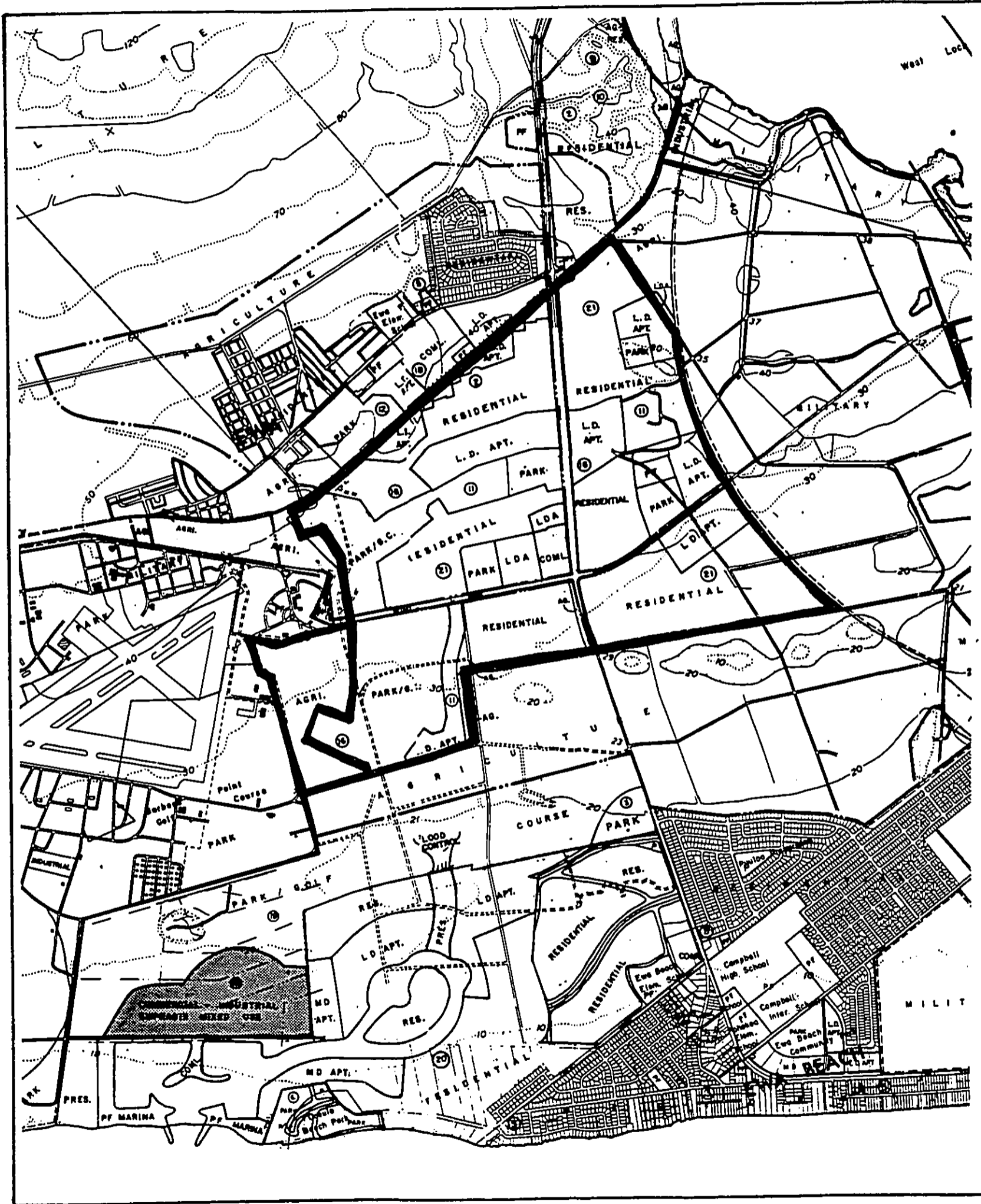
	PRESERVATION		COMMERCIAL
	AGRICULTURE		INDUSTRIAL
	RESIDENTIAL		PARKS AND RECREATION
	APARTMENT		MILITARY
	LOW DENSITY		PUBLIC FACILITIES
	MEDIUM DENSITY		RESIDENTIAL EMPHASIS MIXED USE
	HIGH DENSITY		COMMERCIAL EMPHASIS MIXED USE
	RESORT		COMMERCIAL - INDUSTRIAL EMPHASIS MIXED USE
			DP BOUNDARY
			STATE LAND USE BOUNDARY
			MILITARY BOUNDARY

THE PRINCIPLES AND CONTROLS RELATIVE TO THE BASIC LAND USE CATEGORIES ARE INDICATED IN PART I, COMMON PROVISIONS, OF THE TEXT OF THIS DEVELOPMENT PLAN.

THE PRINCIPLES AND CONTROLS RELATIVE TO SPECIAL AND MIXED USE AREAS ARE INDICATED IN PART II, SPECIAL PROVISIONS OF THE TEXT.

PREPARED BY: DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU

FIGURE 10



consisting of Makakilo, the Ewa Plantation Villages and Ewa Beach. With respect to these existing communities, development on the Ewa Plain should be gradual and maintain their characteristics as well as providing additional support in the form of housing, commercial and recreational facilities.

The Ewa By Gentry Project, including the currently proposed amendment areas, is consistent with this section of the Development Plan Special Provisions. Specifically, Ewa By Gentry will be providing its share of housing to meet the demand anticipated for the Second City area. Secondly, commercial and recreational facilities specifically identified by the Special Provisions will be a part of the Ewa By Gentry Project.

b. Urban Design Principles and Controls for the Area

This section of the Special Provisions identifies open space, public views, height controls and density controls as key elements. To that end, the Ewa By Gentry Project, and particularly the amendment area specifically being analyzed for this Development Plan Amendment will meet all height controls and be below recommended density controls. Identified height controls are 60 feet for industrial uses and a maximum density guidelines are 12 units per acre.

c. Development Priorities

The Special Provisions state the priority for project development is as follows:

- (1) Adequate public facilities and transportation
- (2) Affordable housing
- (3) Public structures to provide human services, including child and care centers and public safety centers
- (4) Development of secondary employment centers

In direct response to this section of the Special Provisions, The Gentry Companies is a member of the developer's working groups specifically creating the Ewa Region Highway Transportation Master Plan for the whole Kapolei Area Long-Range Master Plan. In addition, The Gentry Companies is a member of the Ewa Plain Water Development Corporation, which is responsible for providing potable and non-potable water facilities on the Ewa Plain.

ZONING MAP No.12

EWA BEACH TO IROQUOIS POINT

LEGEND

PRESERVATION ZONES

- P-1 RESTRICTED
- P-2 GENERAL
- F-1 MILITARY AND FEDERAL

RESIDENTIAL ZONES

- R-20 RESIDENTIAL
- R-10 RESIDENTIAL
- R-7.5 RESIDENTIAL
- R-5 RESIDENTIAL
- R-3.5 RESIDENTIAL

APARTMENT ZONES

- A-1 APARTMENT
- A-2 APARTMENT
- A-3 APARTMENT

APARTMENT MIXED USE ZONES

- AMX-1 LOW DENSITY
- AMX-2 MEDIUM DENSITY
- AMX-3 HIGH DENSITY

RESORT ZONE

- RESORT

BUSINESS ZONES

- B-1 NEIGHBORHOOD BUSINESS
- B-2 COMMUNITY BUSINESS

BUSINESS MIXED USE ZONES

- BMX-3 COMMUNITY
- BMX-4 CENTRAL

INDUSTRIAL ZONES

- I-1 LIMITED
- I-2 GENERAL
- I-3 WATERFRONT

INDUSTRIAL MIXED USE ZONES

- MX-1 INDUSTRIAL MIXED USE

AGRICULTURAL ZONES

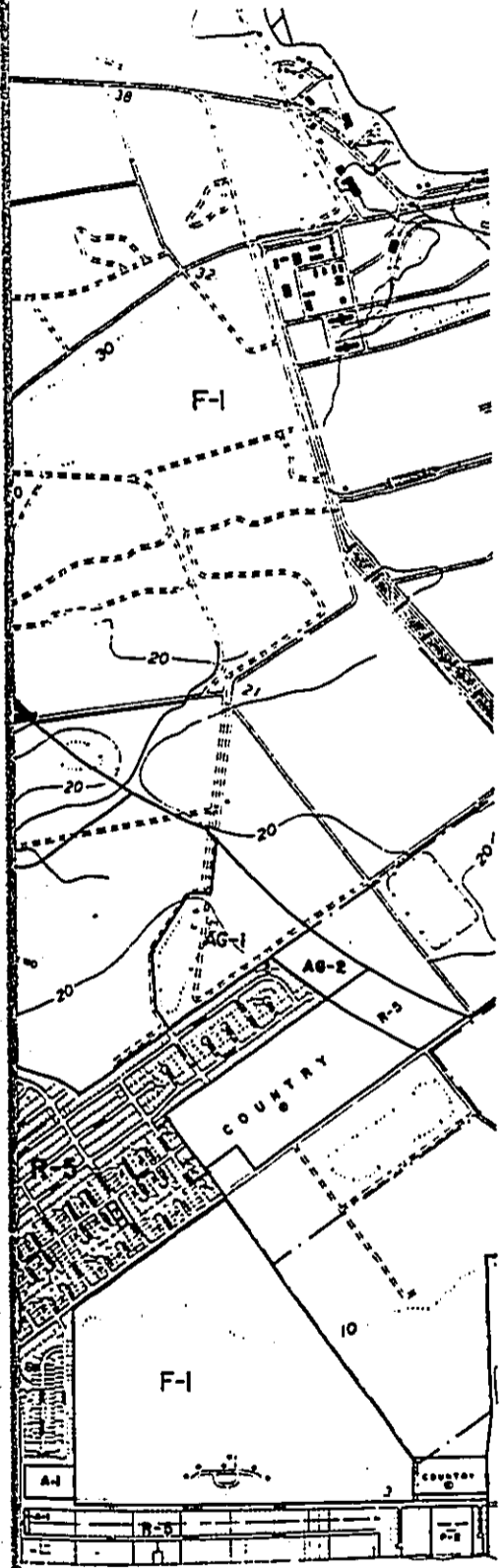
- AG-1 RESTRICTED
- AG-2 GENERAL

COUNTRY ZONE

- C COUNTRY

PLANNED DEVELOPMENT ZONE

- PD-H PLANNED DEVELOPMENT HOUSING



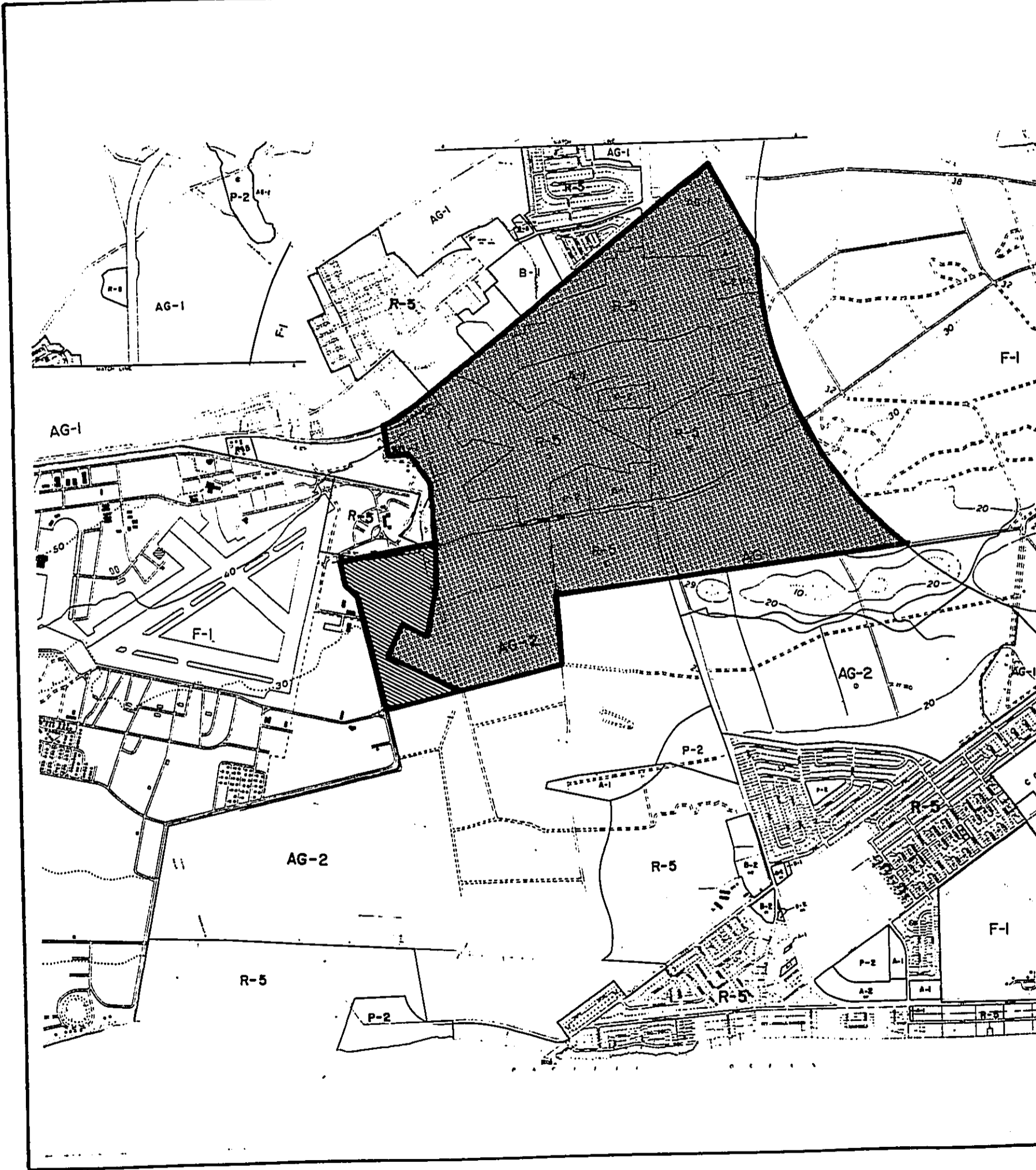
ORD.NO.: 86-114 DATE: 10-22-86



ZONING CHANGES

NO.	ORD NO	DATE	TAX MAP KEY	FROM	TO
1	88-37	4-7-88	9-1-1018, POR. 7	AG-1	AG-2
2	89-55	4-18-89	9-1-0118, POR. 27	R-5	COUNTRY
3	90-78	10-16-90	VARIOUS	AG-1	P-2
4	91-17	3-21-91	VARIOUS	VARIOUS	CHANGES

FIGURE 11



DEVELOPMENT PLAN PUBLIC FACILITIES MAP

EWA

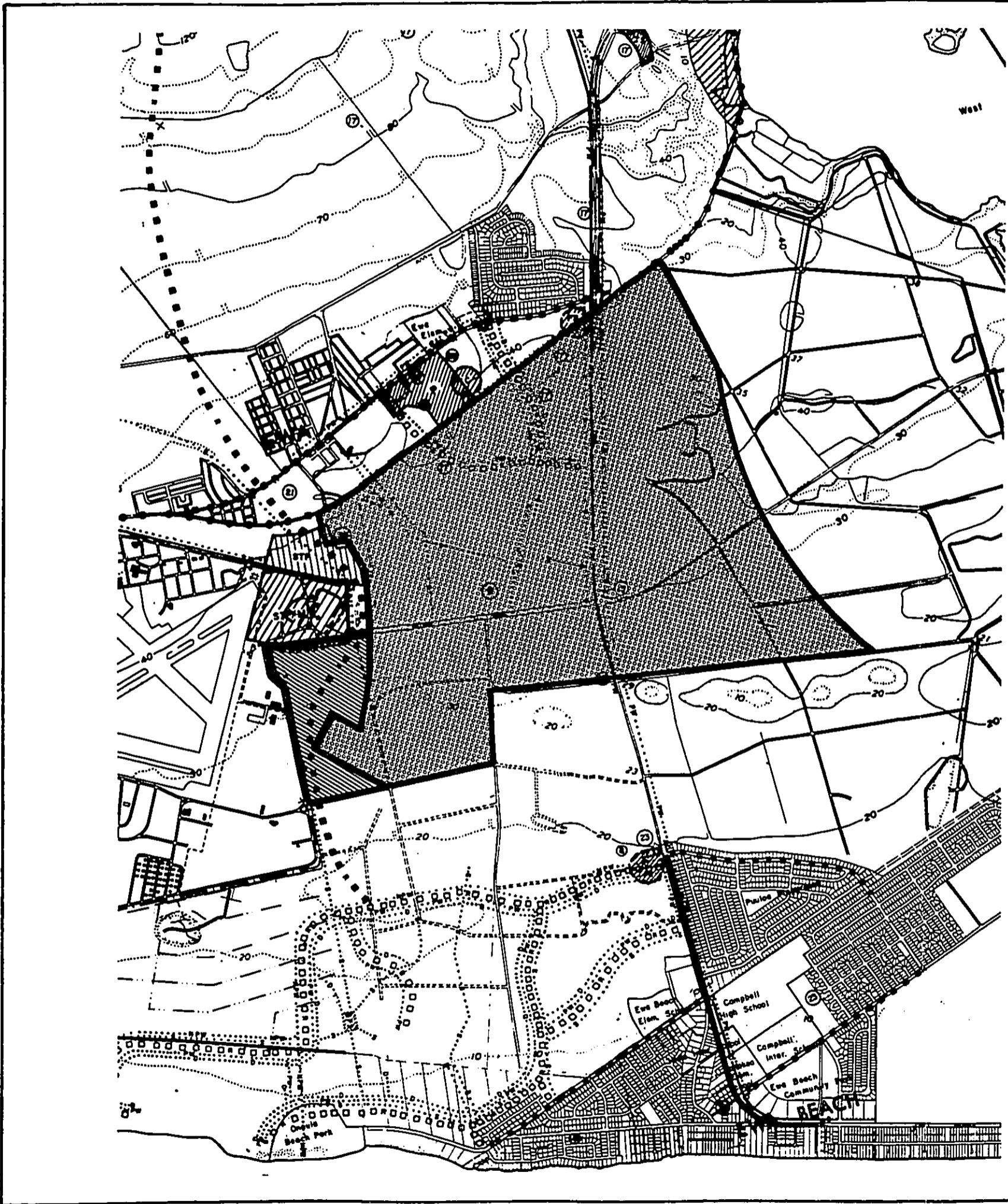


LEGEND

	GOVERNMENT OR PUBLIC UTILITY PROGRAMMED FOR COMPLETION OF LAND ACQUISITION AND/OR CONSTRUCTION (WITHIN 5 YEARS)	GOVERNMENT OR PUBLIC UTILITY PROGRAMMED FOR COMPLETION OF LAND ACQUISITION AND/OR CONSTRUCTION (BEYOND 5 YEARS)	PRIVATE FUNDING (NO TIME SCHEDULE)
SEWER SYSTEM	S ——— S ——— S	S - - - - S - - - - S	S ····· S ····· S
WATER SYSTEM	POTABLE WATER PW ——— PW ——— PW	PW - - - - PW - - - - PW	PW ····· PW ····· PW
	NON POTABLE WATER NPW ——— NPW ——— NPW	NPW - - - - NPW - - - - NPW	NPW ····· NPW ····· NPW
DRAINAGE SYSTEM	D ——— D ——— D	D - - - - D - - - - D	D ····· D ····· D
TRANSPORTATION SYSTEMS			
ADDITIONAL RIGHT OF WAY AND NEW STREETS	▬ R ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬	▬ R ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬	□ □ □ R □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
IMPROVEMENTS WITHIN EXISTING RIGHT OF WAY TRANSIT CORRIDOR	● ● ● R ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	● ● ● R ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	○ ○ ○ R ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
PUBLIC FACILITY			
SITE DETERMINED (BY PROPERTY LINE)			
SITE UNDETERMINED (IN GENERAL AREA)			
MODIFY EXISTING FACILITY			
CF	- CORRECTIONAL FACILITY	LIB	- LIBRARY
CH	- COMMERCIAL HARBOR	MALL	- PEDESTRIAN MALL
COLL	- COLLEGE	NPW	- NON POTABLE WATER
CY	- CORPORATION YARD	P or PARK	- PARKS AND RECREATION
DSP	- DESALINIZATION PLANT	PS	- POLICE STATION
E. SCH	- ELEMENTARY SCHOOL	PW	- POTABLE WATER
EG	- ENERGY GENERATION	RES	- WATER RESERVOIR
HECO	- FIRE STATION	RM	- RECREATION MARINA
FS	- FIRE STATION	SPS	- SEWAGE PUMP STATION
GB	- GOVERNMENT BUILDING	STP	- SEWAGE TREATMENT PLANT
GC	- GOLF COURSE	SW	- SOLID WASTE FACILITY
HI SCH	- HIGH SCHOOL	TC	- TRANSIT CORRIDOR
HOSP	- HOSPITAL	TCS	- TELECOMMUNICATIONS SYSTEM
IC	- HIGHWAY INTERCHANGE	TS	- TRANSIT STATION
HWY INTER	- HIGHWAY INTERCHANGE	WELL	- WATER WELL
I. SCH	- INTERMEDIATE SCHOOL	WPS	- WATER PUMP STATION
ID	- IMPROVEMENT DISTRICT		
SEWER ID	- IMPROVEMENT DISTRICT		

PREPARED BY: DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU

FIGURE 12



With respect to affordable housing, the Ewa By Gentry project has met all suggested requirements to date and will continue the same effort in the future. Finally, while the Ewa By Gentry Project is not identified as one of the primary employment centers on the Ewa Plain, it has sites specifically available for limited industrial use and commercial use. These sites will provide secondary employment areas.

d. Land Use and Public Facilities

As previously identified, the Development Plan Land Use Map for the Ewa District is shown on Figure 10. In addition, the Development Plan Public Facilities Map is shown on Figure 11. Critical features such as the north-south roadway of the Ewa Region Highway Transportation Master Plan are already identified. In addition, infrastructure requirements for sewer, water and drainage are also identified.

4. County Zoning

The Zoning Map to the City & County of Honolulu specifically identifies detailed land uses allowed on properties. These uses are further identified within the County's Land Use Ordinance. The current county zoning for the proposed action site are shown on Figure 12. Current zoning is AG-2 and it is ultimately desired to change this designation to Limited Industrial and Residential (R-5). The uses allowed under the proposed county zoning were previously identified under this document's project description.

D. LIST OF NECESSARY APPROVALS

Table 4 contains a listing of necessary approvals, government agency and status of approval.

TABLE 4
LAND USE APPROVALS/GOVERNMENT AGENCIES

APPROVAL REQUIRED	GOVERNMENT AGENCY	STATUS OF APPROVAL
Development Plan Approval	City & County Department of General Planning	Not obtained
Change of Zone	City & County Department of Land Utilization	Not obtained
Water Allocation	State Commission on Water Resource Management	Obtained
Fill within Section 404, Waterways	Department of the Army	Not obtained
National Pollutant Discharge Elimination System (NPDES) permits	State of Hawaii Department of Health, Clean Water Branch	Not obtained
Construction Plan approvals	City & County Department of Land Utilization City & County Department of Public Works City & County Department of Transportation Services City & County Department of Parks and Recreation State of Hawaii Department of Transportation State of Hawaii Department of Health	Not obtained

VII. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF HUMANITIES ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF A LONG-TERM PRODUCTIVITY

The proposed action involves the urbanization of $71 \pm$ acres of land into residential and industrial uses. Short-term losses will lead to physical degradation of the environment. The long-term productivity of the area is related to the socio-economic benefits created by a planned community. Specifically, long-term benefits are related to housing and creation of employment centers. A discussion of short-term and long-term considerations is as follows:

A. SHORT-TERM

Construction-related activities will create dust, noise, air pollution, traffic circulation disruption and increased erosion. Even though specific mitigation measures are proposed for each area, these physical actions will result in short-term losses with respect to the environment.

Short-term impacts will also be positive to the human environment by creating construction-related employment opportunities. To emphasize this fact, as previously reported in this document, the cost of traffic-related improvements to implement the Ewa Region Highway Master Plan are in excess of \$110 million.

B. LONG-TERM

Long-term losses with respect to the environment will include permanent demands on infrastructure systems, including water, sewer, telephone and electrical systems. In addition, long-term losses with respect to human environment will also be realized through the permanent demand placed on public services in the form of schools, police, fire and all public services.

Long-term productivity, however, will be enhanced through the creation of employment centers and opportunities surrounded by conveniently-located housing.

VIII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES THAT WOULD BE INVOLVED IN THE PROJECT SHOULD IT BE IMPLEMENTED

Unavoidable impacts to the proposed project include the following:

- A. Physical disruption of the environment through construction-related activities, including grading operations.

Construction activities will also result in impacts to air quality, water quality, noise level and construction-related traffic congestion.

- B. Permanent impacts will be placed on non-renewable resources through increased demands on potable and non-potable water consumption, wastewater disposal, commitments or on drainage systems to carry larger volumes of water related to urbanization and electrical power generation.
- C. There will be an increased unavoidable impact on open space considerations, since majority of the lands will be transformed from vacant or fallow sugarcane fields to an urbanized setting.
- D. There will be an unavoidable impact on traffic from both a local and regional perspective.

The proposed action, consisting of 71 acres of urbanization, is not foreseen to be subject to any "environmental accidents." It is perceived that if impacts which have been identified are mitigated by the proposed methods, environmental accidents will be avoided.

IX. PROBABLE ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

A. UNAVOIDABLE EFFECTS

Disruption caused by physical transformation of land will adversely affect air quality, ambient noise levels and surface water quality. In addition, construction-related activities will also generate related traffic congestion.

Following construction, the project will eliminate the use of the property for agricultural purposes. Traffic volumes on local and regional streets will permanently increase as the projected housing units are occupied. Finally, permanent construction will result in demands on groundwater resources for both potable and non-potable uses, as well as demands on public services and facilities will increase.

B. RATIONALE FOR PROCEEDING WITH THE ACTION

In light of the identified unavoidable adverse environmental effects, it is still proposed to proceed with the project. Even though all adverse effects have been identified, the magnitude of a specific project's adverse environmental effects, as well as cumulative effects, will not create an unacceptable environmental situation. Specifically, short-term adverse environmental effects can be properly controlled by the proposed mitigation measures. Long-term environmental effects, such as increased demands on water systems, have been evaluated and a determination has been produced showing that total demand falls within acceptable limits that will ensure adequate water supply for the project and region. Finally, with respect to adverse effects on public services and facilities, the proposed project, as well as the whole Second City Master Plan, is providing additional services to meet the increased demands.

In summary, even though there are identified adverse environmental effects, the creation of a Second City, including employment opportunities and housings on the Ewa Plain, is a primary objective of State and County planning agencies, as well as the Estate of James Campbell and its developers. The need for housing is well documented and foregoing Ewa Plain Development will create its own adverse environmental effect when housing demands continue to increase and housing stock is not available.

C. ACHIEVEMENT OF COUNTERVAILING BENEFITS THROUGH ALTERNATIVES WHICH AVOID ADVERSE EFFECTS

The countervailing benefits to the proposed action are primarily providing housing and employment opportunities. The alternatives presented in this document include No Action, as well as a Reduced Level of Development.

No-Action would provide none of the countervailing benefits, but all of the adverse environmental effects will be eliminated. A Reduced Level of Activity would provide a reduced level of countervailing benefits with essentially all of the adverse environmental effects on a reduced magnitude. The amount of countervailing benefits achieved would be approximately proportional to the amount of adverse environmental effects realized.

X. SUMMARY OF UNRESOLVED ISSUES

Following is a summary of unresolved issues and the appropriate steps as anticipated how the issue will be resolved prior to commencement of the proposed action.

- A. The subject Development Plan approval is unresolved, and through the preparation and processing of this application, a determination will be reached.
- B. The roadway system is unresolved, due to the fact that actual plans have to move from the planning stage to the construction stage. As this effort continues, the issue will be resolved. However, the developer will be responsible to pay a fair share of highway improvements.
- C. The availability of wastewater treatment plant capacity is unresolved, and through processes such as the currently commissioned Facilities Plan preparation by the City & County of Honolulu Division of Wastewater Management, the capacity issue will be resolved. In addition, administrative hearings will also resolve the issue.
- D. The City & County Department of Parks and Recreation has expressed concerns regarding the location of park facilities related to the current amendment request. Through consultation procedures with this department, the issue will be resolved. Initial consultation has confirmed park area requests, but exact locations must be set.
- E. The Department of Education has expressed serious reservations about the planned elementary school facilities to serve the Leeward area versus the projected enrollment. Currently, there is not enough elementary school space to meet projections. The report also indicates that intermediate school capacity and high school capacity will be exceeded until the Kapolei schools are built. The earliest the Kapolei schools can be built is 1998.
- F. The State of Hawaii Commission on Water Resource management indicates there are insufficient "non-potable cap rock" water supplies to meet the Ewa Plains requirements. Wastewater reuse is proposed as the appropriate alternative.
- G. The Department of General Planning has requested a Fiscal Impact Analysis which is unavailable at this date. However, informal analysis indicates that the proposed project will generate more revenues than costs for both the City and State.

XI. DISCLOSURE OF CONSULTED PARTIES AND THOSE INVOLVED IN PREPARATION OF THE STATEMENT

Table 5 identifies all consulted parties in preparing this Draft Supplemental Environmental Impact Statement. Thirteen (13) parties of thirty-nine (39) consulted provided substantive comments.

Table 6 identifies those parties preparing the statement.

This section also contains the Bibliography of all references, either publicized, non-publicized or personal communications.

TABLE 5
Consulted Parties

ENTITY RECEIVING REQUEST FOR CONSULTATION COMMENTS	RESPONSE (SUBSTANTIVE COMMENTS)	RESPONSE (NO COMMENT)	NO RESPONSE
CITY & COUNTY AGENCIES			
1. Board of Water Supply	X		
2. Building Department		X	
3. City Council			X
4. Department of Housing & Community Development	X		
5. Department of General Planning	X		
6. Department of Land Utilization			X
7. Department of Parks & Recreation	X		
8. Department of Public Works	X		
9. Department of Transportation Services	X		
10. Honolulu Fire Department	X		
11. Honolulu Police Department	X		
STATE AGENCIES			
12. Department of Accounting & General Services		X	
13. Department of Agriculture			X
14. Dept of Business, Economic Development & Tourism & DBEDT-Energy Division		X	
15. Dept of Business, Economic Development & Tourism, Land Use Commission	X		
16. Department of Education	X		
17. Department of Land & Natural Resources, Commission on Water Resource Management		X	
18. Department of Land & Natural Resources, State Historic Preservation Division	X		
19. Department of Land & Natural Resources, Division of Water & Land Development		X	
20. Department of Health			X

ENTITY RECEIVING REQUEST FOR CONSULTATION COMMENTS	RESPONSE (SUBSTANTIVE COMMENTS)	RESPONSE (NO COMMENT)	NO RESPONSE
STATE AGENCIES (cont.)			
21. Department of Health, Environmental Management Div			X
22. Department of Transportation			X
23. Office of State Planning			X
24. University of Hawaii, Environmental Center			X
FEDERAL AGENCIES			
25. U.S. Department of Agriculture			X
26. U.S. Army Corps of Engineers	X		
27. U.S. Department of the Interior, Fish & Wildlife Service			X
PRIVATE AGENCIES			
28. American Lung Association			X
29. Ewa Neighborhood Board No. 23			X
30. Waiānāe Coast Neighborhood Board No. 24			X
31. Waipahu Neighborhood Board No. 22			X
32. Chevron USA Inc			X
33. The Estate of James Campbell			X
34. Oahu Sugar Company, Ltd.			X
35. Hawaiian Independent Refinery, Inc.			X
36. Mr. Roy G. Wickramaratna, Makakilo Community Assoc			X
37. Mr. Bob Clark, President, Ewa Beach Community Assoc			X
38. Ms. Jane A. Ross, Honokai Hale/Nanakai Gardens Community Assoc			X
39. Mr. Tim Tucker, Community Benefit Coordinating Comm	X		
40. GTE Hawaiian Tel	X		

TABLE 6
EIS Preparation

Name	Position/Company	Highest Position	Expertise
Tosh Hosoda	Gentry Hawaii, Limited		Project Management
David B. Bills	Vice President Gray, Hong, Bills & Associates, Inc.	M.S. Civil Engineering	Environmental Engineering
Vijay Kumar	Graduate Engineer Gray, Hong, Bills & Associates, Inc.	M.S. Civil Engineering	Environmental Engineering
Joseph Kennedy	President Archaeological Consultants of Hawaii, Inc.	M.S. Anthropology	Archaeology
Sheila S.L. Chong	Owner Sheila S.L. Chong, Notary Public		Word Processing
Susan H. Jacquelin	Representative Valenti Brothers Graphics, Ltd.		Printing

BIBLIOGRAPHY

1. Helber, Hastert, Van Horn & Kimura, Planners; 1984; Ewa Master Plan; The Estate of James Campbell; Honolulu, Hawaii.
2. The City of Kapolei, A New Direction, Project Update; 1993.
3. Ewa By Gentry Final Environmental Impact Statement; Gray, Hong, Bills & Associates, Inc.; 1988.
4. Personal Communication; 1993; Mr. Tom Nance, P.E., Project Manager, Tom Nance Water Resources; Honolulu, Hawaii.
5. "Community Noise Control for Oahu," Chapter 42, Title 11, Hawaii Administrative Rules.
6. United States Department of Agriculture, Soil Conservation Service; 1972; Soils Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii; U.S. Government Printing Office; Washington, D.C.
7. Belt, Collins & Associates; 1991; Drainage Master Plan for the Gentry Ewa Project; The Gentry Companies; Honolulu, Hawaii.
8. Personal Communication; 1993; Mr. Lee Mansfield, Vice President, GMP Associates; Honolulu, Hawaii.
9. "Air Quality Impact Report, Ewa Marina II," J.W. Morrow, Environmental Management Consultant, 1991, as appended in "Final Environmental Impact Statement for Ewa Marina, Phase II, Ewa, Oahu, Hawaii," Tyrone T. Kusao, Inc., April, 1991.
10. "Naval Station Barbers Point Air Installations Compatible Use Zones (AICUZ) Noise Contours and Supporting Data," Harris, Miller, Hanson, Inc.; 1989.
11. "Botanical Survey, Ewa Gentry Residential Community, Ewa District, Oahu," Charles & Associates; 1988.
12. "Birds and Mammals of the Ewa Gentry Region," A.J. Berger; 1988.
13. Personal Communication; 1993; Mr. Jason Yuen, Senior Planner, City & County of Honolulu Department of Parks and Recreation; Honolulu, Hawaii.
14. Personal Communication; 1993; Mr. Steve Young, Chief Statistician, City & County of Honolulu, Department of General Planning; Honolulu, Hawaii.
15. Personal Communication; 1993; Mr. Lester Chuck, Facilities Support & Services Branch, State of Hawaii Department of Education; Honolulu, Hawaii.
16. Personal Communication; 1993; Philip Baich, Chief Operating Officer, St. Francis Medical Center.
17. Ewa Region Highway Master Plan, 1997 and 2005 Roadway Concepts, Pacific Planning & Engineering; November, 1992.
18. Personal Communication; 1993; John Shimazu, Pacific Planning & Engineering, Inc.
19. Belt, Collins & Associates; 1987; Ewa Water Master Plan; Ewa Plain Water Development Corporation; Honolulu, Hawaii.

BIBLIOGRAPHY (CONT.)

20. **Personal Communication; 1993; Wayne Hamada, Disposal Operating Engineer, City & County of Honolulu, Department of Public Works-Refuse.**
21. **Personal Communication; 1993; Wilma Namumnart, Planning Engineer, City & County of Honolulu, Department of Public Works-Refuse.**
22. **Personal Communication; 1993; David Shiraishi, Refuse Collection Engineer, City & County of Honolulu, Department of Public Works-Refuse.**
23. **Personal Communication; 1993; Mr. Charles Yoshimoto, Planning Section, City & County of Honolulu, Department of Wastewater Management; Honolulu, Hawaii.**
24. **Personal Communication; 1993; Assistant Chief Attilio Leonardi, City & County of Honolulu, Fire Department; Honolulu, Hawaii.**
25. **Archaeological Reconnaissance Report concerning the proposed Ewa Gentry Project in Honouliuli, Oahu, Archaeological Consultants of Hawaii; 1988.**

XII. **COMMENTS AND RESPONSES DURING THE CONSULTATION PROCESS**

The following pages provide comment letters and responses received during the Environmental Impact Statement Preparation Notice Period. The Preparation Notice Publication date in the *OEQC Bulletin* was January 23, 1993. The 30-day comment period ended on February 22, 1993.

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



February 12, 1993

Mr. David Bills, Vice President
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

Subject: Your Letter of January 19, 1993 Regarding the Environmental Impact Statement Preparation Notice (EISPN) and Draft Environmental Assessment (DEA) for the Proposed Changes to the Ewa by Gentry Project, TMK: 9-1-61; Por. 6 and Por. 10, 9-1-69; Por. 3 and Por. 5


Thank you for allowing us to comment on the EISPN and DEA for the proposed Ewa by Gentry project.

We have the following comments:

1. The proposed changes are reflected in the approved Ewa by Gentry water master plan dated August 29, 1991.
2. We understand that the developer will install the complete on-site water system for the project.
3. A water allocation for the project should be obtained from the Ewa Plain Water Development Corporation.

If you have any questions, please contact Bert Kuiuoka at 527-5235.

Very truly yours,


KAZU HAYASHIDA
Manager and Chief Engineer

FRANK F. FAS, Mayor
WALTER O. WATSON, JR., Chairman
MILARCE H. YAMASATO, Vice Chairman
SISTER M. CAULFIELD, CRK, CSF
JOHN W. ANDERSON, JR.
REED JOHNSON
MELISSA Y. LUM
C. MICHAEL STREET
NEZU HIRAIWA, DA
Manager and Chief Engineer

Date Received

File#

To:



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

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

Dear Mr. Hayashida:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

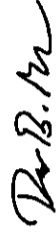
Our office thanks you for your consultation comments regarding the subject project dated February 12, 1993. The Draft Supplemental Environmental Impact Statement will identify the following:

1. The proposed changes increasing project development from 7,120 units to 8,300 units have been approved by your office through your approval of the Ewa By Gentry Water Master Plan, dated August 29, 1991.
2. All specific on-site infrastructure will be installed by the developer.
3. A water allocation and, specifically, source allocation will be obtained from the Ewa Plain Water Development Corporation. For your information, the State of Hawaii Department of Land and Natural Resources Commission on Water Resource Management has identified that supply requirements for the full 8,300 dwelling units will be satisfied by the developer's current allocation, which is sufficient to serve 8,500 units.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc

Stan L. Gu, P.E.
Charles C. Wong, P.E.
Dale B. Baker, P.E.
Roy T. Aoki, P.E.
Beverly G. King, P.E.
Michael H. Hoopes, P.E.
Raymond M. Sano, P.E.

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521 0306
Fax: (808) 531 6018

**BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU**
HONOLULU MUNICIPAL BUILDING
830 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK P. HARRIS
MAYOR

HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT
WILLIAM F. REPULLES
DEPUTY

PB 93-93

January 22, 1993

Date Received: 1/22/93
File: DH/DD

Mr. David Bills, Vice President
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

Subject: Ewa By Gentry
Supplemental Environmental Impact Statement

Thank you for affording us the opportunity of reviewing the
Environmental Assessment for the subject project. However, we do
not have comments to offer at this time.

Very truly yours,

HERBERT K. MURAOKA
Director and Building Superintendent

cc: J. Harada



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Herbert K. Muraoka
Director and Building Superintendent
City & County of Honolulu
Building Department
650 South King St
Honolulu, HI 96813

Dear Mr. Muraoka:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your consultation response dated January 22, 1993, regarding
the subject project. Your response will be included as part of the record and we would
appreciate review of the draft document when it is circulated.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills

DBB:sc

B. Phil Chen, PE
D. Wayne C. Heng, PE
David P. Eas, PE
Amy G. Lee, PE
Beverly G. King, PE
Michael H. Smith, PE
Raymond H. Smith, PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521 0306
Fax: (808) 531 8018

March 1, 1993

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

810 BOUTIQUE STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4627 • FAX: (808) 527-5498



FRANKY PARI
MAYOR



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

March 1, 1993

Sun L. Gray, P.E.
David S.C. Hong, P.E.
David B. Bills, P.E.
Roy T. Aou, P.E.
Beverly G. Ing, P.E.
Michael H. Oguma, P.E.
Raymond M. Sandoz, P.E.

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 523-0306
Fax: (808) 531-8018

Mr. E. James Turse, Director
City & County of Honolulu
Department of Housing and Community Development
650 South King St 5th Flr
Honolulu, HI 96813

Mr. David Bills
Gray, Hong, Bills and
Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Turse:

We thank you for your consultation comments dated February 25, 1993. The Draft Supplemental Environmental Impact Statement will identify that the project will meet all affordable housing requests and specifically as identified in Ordinance 91-17 where 60 percent of the units must be available to families earning up to 140 percent of median family income.

Dear Mr. Bills:

Subject: Ewa by Gentry
Draft Supplemental Environmental Impact Statement

The existing project area is encumbered by a unilateral agreement pursuant to Ordinance 91-17, which requires, in part, that 60 percent of the units be made available to families earning up to 140 percent of median family income. The unilateral agreement must be amended to reflect the additional area to be added to the project boundaries. The developer may contact this office if there are questions relating to the affordable housing requirements.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

Sincerely,

E. James Turse
E. JAMES TURSE
Director

DBB:sc

PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU

530 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANKIE FAR
MAYOR

ROBIN FOSTER
CHIEF PLANNING OFFICER
ROLAND D. LIBBY, JR.
DEPUTY CHIEF PLANNING OFFICER
MH 1/93-150

February 22, 1993

Mr. Tosh Hosoda
Gentry Properties
560 North Nimitz Highway, Suite 301
Honolulu, Hawaii 96817

Dear Mr. Hosoda:

Supplemental Environmental Impact Statement
Preparation Notice for the Proposed
Eva by Gentry Expansion

We have reviewed the subject document and offer the following comments:

1. The Supplemental Draft Environmental Impact Statement (SDEIS) should include a section to discuss the relationship and consistency of the subject project to the following City plans and land use regulations:
 - A. General Plan
 - B. Eva Development Plan Land Use Map
 - C. Eva Development Plan Public Facilities Map
 - D. Eva Development Plan Special Provisions
 - E. Land Use Ordinance
2. The SDEIS should disclose all potential local and cumulative impacts, including a discussion on alternative mitigative measures for the following infrastructure systems:
 - A. Wastewater collection and disposal
 - B. Water
 - C. Transportation
 - D. Drainage
3. With regard to the above item 2.C. Transportation, the SDEIS should disclose how the proposed project's roadway system will be coordinated with the State Department of Transportation's ongoing EIS effort to determine the preferred alignment of the proposed North/South Road.

Mr. Tosh Hosoda
Gentry Properties
February 22, 1993
Page 2

4. With regard to the above item 2.D. Drainage, the SDEIS should address any potential flood hazard from Kalo Gulch which may impact the subject project.
5. The SDEIS should also disclose fiscal impacts (i.e. need for Capital Improvement Programs/Operation and Maintenance for fire, police, schools, etc.) to the City and State.

We hope these comments are helpful in preparing the SDEIS. Should there be any questions, please contact Matthew Higashida of our staff at 527-6056.

Sincerely,

ROBIN FOSTER
Chief Planning Officer

RF:js

cc: Office of Environmental Quality Control
Gray, Hong, Bills & Associates, Inc.



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Robin Foster
Chief Planning Officer
City & County of Honolulu
Planning Department
650 South King St
Honolulu, HI 96813

March 1, 1993

Eva L. Gray, PE
David S. C. Hong, PE
Carol B. Baer, PE
Roy T. Aoki, PE
Severin G. King, PE
Michael H. Myers, PE
Raymond M. Sapiro, PE
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-8018

Dear Mr. Foster:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your consultation comments dated February 22, 1993, regarding the subject project. In response to your comments, we are providing the following information:

1. The Draft Supplemental Environmental Impact Statement will include, under the section entitled "Statement of the Relationship of the Proposed Action to Land Use Plans, Policies and Controls for the Affected Area," a specific discussion regarding the following areas:
 - a. General Plan
 - b. Ewa Development Plan Land Use Map
 - c. Ewa Development Plan Public Facilities Map
 - d. Ewa Development Plan Special Provisions
 - e. Land Use Ordinance
2. The Draft Supplemental Environmental Impact Statement will discuss the specific project, as well as cumulative impact, as well as mitigated measured for infrastructure systems, including the following:
 - a. Wastewater collection disposal
 - b. Water
 - c. Transportation
 - d. Drainage
3. Your office has specifically identified transportation and alignment of the North/South Road which passes through the project boundaries as an item for discussion. To that end, the most current version of the Ewa Region Highway Transportation Master Plan (revised November, 1992) has been obtained and will be summarized and appended to the document.

Mr. Robin Foster
Chief Planning Officer
Page 2
March 1, 1993

With respect to the State of Hawaii Department of Transportation's ongoing EIS effort with respect to North/South Road, we have contacted the State's consultant and have been informed that at this point in time, negotiations are ongoing to determine the scope of work. However, Gentry Development Companies has committed to implementing any and all Ewa Region Highway Transportation Master Plan items in its proportional fair share as described in the Master Plan. Our preliminary findings are that the North/South Road alignment through the Ewa By Gentry Project is, for all practical purposes, set.

4. A Draft Supplemental Environmental Impact Statement will identify that the flood hazard potential from Kalo Gulch is undetermined, since it resides in Zone D of the Flood Insurance Rate Map (FIRM). Nonetheless, all drainage improvements in the area must meet City & County drainage standards and the 1988 Environmental Impact Statement reported the proposed plan which will be summarized.

5. The Draft Supplemental Environmental Impact Statement will identify fiscal impacts of the project. Through the consultation process, we have already received comments from the City & County of Honolulu Fire Department, Police Department and the State of Hawaii Department of Education. The Police Department and the Department of Education have specifically identified impacts to their programs in the form of increased facility and manpower, and these will be specifically included as reported.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc

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



WALTER M. OZAWA
 DIRECTOR
 ALVIN C. AU
 DEPUTY DIRECTOR

February 9, 1993

Date Received: 2/12/93
 File: DH/DB
 To: [Signature]
 Action: VC: 10571 1/08/93

Mr. David B. Bills
 Gray, Hong, Bills & Associates, Inc.
 119 Merchant Street, Suite 607
 Honolulu, Hawaii 96813

Dear Mr. Bills:

Subject: Ewa by Gentry
 Request for Change of 61 Acres from
 Agriculture to Residential
 Draft Supplemental Environmental Impact Statement (DEIS)

We have reviewed the DEIS for the proposed land use changes in the Ewa by Gentry development and make the following comments and recommendation.

The recreational impact and mitigation measures for the 500 units proposed in the 61 acres has not been addressed. The 500 units would generate a population of approximately 1,500 persons and would impact on the public parks already proposed for Ewa by Gentry.

Under the Development Plan Common Provisions, developments are required to provide a minimum of two acres of "active" recreation land per 1,000 persons. Thus, 3.0± acres of park land would be required to support the additional 500 units proposed by the land use change.

The Ewa by Gentry Master Plan, Figure 1, has a future park newly designated on the east makai side of Fort Weaver Road. The establishment of another park in this area cannot be justified by our park standards.

We recommend that you contact Jason Yuen of our Advance Planning Branch at 527-6315 to discuss the park needs and requirements for the residential proposal.

Sincerely,

[Signature]
 WALTER M. OZAWA, Director

WMO:ef

cc: Planning Department

Ewa by Gentry
 David B. Bills
 Roy T. Aoki
 Beverly G. King
 Alvin C. Au
 Raymond M. Sando

March 1, 1993



Gray, Hong, Bills & Associates, Inc.
 CONSULTING ENGINEERS

Mr. Walter M. Ozawa, Director
 City & County of Honolulu
 Department of Parks and Recreation
 650 South King St
 Honolulu, HI 96813

Dear Mr. Ozawa:

Subject: Ewa By Gentry
 Draft Supplemental Environmental Impact Statement
 Consultation Comments

We thank you for your consultation comments regarding the subject project dated February 9, 1993. Your letter specifically identifies that additional housing units would generate an impact on public parks already proposed by the Ewa By Gentry Project. Your letter further identifies that approximately 3.0± acres of park land would be required, in addition to that already proposed to support the land use change. Finally, your office has identified that the future park site on the east makai side of Fort Weaver Road as included in the Environmental Assessment circulated for consultation comments could not be justified.

Based on your comments, our office will be contacting your Advanced Planning Branch to discuss park needs requirements and report these requirements in the Draft Supplemental Environmental Impact Statement. Your subsequent review of the draft document and resulting comments will be of particular value. Gentry Pacific has received a copy of your letter.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

[Signature]
 David B. Bills

DBB:sc

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK TASI
MAIL

C MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER

FELIX B. LIMTICO
DEPUTY DIRECTOR

PRO 93-45

February 19, 1993

Date Received: 2-19-1993

File: DH DB

Mr. David Bills, Vice President
Gray, Hong, Bills and Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

Subject: Environmental Assessment (EA)
Eva Gentry, THK: Various

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

1. Is there only one vehicular access point to the proposed project? If so, is this adequate for the volume of traffic and emergency vehicles?
2. The EA should address the impact of storm water discharge associated with construction activities on water quality of the receiving waters.
3. The EA should also state what structural or non-structural best management practices (BMP) will be provided to control and reduce the discharge of pollutants as outlined in the National Pollutant Discharge Elimination System (NPDES) permit regulations (40 CFR Part 122, Subpart B for municipal storm sewer system).
4. If dewatering activity is anticipated during construction, dewatering permits will be required by the State Department of Health as well as the Department of Public Works, City and County of Honolulu.
5. The developer should establish a buffer zone along the property line of the Honouliuli Wastewater Treatment Plant to minimize the noise and sewage odors impacting the adjacent properties.

Mr. David Bills
Page 2
February 19, 1993

6. At the present time, the Honouliuli Wastewater Treatment Plant cannot support the wastewater requirements for the proposed project.

Should there be any questions, please contact Alex Ho at x4150.

Very truly yours,

C. MICHAEL STREET
Director and Chief Engineer



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. C. Michael Street
Director and Chief Engineer
City & County of Honolulu
Department of Public Works
650 South King St
Honolulu, HI 96813

Dear Mr. Street:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your consultation comments dated February 19, 1993, regarding the subject project. We are providing the following information regarding your comments:

1. The proposed project identifies one vehicular access point to Geiger Road. This access is considered adequate, based on the Department of Transportation Services' requirements and will be a 60-foot right-of-way. This access right-of-way is adequate for emergency vehicles, based on the Department of Transportation Services' standards. For your information, the project immediately below the Ewa By Gentry project is referred to as Laulani and the road providing access to the proposed Development Amendment area can be extended through that project.
2. The Draft Supplemental Environmental Impact Statement will identify the impact of stormwater discharges associated with construction activities on water quality and receiving waters. As your office is aware, Erosion Control Plan and Procedures must be developed in conjunction with construction plans for the project. These Erosion Control Plans and Procedures must further be approved by your office. The obvious impact on water quality will be related to turbidity when soils are exposed and vegetation is not in place.
3. The Draft Supplemental Environmental Impact Statement will identify that one of the necessary permit requirements for the subject project will be a National Pollutant Discharge Elimination System (NPDES) Permit from the State of Hawaii Department of Health, Clean Water Branch. As you are aware, the program is relatively new and parallels, to a great degree, your Erosion Control Plan and Procedures requirements, which have been in place for numerous years. In addition to your requirements, there is a potential for monitoring to quantitatively ensure that the discharge of pollutants and particular turbidity are minimized. In addition, all storm drainage systems using pipe structures must be registered as a part of the NPDES program.

Mr. C. Michael Street
Director and Chief Engineer

Page 2
March 1, 1993

David B. Bills, PE
Charles C. Hong, PE
Gary B. Bills, PE
Ray T. Aoki, PE
Edward G. King, PE
Michael H. Ikema, PE
Raymond M. Sakuma, PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521 0306
Fax: (808) 531 8018

March 1, 1993

4. Due to the location of the project site above the water table and due to the low rainfall on the Ewa Plains, it is not anticipated that activities requiring dewatering will be necessary. Nonetheless, even though dewatering permits are not anticipated, if at a later date such a requirement becomes obvious, all necessary permits will be obtained.

5. Your office has recommended a buffer zone along the property line of the Honolulu Wastewater Treatment Plant to minimize noise and sewage odors impacting adjacent properties. Since the issuance of the request for consultant comments, the developer has eliminated from the Development Plan Amendment request the portion of Limited Industrial Use above Geiger Road and immediately east of the Honolulu Wastewater Treatment Plant facilities. With respect to the proposed Development Plan Amendment area below Geiger Road, industrial use is proposed immediately adjacent to the road to provide a buffer between the treatment plant facilities and residential areas. Therefore, it is anticipated that noise should not be an issue. With respect to odors, it will be reported in the Draft Supplemental Environmental Impact Statement that your odor control program has recently been put on line and will be fully operational in the near future.

6. Your consultation letter identifies that the Honolulu Wastewater Treatment Plant cannot support the wastewater requirements for the proposed project at the present time. Please be advised that the current Amendment area is a minimum of 3 to 4 years away from development, due to additional planning procedures required for implementation. The Ewa By Gentry Project is a part of the Kapolei Area Long-Range Master Plan and actual requirements for wastewater hookups will be properly coordinated.

It is also recognized, and will be identified in the Draft Supplemental Environmental Impact Statement, that the status of the ongoing lawsuit between the City & County of Honolulu and Sierra Club over the Honolulu primary treatment system, as well as evidentiary hearing, will have an impact on this project, as well as all projects on the Ewa Plain.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills

David B. Bills

DBB:sc

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING
415 SOUTH KING STREET
HONOLULU HAWAII 96813



FRANK P. KAHU
DIRECTOR

JOSEPH H. MAGALDI, JR.
DIRECTOR

ADVISORY BOARD
PLANNING DIVISION

TE-257
PL93-1.016

February 23, 1993

FEB 23 1993

Mr. David B. Bills
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

Subject: Ewa by Gentry
Supplemental Environmental Impact Statement
Consultation Comments
TKK: 9-1-69

This is in response to your letter dated January 19, 1993 requesting our comments on the preparation of a supplemental environmental impact statement (EIS) for the subject project.

We have no objections to the proposal to extend the Development Plan Boundaries to incorporate an additional 61 acres of residential and 18 acres of industrial development. These areas had been previously approved by our department in the roadway master plan review.

However, we will need confirmation as to the ultimate use of the roadway servicing this residential area. There have been several proposals which include a termination of the road at Ewa by Gentry's boundary to an extension of the roadway to service the Ewa Marina development. It is our present understanding that the roadway is intended on being dedicated to the City. Depending on the use of this roadway, we may have additional concerns which will include the vehicular carrying capacity of the facility to possible access restrictions in the vicinity of Geiger Road. These issues should be addressed in the supplemental EIS or other supporting documents.

Should you have any questions, please contact Mel Hirayama of my staff at 523-4119.

Sincerely,

JOSEPH H. MAGALDI, JR.
Director

ERIC J. SMITH, PE
DANIEL S. CHAN, PE
DANIEL S. CHAN, PE
DANIEL S. CHAN, PE
DANIEL S. CHAN, PE
DANIEL S. CHAN, PE
DANIEL S. CHAN, PE
DANIEL S. CHAN, PE
DANIEL S. CHAN, PE
DANIEL S. CHAN, PE

March 1, 1993



Gray, Hong, Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Joseph M. Magaldi, Jr., Director
City & County of Honolulu
Department of Transportation Services
650 South King St
Honolulu, HI 96813

Dear Mr. Magaldi:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your consultation comments regarding the subject project dated February 23, 1993. The Draft Supplemental Environmental Impact Statement will identify that your office has reviewed the Ewa By Gentry Master Plan Roadway and provided your approval.

Your consultation letter identifies that you request confirmation of the ultimate use of the roadways serving the residential area and whether it will terminate at the Ewa By Gentry boundary, or extend to the Ewa Marina Development. We will be contacting your office to discuss this matter in more detail and include our discussions in the Draft Supplemental Environmental Impact Statement. In principle, however, Ewa By Gentry has ended the proposed roadway serving the subject Development Plan Amendment area at its project boundary terminus with a cul-de-sac. This design can obviously allow extension of the roadway to serve Laulani, as well as continue to Ewa Marina. Further, to ensure carrying capacity, the owners recognize your desire to have "no parking" on the main access. Finally, the Geiger Road/Access Road intersection will be discussed in the Draft SEIS.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills

DBB:sc

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, SUITE 4425
HONOLULU, HAWAII 96819-1869



PAUL M. PISHI
CHIEF

February 9, 1993

Date Received: FEB 11 1993
File: DH DB
To: _____
Subject: _____

DONALD M CHANG
DIRECTOR
RICHARD R SETO-MOOK
DEPUTY FIRE CHIEF



Gray, Hong, Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Richard R. Seto-Mook
Fire Deputy Chief
City & County of Honolulu
Fire Department
3375 Koapaka St. Ste H425
Honolulu, HI 96819-1869

March 1, 1993

Earl G. Pe
Dennis C. Mung PE
David B. Bills PE
Ray T. Aoki PE
Beverly G. Ing PE
Michael H. Noyes PE
Raymond M. Saito PE
319 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-8018

Dear Deputy Chief Seto-Mook:

Subject: Ewa By Geniry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your consultation comments dated February 9, 1993, regarding the subject project. The Draft Supplemental Environmental Impact Statement will identify that all systems related to firefighting, including access, water supply and building structure, will be in conformance with existing codes and standards.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc

David Bills, Vice President
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

SUBJECT: Ewa By Geniry
Supplemental Environmental Impact Statement
Request for Consultation Comments
in Conjunction With Preparation of
Draft Supplemental Environmental Impact Statement

We have reviewed the subject material provided and foresee no adverse impact in Fire Department facilities or services.

Access for fire apparatus, water supply and building construction shall be in conformance to existing codes and standards.

Should you have any questions, please call Assistant Chief Attilio Leonard of our Administrative Services Bureau at 831-7775.

Sincerely,

Richard R. Seto-Mook
RICHARD R. SETO-MOOK
Fire Deputy Chief

AKL:ny

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

881 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 578-3111



FRANK F. FASI
MAYOR

MICHAEL S. NAKAMURA
CHIEF
HAROLD M. KAWASAKI
DEPUTY CHIEF

Mr. David B. Bills -2- January 29, 1993

Therefore, although we have no objection to the development itself nor to the proposed amendment to add more residential units and acreage and industrial acreage, we must advise that there will be a definite impact on the services, in the form of manpower, and the facilities of the Honolulu Police Department.

OUR REFERENCE CS-1X

January 29, 1993

Mr. David B. Bills, Vice President
Gray, Hong, Bills and Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

Subject: Eva by Gentry
Supplemental Environmental Impact Statement
Request for Consultation Comments
in Conjunction With Preparation of
Draft Supplemental Environmental Impact Statement

At this time, the proposed development area is within Police District 3, which is headquartered in Pearl City.

One thousand one hundred fifty (1,150) additional residential units, sixty-one (61) additional residential acres and eighteen (18) industrial acres to the original Development Plan of 1988 will create a larger area for police officers to patrol.

In spite of the developer providing local and collector roadway improvements to accommodate the increase in traffic, problems with such an increase in residential units, will be inevitable.

Other problems that were cited, such as noise from the Barber's Point Naval Air Station and potential noise and odors from the Honolulu Wastewater Treatment Plant Facilities, will more than likely generate calls for police service.

Further, dust, noise and traffic problems during the construction phase usually cause people who have already moved into the area to complain to this department.

Sincerely,

MICHAEL S. NAKAMURA
Chief of Police

Chester E. Hughes

CHESTER E. HUGHES
Assistant Chief of Police
Support Services Bureau



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Michael S. Nakamura, Chief of Police
Police Department
City & County of Honolulu
801 South Beretania St.
Honolulu, HI 96813

Dear Chief Nakamura:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your letter dated January 29, 1993 regarding the subject project. We are providing the following specific point-by-point response to your letter:

1. Your letter identified that the proposed development is within Police District 3 headquarters in Pearl City. This fact will be reported in the Draft Supplemental Environmental Impact Statement.
2. The Ewa By Gentry Project is one portion of the Kapolei Area Long-Range Master Plan area which is being developed on the Estate of James Campbell. The current Master Plan will be included in the Draft Supplemental Environmental Impact Statement, and recognition of the specific proposed action, as well as recognition of the cumulative effect on services such as your department's will be recognized. It is inherent that development of the Kapolei Area Long-Range Master Plan will produce additional burdens, requiring larger staff and facilities for your efficient operation. It will be further recognized that the tax basis supporting services, such as yours, will increase to offset the increased demand.
3. Gentry Development Companies will be providing local and collector roadway improvements to accommodate the increase in traffic. The local and collector roadway system master plan has been submitted to the City & County Department of Transportation Services, and has been approved. In addition, Gentry Development Companies is a member of the working developers' group creating the Ewa Region Highway Transportation Master Plan. Through efforts such as these, all efforts are being considered to accommodate the increase in traffic and to minimize problems related to the increase in residential units. The proposed planning processes are essentially working plans and are being updated on a regular basis.

Mr. Michael S. Nakamura, Chief of Police
Page 2
March 1, 1993

Eric L. Gray, PE
Dir. S.C. 1023, PE
David B. Bills, PE
Ray T. Ack, PE
Gentry G. Ing, PE
Michael H. Hama, PE
Raymond H. Sisco, PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 531 0306
Fax: (808) 531 8018

4. The Draft Supplemental Environmental Impact Statement will include the current Air Installations Compatible Use Zones (AICUZ) noise contours for the region. The graphic illustrations identifies the project area suitable for residential housing, and this fact will be reported. Nonetheless, it is recognized that certain people are more sensitive to noise than others, and your statement identifying calls for police service are likely, even though modeling indicates differently.

Your office further indicated that due to the proximity of the proposed project to the Honouliuli Wastewater Treatment Plant facilities, calls related to odors may be generated. The Draft Supplemental Environmental Impact Statement will specifically discuss the relationship of the treatment plant to the proposed development. For your information, the industrial portion of the proposed action is proposed as a buffer between the treatment plant facilities and the residential area. In addition, the Honouliuli Wastewater Treatment Plant facilities has recently completed an extensive odor abatement improvement, which is intended to eliminate any odors from leaving the project grounds. This issue will be discussed in the Draft Supplemental Environmental Impact Statement.

5. Your consultation letter cites construction-related activities, including dust, noise and traffic problems as potential concerns resulting in complaints to people who have already moved into the area. The project site is located downwind of the prevailing trades and developments which have already been implemented. It is anticipated this fact by itself will minimize the burden to your department. However, the Draft Supplemental Environmental Impact Statement will identify the procedures which contractors are obligated to follow to minimize your identified concerns.

6. The developers of the Ewa By Gentry Project appreciate that you have no specific objection to the proposed Development Plan Amendment. The owners further recognize that there will be a definite impact on services in the form of manpower and facilities required by the Honolulu Police Department. To that end, the Draft Supplemental Environmental Impact Statement will specifically state the need for increased manpower and facilities for the project site, as well as recognize that the same impact will be true for development of the whole Kapolei Area Long-Range Master Plan.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc

Shel G., PE
Charles C., PE
Dudley B., PE
Raymond M., PE
Steven G., PE
Alcibiades C., PE
Raymond M., PE

March 1, 1993



119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521 0306
Fax: (808) 531 8018

Gray, Hong, Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Gordon Matsuoka
State Public Works Engineer
State of Hawaii Department of
Accounting and General Services
P.O. Box 119
Honolulu, HI 96810

Dear Mr. Matsuoka:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your consultation response dated February 19, 1993, regarding the subject project. Your letter will be added to the Draft Supplemental Environmental Impact Statement for record purposes. We look forward to your review of the draft document when circulated.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc

ROBERT P. TASHIRO
COMPTROLLER
LLOYD I. UMEZASAKI
DEPUTY COMPTROLLER

LETTER # (P) 1094.3



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

Date Received: FEB 22 1993

FEB 19 1993

File: DH DP

Mr. David Bills
Vice President
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

Subject: Ewa By Gentry
Development Plan Boundary Extension
Environmental Assessment

Thank you for the opportunity to review the subject project's Environmental Assessment. We have no comments to offer.

If there are any questions, please have your staff contact Mr. Ralph Yukumoto of the Planning Branch at 586-0488.

Very truly yours,
Ralph Yukumoto
GORDON MATSUOKA
State Public Works Engineer

RY:JY

ESTHER UEDA
EXECUTIVE OFFICER



STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
Room 114, Old Federal Building
Honolulu, Hawaii 96813
Telephone: 587-3823

JOHN WALKER
GOVERNOR

JOHN WALKER
Governor
LAWRENCE H. HOGAN
Director
BARBARA KIM JOHNSON
Deputy Director
BOB EGGER
Deputy Director
DALE YOSHIMIZU
Deputy Director

DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM

Central Pacific Plaza 275 South King Street, 15th Floor, Honolulu, Hawaii 96813
Mailing Address: PO Box 2137, Honolulu, Hawaii 96810
Telephone: (808) 536-2100 Fax: (808) 534-2377

February 18, 1993

February 23, 1993

DLH/DB

Mr. David B. Bills
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

The Department of Business, Economic Development & Tourism is pleased to submit the enclosed comments on the Supplemental Environmental Impact Statement for Ewa by Gentry.

The comments were provided by the Land Use Commission. Questions regarding these comments may be directed to Esther Ueda, LUC Executive Officer, at 587-3826.

Thank you for the opportunity to comment.
Sincerely,

Mufi Hamemann
Mufi Hamemann

Enclosure

Subject: Comments for Preparation of Draft Supplemental Environmental Impact Statement for Ewa by Gentry

We have reviewed the environmental assessment for Ewa Gentry that is the subject of Director's Referral #93-29-E and have the following comments to offer for preparation of the Draft Supplemental Environmental Impact Statement (DSEIS):

- 1) We confirm that the approximately 79 acres involved for the Development Plan Amendment, as identified by TRK: 9-1-61: por. 6 & por. 10 and 9-1-69: por. 3 & por. 5, are within the State Land Use Urban District. This should be noted within the DSEIS. We suggest that the DSEIS include a map showing the DP Amendment area in relation to the State Land Use Districts.
- 2) The 79 acres under consideration are a portion of a district boundary amendment petition approved by a Land Use Commission Decision and Order dated May 8, 1989 for LUC Docket No. A88-627/Gentry Development Company. Approval of the petition reclassified approximately 685 acres from the Agricultural District to the Urban District.
- 3) In this general area, there have been several urban reclassifications including LUC Docket Nos. A89-651/Haseko (Hawaii), Inc.; A81-558/MSH & Associates, Inc.; A88-622/Housing Finance and Development Corporation.
- 4) The tax map keys identifying the acreage under consideration for the Development Plan Amendment should be listed in the DSEIS. Additionally, we suggest that the areas under the Development Plan Amendment be illustrated on a reproduction of the tax map of the area and included in the DSEIS.

We have no further comments to offer at this time.

EU:LA:th

Stanley G. Gentry, PE
David S. C. Hong, PE
David B. Bills, PE
Roy T. Aoki, PE
Beverly G. Fogel, PE
Michael H. Aoyama, PE
Raymond W. Sasaki, PE

March 1, 1993



Gray + Hong + Bills & Associates, Inc.
CONSULTING ENGINEERS

Department of Business, Economic
Development and Tourism
Energy Division
335 Merchant St. Rm 110
Honolulu, HI 96813

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521 0306
Fax: (808) 531 8018

JOHN WAHLE
Governor
MAUI MAHELEMANU
Director
BARBARA ANN STANTON
Deputy Director
RICK EGGETT
Deputy Director
MITSUMI YOSHIMASA
Deputy Director

DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM

ENERGY DIVISION, 335 MERCHANT ST., RM. 110, HONOLULU, HAWAII 96813 PHONE: (808) 527-3800 FAX: (808) 527-3120

February 12, 1993



Gentlemen:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

SUBJECT: Ewa By Gentry Supplemental Environmental Impact Statement
Request for Consultation Comments in Conjunction With
Preparation of Draft Supplemental Environmental Impact
Statement

We wish to inform you that we have no comments to offer on the
subject Draft Supplemental Environmental Impact Statement (DSEIS).
We are returning the DSEIS with no comments.

Thank you for the opportunity to review the document.

cc: Office of Environmental Quality Control

Our office thanks you for your response to consultation comments dated February 12,
1993. Your response will be added to a part of the consultation record and included in the Draft
Supplemental Environmental Impact Statement.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc

RECEIVED FEB 18 1993

DB



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Mufi Hannemann
State of Hawaii
Department of Business, Economic
Development & Tourism
P.O. Box 2359
Honolulu, HI 96804

Dear Mr. Hannemann:

March 1, 1993

B-L G-9) PE
David S.C. Hong PE
David B. Bills PE
Roy T. Aoki PE
Suey G. Ng PE
Michael M. Norman PE
Raymond M. Santos PE

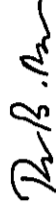
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 531 0306
Fax: (808) 531 8018

Mr. Mufi Hannemann
Page 2
March 1, 1993

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office would like to thank you for your consultation comments dated February 18, 1993. Specifically, the Land Use Commission, operating under your jurisdiction, provided detailed consultation comments, dated February 4, 1993. In response to the detailed comments, we are providing the following responses:

1. A map showing the Development Plan Amendment area in relation to the State Land Use Districts will be included in the Draft Supplemental Environmental Impact Statement. This mapping will show areas previously identified in the 1988 Environmental Impact Statement, as well as the currently proposed Development Plan Amendment sites.
2. The Land Use Commission has specifically cited the Decision & Order reclassifying the subject project lands from Agricultural to Urban, and through inclusion of this letter in the Supplemental Environmental Impact Statement, this fact will be documented.
3. Additional areas in the general project area that have been reclassified include lands controlled by Haseko (Hawaii, Inc.) and the Housing Finance and Development Corporation. This fact will be documented in the Environmental Impact Statement by inclusion of your consultation comments.
4. A tax map exhibit will be included in the Draft Supplemental Environmental Impact Statement showing the currently proposed Development Plan Amendment areas, as well as that previously identified in the 1988 Environmental Impact Statement. Tax Map keys will further be referenced in the document.

CHARLES TOGUCHI
SUPERINTENDENT



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2188
HONOLULU, HAWAII 96818

Mr. David Bills February 11, 1993

-2-

The developer has already provided a fair-share contribution to the DOE by donating a six acre school site to the State. The pro rata share was based on the original 7,120 residential units. Due to the impact of additional 1,180 units, the DOE will seek additional contributions from the developer for needed school facilities.

Should there be any questions, please call the Facilities Branch at 737-4743.

Sincerely,

Charles T. Toguchi
Charles T. Toguchi
Superintendent

CTT:hy

cc: A. Suga, Asst. Supt.
I. Chung, LDO
H. Masumoto, OSP
E. Ueda, DBED

February 11, 1993

FEB 22 1993

File: DF 010

Mr. David Bills, Vice President
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

SUBJECT: Eva By Gentry
Draft Supplemental Environmental Impact Statement

Our review of the subject draft supplemental environmental impact statement indicates that an increase of 1,150 residential units from 7,150 units to 8,300 units will have a significant enrollment impact on the public schools in the area. Our letter to you dated January 6, 1988, based the enrollment projections on 7,120 residential units generating 900-1450 students in grades K-6, 200-300 students in grades 7-8, and 350-500 students in grades 9-12.

Based on 8,300 residential units, our new projections are:

School	Grades	Projected Students	Increase
Elementary	K-6	1826	426
Intermediate	7-8	415	115
High School	9-12	664	164

The Department of Education (DOE) cannot assure the availability of classrooms to accommodate the additional 705 students from this development. Some of the schools in the service area may be faced with a shortage of classrooms. The projected opening of a new Eva Gentry Elementary School in 1995 will alleviate some of the enrollment impact in the area.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

March 1, 1993

David B. Bills, PE
Doreen G. Hong, PE
David H. Bills, PE
Ray T. Aoki, PE
Doreen G. Hong, PE
Ala David H. Aoki, PE
Raymond M. Sato, PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 521-8018

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

Dear Mr. Toguchi:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your consultation comments dated February 11, 1993 regarding the subject project. Your letter summarizes projected school enrollment based on the 1988 EIS and the currently proposed 8,300 residential units. Your data will be specifically included within the Draft Supplemental Environmental Impact Statement.

The total increased enrollment from the 1988 Environmental Impact Statement to the current projection will result in 705 additional students attending elementary, intermediate and high school. The Gentry Development Company recognizes the additional pressure which will be placed upon the school system, and fully anticipates to provide its fair share contribution to the State. With this commitment, project representatives will be working with your facilities branch or your designated representatives as the planning process successfully proceeds.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills

DDB:sc

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DAVID B. BILLS
ROY T. AOKI
GENTRY G. HONG
MICHAEL H. HONAN
RAYMOND M. SARGENT

March 1, 1993



Gray, Hong, Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Manabu Tagomori
Manager-Chief Engineer
State of Hawaii Department of Land
and Natural Resources
Division of Water and Land Development
P.O. Box 373
Honolulu, HI 96809

Dear Mr. Tagomori:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your consultation letter dated February 3, 1993 and your letter will be added to the Draft Supplemental Environmental Impact Statement for the record. We look forward to review of the draft document when circulated.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER AND LAND DEVELOPMENT
P. O. BOX 373
HONOLULU, HAWAII 96809
FEB - 3 1993

STATE OF LAND AND NATURAL RESOURCES
SERVICES
JOHN P. SEPPER, II
DONALD L. HUNTER
AGRICULTURE DEVELOPMENT PROGRAM
ARCHAEOLOGICAL RESOURCES
CIVIL ENGINEERING
CONSTRUCTION AND
RESOURCES ENFORCEMENT
CONTRACTS
ENVIRONMENTAL
HISTORIC PRESERVATION PROGRAM
LAND MANAGEMENT
PLANNING AND
WATER AND LAND DEVELOPMENT

FEB 5 1993

Manabu Tagomori

Mr. David B. Bills
Vice President
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

Ewa By Gentry Supplemental Environmental
Impact Statement Request for Consultation Comments
in Conjunction with Preparation of
Draft Supplemental Environmental Impact Statement

We have reviewed the Environmental Assessment for the subject project and have no comments to offer at this time.

Sincerely,

Manabu Tagomori
MANABU TAGOMORI
Manager-Chief Engineer

GA:lc

Ewa By Gentry PE
 David B. Bills PE
 Raymond M. Surud PE
 Beverly G. King PE
 Raymond M. Surud PE
 119 Merchant Street, Suite 607
 Honolulu, Hawaii 96813
 Telephone: (808) 521-0306
 Fax: (808) 531-8018

March 1, 1993



Gray + Hong + Bills & Associates, Inc.
 CONSULTING ENGINEERS

Mr. Don Hibbard, Administrator
 State of Hawaii
 Department of Land and Natural Resources
 State Historic Preservation Division
 33 South King St 6th Flr
 Honolulu, HI 96813

Dear Mr. Hibbard:

Subject: Ewa By Gentry
 Draft Supplemental Environmental Impact Statement
 Consultation Comments

Our office thanks you for your consultation comments regarding the subject project dated February 18, 1993. Your letter states that the additional acreage to be added to the Ewa By Gentry Project will have "no effect" on significant historic sites. As you will recall, an archaeological reconnaissance was prepared in conjunction with the 1988 Environmental Impact Statement which provided the same conclusion, and your office confirmed the findings of our consultant.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills

DBB:sc

WILLIAM W. FATT, CHIEF/EXECUTIVE
 BOARD OF LAND AND NATURAL RESOURCES
 DIVISIONS
 JOHN P. LUPPULA, 3
 DONA L. HANAUKE
 AQUACULTURE DEVELOPMENT
 PROGRAM
 AQUATIC RESOURCES
 CONSERVATION AND
 ENVIRONMENTAL AFFAIRS
 CONSERVATION AND
 RESOURCES ENFORCEMENT
 DIVISIONS
 FORESTRY, CONSERVATION
 AND PRESERVATION
 DIVISION
 LAND MANAGEMENT
 STATE PARKS
 WATER AND LAND DEVELOPMENT
 LOG NO: 7313
 DOC NO: 9302JC10



STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 STATE HISTORIC PRESERVATION DIVISION
 33 SOUTH KING STREET, 6TH FLOOR
 HONOLULU, HAWAII 96813

February 18, 1993

Mr. David Bills, Vice President
 GRAY, HONG, BILLS & ASSOCIATES, INC.
 119 Merchant Street, Suite 607
 Honolulu, Hawaii 96813

Dear Mr. Bills:

SUBJECT: Ewa By Gentry Supplemental Environmental Impact Statement Request
 for Consultation Comments in Conjunction With
 Preparation of Draft Supplemental Environmental Impact Statement
 Honolulu, Ewa, O'ahu
 TMK: 9-1-61: por. 10 & por. 69-1-69: por. 3 & por. 5

Thank you for the opportunity to review the proposed changes to a Supplemental Environmental Impact Statement. Since the approximately 79 acres of land proposed for re designation are currently cultivated with sugarcane, the presence of significant historic sites is unlikely due to the fact that sugarcane cultivation severely disturbs land surfaces, making the survival of significant historic sites extremely unlikely. Therefore, we believe that the additional acreage to be developed for the Ewa by Gentry project at the above parcels will have "no effect" on significant historic sites.

Sincerely,

DON HIBBARD, Administrator
 State Historic Preservation Division

JC:amk

FEB 23 1993

Date Received

File: DA 00

Bruce L. Gray, P.E.
C. Scott Hays, P.E.
David B. Bills, P.E.
Roy T. Aoki, P.E.
Beverly G. King, P.E.
Michael H. Aguma, P.E.
Ryhmard M. Santos, P.E.

March 1, 1993



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Rae M. Loui, Deputy Director
State of Hawaii Department of Land
and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809

John C. Linn, M.D.
Robert S. Maata
Richard H. Cole, P.E.
Guy E. Furuoka
J. Douglas Inc. Inc.
RAE M. LOUI, P.E.
DIRECTOR



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 621
HONOLULU, HAWAII 96809

FEB 23 1993

Mr. David Bills, Vice President
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

Ewa By Gentry Project
Supplemental EIS Request for Comments

Our understanding is that the full water requirements of the Ewa By Gentry project will have been met under current arrangements made between the Honolulu Board of Water Supply and the Ewa Plain Water Development Corporation. We note that the supply requirements for the full 8500 dwelling units will be satisfied by the developer's current allocation, which should be sufficient to service 8500± units.

Sincerely,

Rae M. Loui
RAE M. LOUI
Deputy Director

PH:ky

Dear Mr. Loui:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your consultation comments dated February 23, 1993, regarding the subject project. Your comments identifying that supply requirements for 8,300 dwelling units fall within the developer's current allocation of 8,500 units will be identified in the Draft Supplemental Environmental Impact Statement.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96854-440



February 1, 1993

REPLY TO
ATTENTION OF

Planning Division

Mr. David B. Bills
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

DA/DB

Dear Mr. Bills:

Thank you for the opportunity to review and comment on the Environmental Assessment for Ewa Gentry, Oahu. The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

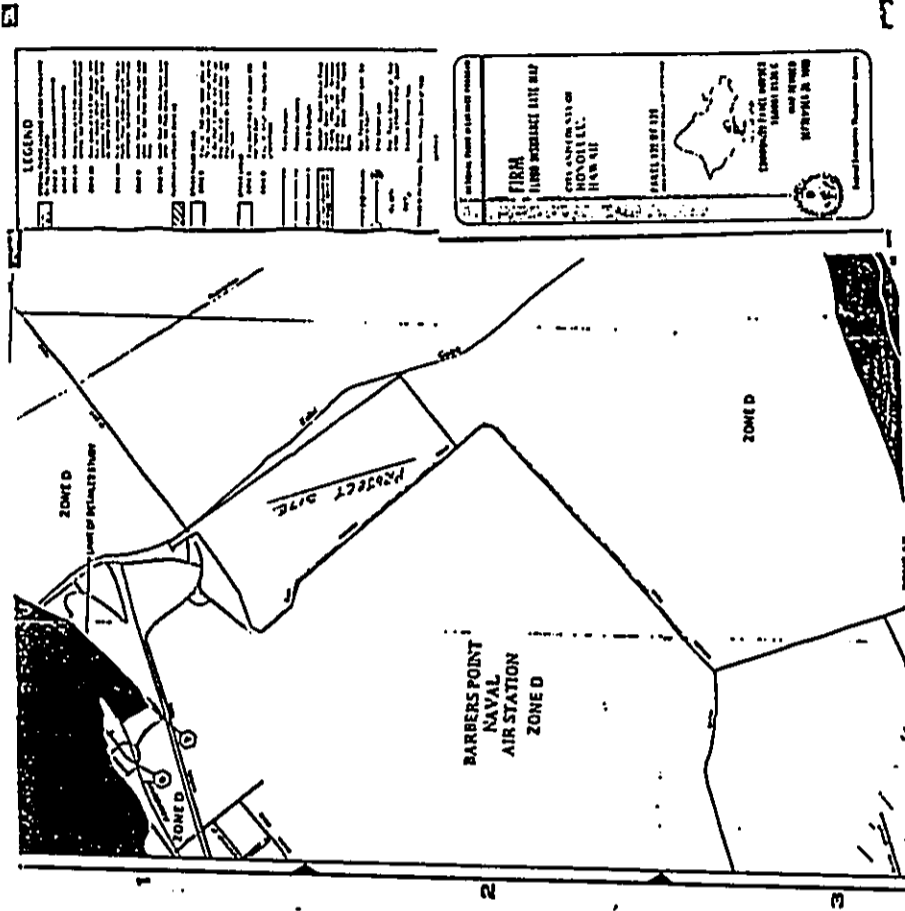
a. A DA permit would be required for the placement of fill or grading within Kaloi Gulch. For further information regarding permit requirements, please contact the Operations Division at 438-9258 and refer to file number F093-028.

b. According to the enclosed Federal Emergency Management Agency's Flood Insurance Rate Map, panel 150001-0135-C, dated September 28, 1990, the project area is located in Zone D (areas in which flood hazards are undetermined).

Sincerely,

Kisuk Cheung
Kisuk Cheung, P. E.
Director of Engineering

Enclosure





DEPARTMENT OF THE ARMY
 U. S. ARMY ENGINEER DISTRICT, HONOLULU
 BUILDING 230
 FT. SHAFTER, HAWAII 96859 5400
 January 25, 1993

Date Received JAN 26 1993

REPLY TO
 ATTENTION OF:
 Planning Division

File: DK DD
CAUSE 1/26 To
confirm they had
DEED THAT LOCATION
MAPS

Mr. David Bills, Vice President
 Gray, Hong, Bills & Associates, Inc.
 119 Merchant Street, Suite 607
 Honolulu, Hawaii 96813

Dear Mr. Bills:

Thank you for the opportunity to review and comment on the Supplemental Environmental Impact Statement (SEIS) for the Ewa by Gentry Project, Oahu, Hawaii. Due to the lack of information, tax map keys, and project location maps, we are unable to provide any comments at this time. Once the draft SEIS has been completed, we will provide you with pertinent permit requirements and flood hazard information.

Sincerely,

[Signature]
 Kieuk Cheung, P.E.
 Director of Engineering



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Kisuk Cheung, P.E.
Director of Engineering
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, HI 96858-5440

Dear Mr. Cheung:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your consultation comments dated February 1, 1993, regarding the subject project. For EIS documentation purposes, we would like to identify that your original response to our office dated January 25, 1993, stated that due to the lack of information, tax map keys and project maps, you were unable to provide comments at that time. Based on our immediate follow-up, we provided all appropriate maps, and your subsequent response was dated February 1, 1993.

We wish to provide the following responses:

- a) A portion of Kaloi Gulch passes through the proposed project site. It is recognized that any project requirements for fill within this gulch comes under your jurisdiction and a Department of the Army Permit would be required. The list of necessary approvals identified in the Draft Supplemental Environmental Impact Statement will specifically identify this permit requirement. For your information, the 1988 Environmental Impact Statement identified that groundwater runoff crossing the Ewa By Gentry Project related to Kaloi Gulch was intended to be routed through the golf course directly east of the proposed project site. Nonetheless, even with implementation of this drainage plan for the project, it is still recognized that filling any portion of a drainage course identified by rivers, lakes and canals and U.S.G.S mapping comes under your jurisdiction. In this specific case, the water course of Kaloi Gulch is identified as an intermittent stream and passes through the proposed project site.
- b) The fact that the project site is identified as an area located in zone D or the Flood Insurance Rate Map (FIRM) will be identified. Zone D areas are areas which flood hazards are undetermined.

S. L. G. W. FE
D. A. S. C. H. O. N. G. FE
D. A. V. I. D. B. B. I. L. L. S. FE
R. O. Y. T. A. O. M. FE
B. E. N. E. T. T. Y. G. E. N. E. R. FE
K. I. S. U. K. C. H. E. U. N. G. FE
R. E. I. J. O. N. M. S. H. I. M. O. FE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521 0306
Fax: (808) 531 8018


March 1, 1993

Mr. Kisuk Cheung, P.E.
Director of Engineering
Page 2
March 1, 1993

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc

GTE Hawaiian Tel

Beyond the call

February 12, 1993

GTE Hawaiian Telephone Company, INCORPORATED
P.O. Box 2200, Honolulu, HI 96811-0200



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Winslow I. Tanabe
Operations Manager - OSP Engineering
GTE Hawaiian Telephone Company, Inc.
P.O. Box 2200
Honolulu, HI 96841

ATTENTION: Mr. David Bills, Vice President

SUBJECT: EWA BY GENTRY - SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

Thank you for the opportunity to review and comment on the Supplemental Environmental Impact Statement for the proposed changes to the Ewa by Gentry Project.

GTE Hawaiian Tel, HTC, does not foresee any problems in providing telecommunication services to and within this development. However, please be aware that HTC maintains a direct-buried Signal Corp. cable within the Geiger Road right-of-way. This cable may need to be relocated, depending on what the plans are for the improvement of Geiger Road.

If you have any questions, please call Mark Taosaka at 834-6328.

Mark Taosaka

Winslow I. Tanabe
Operations Manager -
OSP Engineering

MKT/dhv (9307.1tr)

cc: M. Taosaka
K. Ayano
L. L. Hartshorn
M. Matsuda
A. Mail

Date Received _____
File: DK DB

March 1, 1993

Barry L. Gray, PE
Charles C. Hong, PE
David B. Bills, PE
Roy T. Aoki, PE
Beverly G. Pugh, PE
Michael H. Norman, PE
Raymond M. Sarno, PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-8018

Dear Mr. Tanabe:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Our office thanks you for your consultation letter regarding the subject project, dated February 12, 1993. Your office has identified that Hawaiian Telephone Company maintains a direct-buried Signal Corp. cable within the Geiger Road right-of-way, and this cable may need to be relocated, depending on improvement plans for Geiger Road. This issue is considered a design detail, and upon successful completion of the various planning processes, any and all adjustments will be made through preliminary and final design. Your comments will be included in the Draft Supplemental Environmental Impact Statement for record purposes.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc

**EWA BEACH COMMUNITY BENEFITS
COORDINATING COMMITTEE**

February 18, 1993

Mr. David Bills
Gray, Hong, Bills & Associates
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

Subject: Ewa Gentry Draft Environmental Impact Statement

Thank you for recognizing the 'Ewa Beach Community Benefits Coordinating Group, and allowing us the opportunity to respond to your Environmental Impact Statement (EIS) for the expansion of the number of residential units for the Ewa by Gentry project.

Our group was formed one year ago to address the impacts of development on the 'Ewa Beach community, and to ensure that the existing community and the new communities will benefit in social, economic and recreational facilities and programs.

As for the EIS, the Coordinating Group will focus its attention on Community Benefits, and leaves the environmental and technical review to the appropriate agencies.

The expansion of the Ewa by Gentry project leaves us with some concerns in regards to the social impact to the surrounding area. We would specifically like to know your benefits plan for the 'Ewa Beach community, and how you plan to deal social impacts such as the need for additional parks, facilities, and programs for the growing area.

The 'Ewa Beach Community Benefits Coordinating Group would be happy to meet with you in the near future to go over your community benefits plan, or help you formulate a plan if one hasn't already been done.

Sincerely yours,



Tim Tucker
Chairperson
'Ewa Beach Community Benefits Coordinating Group



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Tim Tucker, Chairperson
Ewa Beach Community Benefits Coordinating Group
c/o 91-489 Pupū St
Ewa Beach, HI 96706

Dear Mr. Tucker:

Subject: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

We thank you for your consultation comments dated February 18, 1993, regarding the subject project. As stated in your letter, we understand your group was formed to specifically evaluate impacts of development to ensure that the existing community and new communities will benefit in social, economic and recreational facilities and programs. The proposed Development Plan Amendment will increase the housing stock developed by Ewa By Gentry from 7,120 to 8,300 units. In conjunction with this expansion, Ewa By Gentry will be increasing the area set aside for parks, facilities and programs for the area. During this consultation phase of the Environmental Impact Statement preparation, the Department of Parks & Recreation of the City & County of Honolulu has specifically stated the need for more park area. In addition, the Department of Education has stated the need for increased educational facilities.

With respect to your invitation to meet and review the Ewa By Gentry Community Benefits Plan, we would like to inform you that on March 16, 1993 an Ewa Area Planning Forum has been scheduled by the Department of General Planning at 7:30 PM at the Ewa Beach Elementary School at 91-950 North Road. This meeting is intended to give an overview on all proposed Development Plan Amendments currently under consideration. This meeting will specifically seek input by groups such as your own. Gentry Development Companies will have representatives at this particular meeting.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc

CO 91-489 PUPU STREET
EWA BEACH HAWAII 96706

Bill G. FE
Charles M. FE
Dane B. FE
Roy T. FE
Beth G. FE
Michael H. FE
Raymond M. FE

March 1, 1993

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 531 0306
Fax: (808) 531 8018

FEB 23 1993

DA DB



STATE OF HAWAII
DEPARTMENT OF HEALTH

P. O. BOX 3378
HONOLULU, HAWAII 96808

In reply, please refer to:

April 2, 1993

93-014/epo

APR 6 1993

Mr. David Billis
Vice President
Gray, Hong, Billis & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

3317
DK DB

Dear Mr. Billis:

Subject: Request for Consultation Comments
Environmental Assessment
Ewa By Gentry

Thank you for allowing us to review and comment on the subject document.
We have the following comments to offer:

Water Pollution

A National Pollutant Discharge Elimination System (NPDES) permit is required for any discharge to water of the State including the following:

1. Storm water discharges relating to construction activities for projects greater than five acres;
2. Storm water discharges from industrial activities;
3. Construction dewatering activities;
4. Cooling water discharges less than one million gallons;
5. Ground water remediation activities; and
6. Hydrotesting water.

Any person wishing to be covered by the NPDES general permit for any of the above activities should file a Notice of Intent with the Department's Clean Water Branch at least 90 days prior to commencement of discharge to waters of the State.

Any questions regarding this matter should be directed to Mr. Denis Lau of the Clean Water Branch at 586-4309.

Mr. David Billis
April 2, 1993
Page 2

Noise and Radiation

1. Potential noise problems may occur in areas designated for mixed use. Integration of agricultural, industrial, and commercial land uses next to residential areas will result in negative environmental impacts. Mitigative measures, toward minimizing these impacts must be implemented within any planned mixed use areas.
2. Noise associated with the adjacent golf course may adversely impact project residents. In the past, the Department of Health has received numerous noise complaints from nearby residents concerning the use of tractors, mowers, and other equipment during early morning hours at golf courses.
3. Activities associated with the construction phase of the project must also comply with the provisions of Administrative Rules, Chapter 43, Community Noise Control for Oahu.
4. Heavy vehicles travelling to and from the project site must comply with the provisions of Administrative Rules, Chapter 42, Title 11, Vehicular Noise Control for Oahu.

If you should have any questions on this matter, please call Jerry Haruno, Environmental Health Program Manager, Noise and Radiation Branch at 586-4701.

Wastewater

The subject project is located within the County sewer service system. As the area is sewered, we have no objections to the proposed project, provided that the project is connected to the public sewers.

The developer should work closely with the County to assure the availability of additional treatment capacity and adequacy for the project. Non availability of treatment capacity will not be an acceptable justification for use of any private treatment works.

If you should have any questions on this matter, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4290.

Very truly yours,

John C. Lewis, M.D.
JOHN C. LEWIS, M.D.
Director of Health

c: Clean Water Branch
Wastewater Branch
Noise and Radiation Branch



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

Brian L. Gray, PE
Dwight S. C. Hong, PE
David B. Bills, PE
Roy T. Aoki, PE
Beverly G. Ing, PE
Michael H. Nagata, PE
Raymond M. Sano, PE
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-8018

John C. Lewin, M.D., Director
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, HI 96801

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement
Consultation Comments

Dear Dr. Lewin:

Thank you for your consultation comments dated April 2, 1993 and received in our office on April 6, 1993. However, your comments were received after the appropriate deadline and after the Draft Supplemental Environmental Impact Statement was printed. We therefore are discussing after the fact your consultation comments and identifying which information was put in the Draft Supplemental Environmental Impact Statement. The following is a summary of our comments:

1. **Water Pollution** - The Draft Supplemental Environmental Impact Statement identified that National Pollutant Discharge Elimination System permits are required from your office, and as of this date, none have been obtained. Your consultation item identified 6 areas where potential NPDES permits are necessary. Of the permits indicated, the one for storm water discharges relating to construction activities is the most likely permit required.
2. **Noise and Radiation** - The Draft Supplemental Environmental Impact Statement discussed potential problems which may occur between noise levels associated with industrial activities and noise levels generally acceptable in residential areas. Potential mitigative measures including air-conditioning, and/or larger separations between mixed-use activities, were identified in the Draft Supplemental Environmental Impact Statement.
The golf course will be in place prior to development of residential properties adjacent to golfing facilities. Golf course views are usually a highly desirable feature of home ownership. However, appropriate disclosure seems to be the most likely mitigative measure to minimize complaints from residents regarding the use of golf course maintenance equipment.

John C. Lewin, M.D.
May 17, 1993
Page 2

The Draft Supplemental Environmental Impact Statement identifies that all necessary permits must be obtained and compiled with. This would apply to permits related to community noise control, as well as permits related to vehicular noise control.

3. **Wastewater** - All of the Ewa By Gentry Project will be connecting to the Honolulu Wastewater Treatment Plant system. At the appropriate times, sewer adequacy requests will be prepared and submitted to the County. The subject project will not propose any private sewage treatment plant facility as a permanent method for wastewater treatment and disposal.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc
2312-DEIS

XIII. **COMMENTS AND RESPONSES DURING THE DRAFT ENVIRONMENTAL
IMPACT STATEMENT COMMENT PERIOD**

The following pages provide review letters received during the Draft Supplemental Environmental Impact Statement Review Period. The Draft Supplemental Environmental Impact Statement was published in the *OEQC Bulletin* on March 23, 1993 and the 45-day comment period ended on May 7, 1993.

5/93-114

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU

100 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK P. DEAN
DIRECTOR

DONALD A. CLEGG
DIRECTOR
1400 KALANIANA'OLANI DRIVE
HONOLULU, HI 96813
93-01831 (DT)

May 3, 1993

TO: ROBIN FOSTER, DIRECTOR
PLANNING DEPARTMENT

ATTN: MATT HIGASHIDA

FROM: DONALD A. CLEGG, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR
FOR EWA BY GENTRY

We have reviewed the DEIS for the above project, which encompasses a 71-acre site consisting of a 10-acre industrial area and 61-acre residential area. We offer the following comments for the proposal:

1. Drainage
A plan for the open drainage channel through the Ewa by Gentry golf course should be included in the Final EIS. Comments pertaining to the channel from the State Department of Health and DFW should also be included in the Final EIS.
2. Special Management Area Use Permit
The project is not within the Special Management Area.

Thank you for the opportunity to comment. If you have any questions, please contact Dana Teramoto of our staff at 523-4640.

Very truly yours,

Donald A. Clegg
DONALD A. CLEGG
Director of Land Utilization

DAC:ok
6/1/93-djt

RECEIVED
MAY 4 AM 11:07
PLANNING DEPT.
C&C HONOLULU



Gray, Hong, & Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Donald A. Clegg, Director
Department of Land Utilization
City & County of Honolulu
650 South King Street, 7th Floor
Honolulu, HI 96813

May 17, 1993

Boon L. Gray, PE
David S. C. Hong, PE
David B. Bills, PE
Roy T. Aoki, PE
Beverly G. Ing, PE
Michael H. Ngata, PE
Raymond M. Sato, PE
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 521-6018

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Clegg:

We have received a copy of your memorandum dated May 3, 1993 to the Chief Planning Officer of the Planning Department. In response to your memorandum, we are providing the following information:

1. The subject Draft Supplemental Environmental Impact Statement specifically is for the purpose of identifying 61 acres of additional residential area, as well as 10 acres of industrial area, and the inclusion of approximately 670 units within the 932-acre site identified in the 1988 Environmental Impact Statement. Since the 1988 Environmental Impact Statement included a complete appendix describing the open channel through the Gentry Golf Course area in detail, we have relied on the provisions of the Chapter 343 (H.R.S.), and the information presented in the previous document is still relevant. Therefore, it has not been included in the Supplemental document. We have the complete 1988 Environmental Impact Statement, which we will provide to your office should you require this information.
2. We thank you for your identification that the project site is not within the Special Management Area.

Your comment letter, as well as our response letter, will be included in the Final Environmental Impact Statement for record purposes. Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc
2312-DEIS

CITY AND COUNTY OF HONOLULU

DEPARTMENT OF PUBLIC WORKS

150 SOUTH BEECH STREET HONOLULU, HAWAII 96813

67 0 52

C. MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER

RECEIVED
93 MAY 7 PM 1:50
PLANNING DEPT.
C&C HONOLULU

April 26, 1993

FRANK PATE
4198

MR. DONALD A. CLEGG
PAGE 2
APRIL 26, 1993

Should you have any questions, please call Mr. Alex Ho, Environmental Engineer, at 44350.

C. Michael Street

C. MICHAEL STREET
Director and Chief Engineer

MEMORANDUM

TO: MR. DONALD A. CLEGG, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: C. MICHAEL STREET, DIRECTOR AND CHIEF ENGINEER

SUBJECT: DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (DSEIS)
EWA BY CENTEX
TRK:9-1-89:POR...6

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

1. The roadway network should be extended along the entire frontage of the development.
2. The roadway network should also provide another access to Geiger Road or another outlet.
3. All roadways should be improved in accordance with City standards and should comply with the Americans with Disabilities Act (ADA).
4. Pending litigation notwithstanding, it is our policy that we will utilize all available capacity at the Honolulu Wastewater Treatment Plant (HWTTP) to support new housing developments on the Leeward Oahu areas and continue to allow new sewer connections until the current operating limits set for wastewater treatment plants have been reached. Unless the court reaches a decision that will force the City to end this practice, we will approve as many new sewer connections as possible to the HWTTP on a case-by-case basis.



Gray + Hong + Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. C. Michael Street
Director and Chief Engineer
Department of Public Works
City & County of Honolulu
650 South King Street, 11th Floor
Honolulu, HI 96813

May 17, 1993

Brian L. Gray, P.E.
David S. C. Hong, P.E.
David B. Bills, P.E.
Ray T. Aoki, P.E.
Beverly G. King, P.E.
Michael H. Ogema, P.E.
Raymond M. Sano, P.E.

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-8018

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Street:

We have received a copy of your memorandum addressed to Donald Clegg, Department of Land Utilization, dated April 26, 1993. It is understood your memorandum was to be directed to the Chief Planning Officer, since they are the approving agency for the subject Environmental Impact Statement. We are providing the following responses to the comments identified in your April 26, 1993 correspondence:

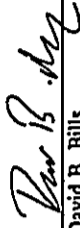
1. The developers and consultants are currently developing detailed plans for roadway improvements along Geiger Road, as well as providing design work for access points to Geiger Road. The plans are also being routed through your office for review and approval. The developers will provide roadway improvements identified in comments 1 and 2 of your letter.
2. See response to Item 1.
3. A roadway system will be developed in accordance with City standards and will include provisions to comply with the Americans with Disabilities Act (ADA). All construction plans will be routed through your office to allow detailed review of the final designs.
4. Your office identified that it is the Department's policy to utilize the available capacity in the Honolulu Wastewater Treatment Plant to support new housing developments on the Leeward Oahu areas until to the current operating limits set for the wastewater treatment plant have been reached. It is our understanding that you currently have facilities for 38 MGD discharge via the Honolulu ocean outfall. Gentry Companies has been providing housing projections directly to your office. Their current projections identify 8,300 units and also identify the time frame for proposed hookups. This information is being utilized by your office to evaluate all future

Mr. C. Michael Street
May 17, 1993
Page 2

connections. We further understand you are conducting a Facilities Plan to identify capacity requirements between the Year 1995 and the Year 2005.

Thank you for your comments regarding the Draft Environmental Impact Statement and your comment letter, as well as this response, will be included in the Final document for record purposes. Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc
2312-DEIS

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU



COPY

MAY 6 1993

Reserve

File: DHDP

May 4, 1993

TO: ROBIN FOSTER, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

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

SUBJECT: DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (EIS)
FOR THE PROPOSED EWA BY GENTRY PROJECT, TMK: 9-1-69;
PORTION 6, EWA_OAHU

Thank you for the opportunity to comment on the Draft Supplemental EIS for the proposed Ewa By Gentry project. Our comments of February 12, 1993, which are included in Section XII, are still applicable.

We have the following additional comments:

1. We understand that there are certain changes to the waterline layout which may affect the water system's capacity to provide adequate flows and pressures especially to the proposed industrial area along Geiger Road. Therefore, a revised water master plan should be submitted for our review and approval.
2. The installation of the development's dual water system should be in accordance with Board of Water Supply Rules and Regulations for nonpotable water systems and cross-connection control.
3. Page 44: We understand the State Commission on Water Resource Management has granted permitted use for the Honolulu Wells which was developed by the Ewa Plain Water Development Corporation (EPWDC). We will require the developer to provide written confirmation from EPWDC that water has been allocated to the Ewa by Gentry project.

If you have any questions, please contact Roy Doi at 527-5235.

cc: Gray, Hong, Bills & Associates, Inc.
Office of Environmental Quality Control



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

Sean L. Gray, PE
Dane S. C. Hong, PE
David B. Bills, PE
Roy T. Abo, PE
Beverly G. Ing, PE
Michael H. Ngema, PE
Raymond M. Sano, PE
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-8018

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

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Hayashida:

We have received a copy of your memorandum dated May 4, 1993 to Robin Foster regarding the subject project. We are providing responses to your comments as follows:

1. The project is in its initial phases and will require a Development Plan Change and a Change of Zone. The Water Master Plan will be revised and resubmitted to your office at a later date further into the development process. Any potential problem resulting from hydraulic characteristics will be re-planned by the use of larger pipe sizes.
2. The project will be using a dual water system and the system will be installed in accordance with the Board of Water Supply rules and regulations for non-potable water systems and cross-connection control.
3. The developer will provide written confirmation from the Ewa Plain Water Development Corporation that appropriate water allocations are available for the Ewa By Gentry Project.

We thank you for your comments on the Draft Supplemental Environmental Impact Statement.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills

DBB:sc
2312-DEIS

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

830 SOUTH KING STREET 5TH FLOOR
HONOLULU HAWAII 96813
PHONE (808) 523-4427 • FAX (808) 523-2490



FRANK FARR
DIRECTOR

E. JAMES TURSE
DIRECTOR
GAIL M. HARTO
DEPUTY DIRECTOR

April 29, 1993

File # 1993-05-003

DK DB

MEMORANDUM

TO: ROBIN FOSTER, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

FROM: E. JAMES TURSE, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
EWA BY GENTRY

We have no comments to offer on the Draft Environmental Impact Statement for the Ewa by Gentry development located in Ewa, Oahu.

We have reviewed the subject DEIS and understand that at least 60 percent of the units in the project will be available to families earning up to 140 percent of median family income in accordance with the unilateral agreement executed pursuant to Ordinance 91-17.

Should you have any questions, please contact Jason Ching of our Planning and Analysis Division at 523-4368.

Thank you for the opportunity to comment.

J. James Turse
E. JAMES TURSE
Director

cc: Office of Environmental Quality Control
Gray, Hong, Bills & Associates, Inc.



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. E. James Turse, Director
Department of Housing and Community Development
City & County of Honolulu
650 South King Street, 5th Floor
Honolulu, HI 96813

May 17, 1993

Stan L. Gray, PE
David S. C. Hong, PE
David B. Bills, PE
Roy T. Aoki, PE
Beverly G. King, PE
Michael H. Ngoma, PE
Raymond M. Sano, PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-8018

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Turse:

We received a copy of your memorandum sent to the Chief Planning Officer, dated April 29, 1993. Thank you for your letter identifying that the Draft Supplemental Environmental Impact Statement included your affordable income requirements, as identified in the project's unilateral agreement executed pursuant to Ordinance 91-17.

Your letter will be included in the Final Environmental Impact Statement for record purposes.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc
2312-DEIS

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



FRANK ZERI
MAYOR

DOHN FOSTER
Chief Planning Officer
ROLAND D. LIBBY, JR.
DEPUTY CHIEF PLANNING OFFICER
MH 3/93-678

May 6, 1993

Mr. Tosh Hosoda
Gentry Properties
560 North Nimitz Highway, Suite 301
Honolulu, Hawaii 96817

Dear Mr. Hosoda:

Draft Supplemental Environmental Impact Statement (SEIS)
for the Proposed Ewa by Gentry Expansion

We have reviewed the subject document and offer the following comments:

1. Our department reiterates our previous comments that the Final SEIS should include a thorough discussion of all potential local and cumulative impacts, including alternative mitigative measures for the following infrastructure systems:

- A. Wastewater collection and disposal
- B. Water
- C. Transportation
- D. Drainage

With regard to drainage, the Final SEIS should address the impacts on areas makai of Ewa by Gentry. More specifically, how would the peak flow of stormwater runoff of approximately 9,600 CFS impact the City's Lualani/Fairways and subsequently Haseko's Ewa Marina projects? In addition, the Final SEIS should disclose the relationship of its drainage system to an ongoing Interim Agreement effort to improve the Kaloi Gulch drainage system.

2. According to Section II. STATEMENT OF PURPOSE AND NEED FOR ACTION, page 5, "... The addition of 500 residential units on 61 ± acres of land, plus the assimilation of 670 units within the existing Development Plan boundaries, will ultimately add 1,170 residential units to the housing marketplace. . . ."

Mr. Tosh Hosoda
Gentry Properties
May 6, 1993
Page 2

Our department continues to request information regarding the location of the additional 670 residential units. The Final SEIS should specifically show where these additional units would be located within any existing Ewa by Gentry project areas as well as previously approved Development Plan land use areas.

3. Attached is a copy of the State Department of Transportation's comments on the Ewa by Gentry Expansion (PD Ref. No. 93/E-1) which should be responded to in the Final SEIS.
4. The Final SEIS should include a Fiscal Impact Analysis of the project. We suggest the Case Study Method as the methodology to determine the cost and revenue impacts to the City and State.

We hope these comments are helpful in preparing the Final SEIS. Should there be any questions, please contact Matthew Higashida of our staff at 527-6056.

Sincerely,

ROLAND D. LIBBY, JR.
Acting Chief Planning Officer

RDL:js

Attachment

cc: Office of Environmental Quality Control
✓ Gray, Hong, Bills & Associates, Inc.



Gray • Billis & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

Mr. Robin Foster
Chief Planning Officer
City & County of Honolulu
Planning Department
650 South King Street
Honolulu, HI 96813

BATL Gay PE
Dane SC Hong PE
Dane B Bis PE
Roy T Aou PE
Brett G Ing PE
Alcathia Norma PE
Raymond M Saro PE

1119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0206
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Mr. Robin Foster
May 17, 1993
Page 2

The parties involved with development along the Kaloi Gulch channel include the State of Hawaii Housing Finance and Development Corporation (HFDC), Gentry Companies, the City & County of Honolulu, Haseko and the major landowner, which is Campbell Estate. All parties are working jointly to develop a program which is driven to ensure water quality discharging through the channel, and ultimately to the ocean, complies with water quality provisions. It is our understanding that the City & County Department of Public Works will be issuing for review an Interim Report which outlines the alternatives and recommendations on this issue. It is further understood that all participating parties will then provide comments to the Interim Report. As of this date, the Interim Report has not been issued for comment. We understand that this will be occurring in the near future.

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Foster:

We have received a copy of your letter to Mr. Tosh Hosoda of the Gentry Properties regarding the subject project. We are providing the following responses to your comments:

1. Your letter reiterates your previous comments that the Final Environmental Impact Statement should include a thorough discussion of all potential local and cumulative impacts in determining alternative mitigative measures or infrastructure systems. Based on your letter, our office contacted your staff and was advised that your specific concern was on drainage and specifically related to how the peak flow of 9,600 cfs would impact the City's Launani/Fairways Project and Haseko's Ewa Marina Project. Specifically, there was a concern that the Final Environmental Impact Statement should have a discussion regarding interim agreements related to Kaloi Gulch drainage improvements.

With respect to the drainage issue, all projects along Kaloi Gulch will be required to design channel systems to accommodate the peak flow based on the City & County Department of Public Works Envelope Curve. This essentially means that whether upland areas are developed or not, the peak flow is strictly a function of the drainage basin area. At the lower portion of Ewa By Gentry, the peak flow based on the drainage area is 9,600 cfs. At the lower portion of the City's Launani/Fairway Project, the drainage basin area will be larger, and therefore regardless of development on the Ewa By Gentry Project, the Launani/Fairway Project will be required to provide a channel with a carrying capacity larger than 9,600 cfs. The same statement applies to the Ewa Marina Project which would be the ultimate discharge point for the Kaloi Gulch drainage basin. The ultimate discharge would be subsequently larger than that passing through the Ewa By Gentry Project, and larger than the ultimate discharge passing through the Launani/Fairway Project. Therefore, from a volume consideration, Ewa By Gentry Project has no impact on Launani/Fairway or Ewa Marina with respect to design criteria.

2. Your department is requesting specific information to locate the additional 670 proposed dwelling units within the previously-approved Development Plan boundary area. The 1988 Environmental Impact Statement did not contain site-specific site plans showing the location of all units on a project-by-project basis, but rather lumped together all single-family areas, multi-family areas, commercial areas and park areas, and subsequently assigned a gross number of multi-family units and single-family units to the total project acreage. To address your current requirements, we are enclosing a copy of the March 18, 1993 Ewa By Gentry Preliminary Land Use Plan which identifies specific parcels, parcel types, acres and number of units. It is the best available information at the current time.

3. We received a copy of the State of Hawaii Department of Transportation's comments referring to 93/E-1, which will be responded to in the Final Supplemental Environmental Impact Statement.

4. Your draft of your comment letter has specifically requested a Fiscal Impact Analysis utilizing a case-study methodology to determine cost and revenue impacts to the City and State. This requirement is much more specific than that identified in the Consultation Comment letter and, as such, a detailed Fiscal Impact Analysis is unavailable. Through discussions with your staff after receipt of your draft comment letter, we understand a typical Fiscal Impact Analysis, as contained in the recently completed Wahiawa Lands Development EIS is what you were specifically seeking.

However, based on a review of your consultation comment letter, we obtained copies of accepted Final Environmental Impact Statements for other projects in the Ewa area. These accepted statements include the Ewa Marina Phase II, Ewa Villages Master Plan and Makaiwa Hills. The analysis contained with respect to fiscal impacts in all these accepted documents specifically identified where lands were being set aside for public facilities or where funds were being provided for improvement. In addition, all on-site

Mr. Robin Foster
May 17, 1993
Page 3

infrastructure is provided at developer's expense. Subsequently, this was used as a guidance for reporting fiscal impacts in the Ewa By Gentry Environmental Impact Statement for the additional 1,170 units.

While the Fiscal Impact Analysis, as specifically suggested by your office, is unavailable, we have obtained a copy of the Wahiawa Lands Development Final Environmental Impact Statement and reviewed its Appendix H which contained a separate section on fiscal impacts. From a general point of view, the information contained in the Wahiawa Lands Development Fiscal Impact Analysis is similar to that which will be created by the Ewa By Gentry Project. The Wahiawa Lands Development Fiscal Impact Analysis identified the following:

- 1) Revenues generated for the project available to the City are revenues in the form of property taxes.
- 2) Costs involved to the City relate to off-site improvements such as wastewater treatment plant expansion and capital improvement projects.
- 3) Income related to the State is strictly construction-related in the form of excise tax on construction monies and income taxes related to corporations, businesses, and workers participating on the project.
- 4) Cost to the State are related to urban development and off-site projects, and specifically highway-type projects and educational facilities.
- 5) The Wahiawa Lands Master Plan Fiscal Impact Analysis analyzed 3,100 units on approximately 863 acres of land. For comparison purposes, the Ewa By Gentry Project proposes approximately 8,300 units on 1,000 acres of land. Therefore, the land areas are approximately the same and the master-planned housing is approximately 2.5 times more than the Wahiawa Lands Master Plan.
- 6) With respect to City & County cost impacts, the City & County's gain is realized through real property tax and at project build-out property tax would be at its maximum level. With respect to the Wahiawa Lands Project, which had a lesser density, the ratio of revenues to cost through the life of the project to build-out was positive to the City. Based on the entire property taxes available from the Ewa By Gentry Project through greater density, it is reasonable to anticipate that the ratio of revenues to cost would be positive for this project should the Fiscal Impact Analysis be completed. It is also reasonable to estimate that the amount of positive cash flow would be significantly greater with a more dense project.

Mr. Robin Foster
May 17, 1993
Page 4

- 7) With respect to the State revenues, this Wahiawa Lands Master Plan Fiscal Impact Analysis reported all revenues are construction-related, and similarly with the City & County of Honolulu revenues, these revenues were positive throughout the project build-out period. The same expectation would be projected for Ewa By Gentry should the Fiscal Impact Analysis be completed.
- 8) The preparers of the Wahiawa Lands Master Plan Fiscal Impact Analysis have been consulted to confirm the generalized statements contained in Items 6 and 7 that the development of the Ewa By Gentry Project will produce excess revenues for both the City and State. The preparers have concurred with our assessment.
- 9) In addition to the foregoing general statements, Ewa By Gentry will be a major contributor to highways improvements through its participation in the developer's working group of the Ewa Region Highway Master Plan. A commitment has already been made for fair-share contributions with respect to all regional improvements in the project area. The same commitment is also true for potable and non-potable water systems.

Thank you for your comment letter regarding the Draft Environmental Impact Statement. Your comment letter, as well as our response, will be included in the Final Environmental Impact Statement for record purposes.

Should you have any questions regarding this matter, please contact our office.

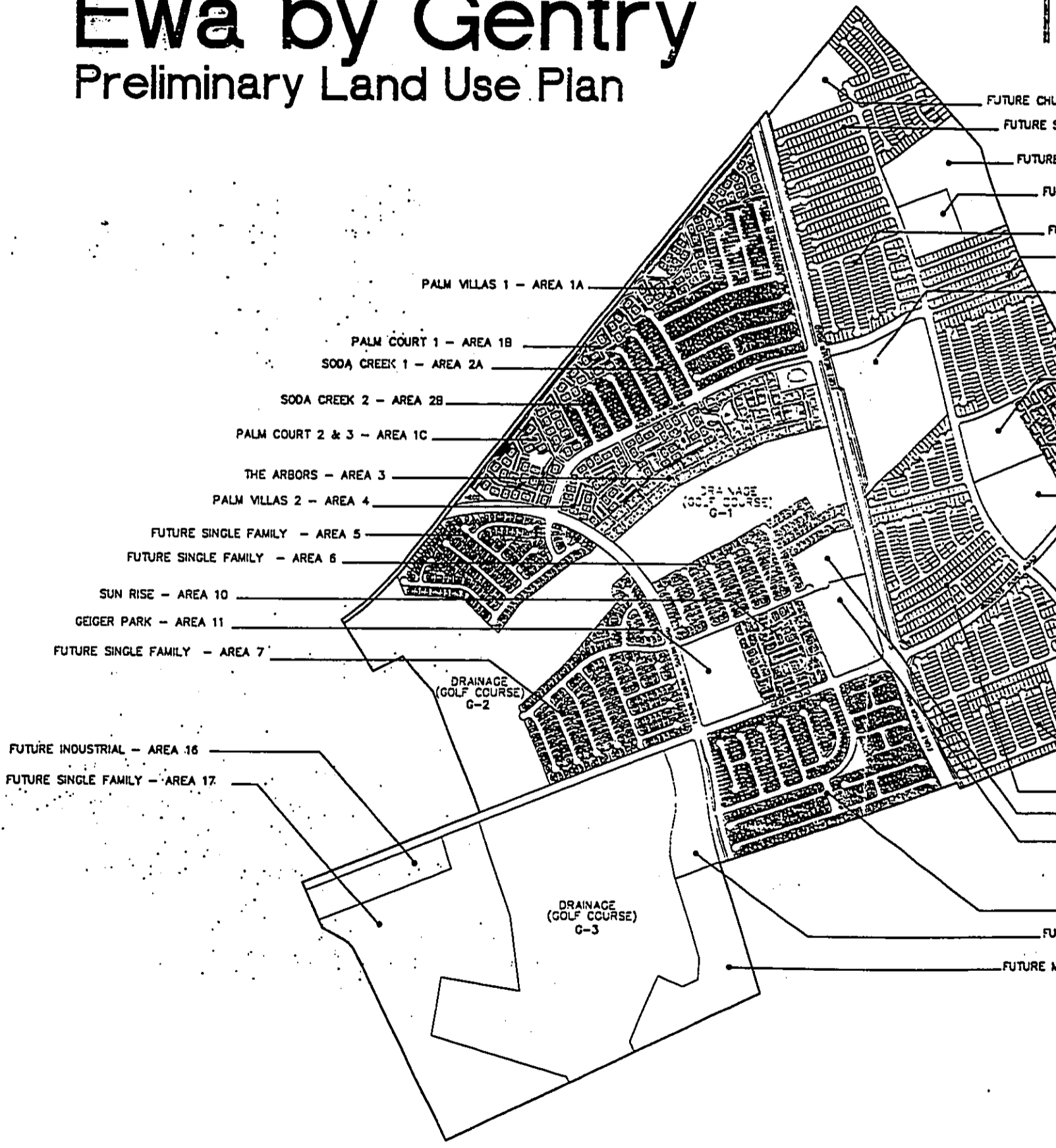
Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.

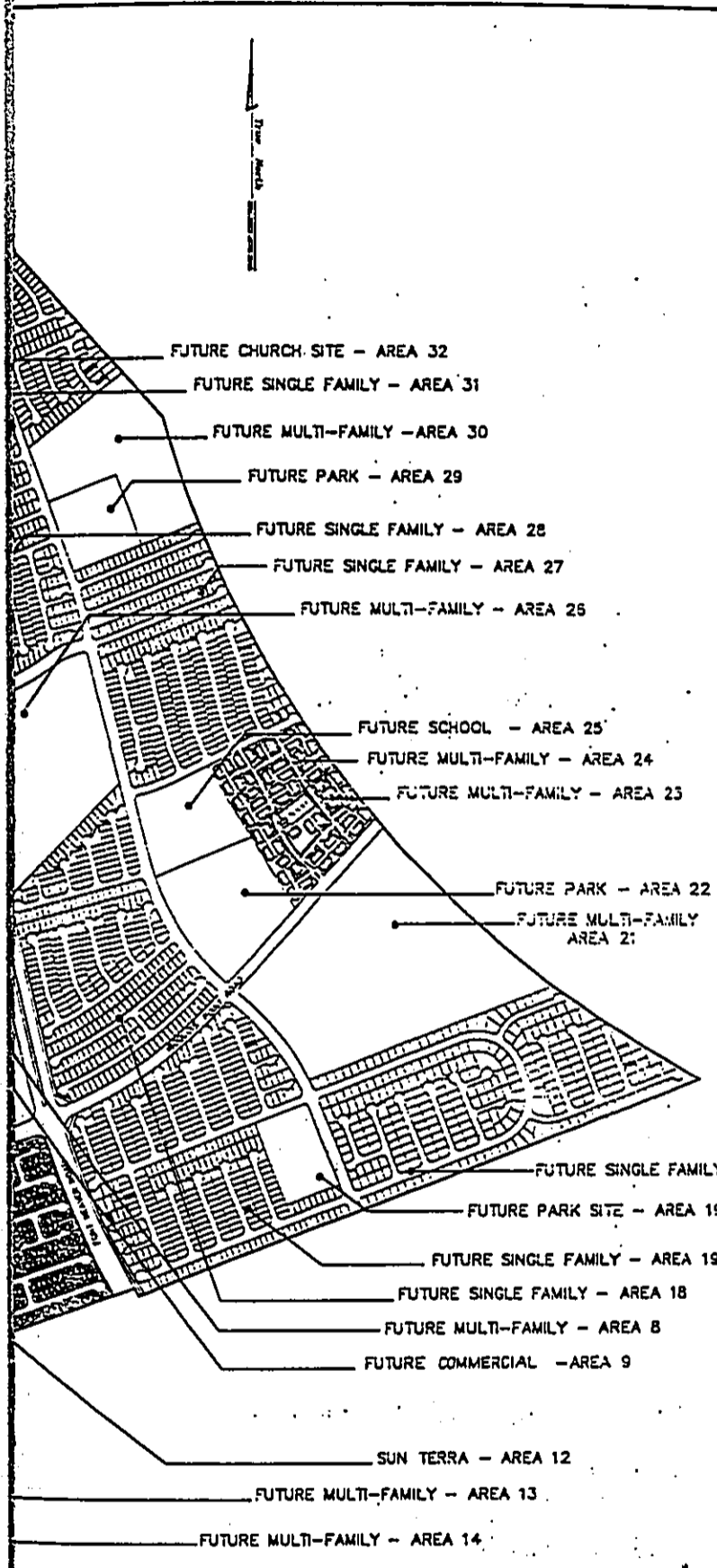

David B. Bills

DBB:sc
2312-DEIS
Enclosures as above

Ewa by Gentry

Preliminary Land Use Plan





ACREAGE & UNITS

PARCEL	PARCEL TYPE	ACRES	UNITS
PALM VILLAS 1	MULTI-FAMILY	15.39	352
PALM COURT 1	MULTI-FAMILY	4.70	88
PALM COURT 2	MULTI-FAMILY	8.23	312
PALM COURT 3	MULTI-FAMILY	8.47	
SODA CREEK 1	SINGLE FAMILY	41.88	413
SODA CREEK 2	SINGLE FAMILY	4.52	46
THE ARBORS	MULTI-FAMILY	21.44	289
PALM VILLAS 2	MULTI-FAMILY	15.87	386
AREA 5	SINGLE FAMILY	26.83	199
AREA 6	SINGLE FAMILY	23.22	184
AREA 7	SINGLE FAMILY	37.73	248
AREA 8	MULTI-FAMILY	5.53	144
AREA 9	COMMERCIAL	10.53	0
SUN RISE	MULTI-FAMILY	11.71	408
CEGER PARK	PARK SITE	10.07	---
SUN TERRA	SINGLE FAMILY	52.09	431
AREA 13	MULTI-FAMILY	8.94	140
AREA 14	MULTI-FAMILY	20.01	300
AREA 16	INDUSTRIAL	8.31	---
AREA 17	SINGLE FAMILY	60.08	480
AREA 18	SINGLE FAMILY	38.10	300
AREA 19	SINGLE FAMILY	48.01	380
AREA 19A	PARK SITE	4.00	---
AREA 20	SINGLE FAMILY	44.89	360
AREA 21	MULTI-FAMILY	39.89	650
AREA 22	PARK SITE	11.29	---
AREA 23	MULTI-FAMILY	8.00	555
AREA 24	MULTI-FAMILY	7.48	
AREA 25	SCHOOL SITE	8.00	---
AREA 26	MULTI-FAMILY	24.83	375
AREA 27	SINGLE FAMILY	37.83	300
AREA 28	SINGLE FAMILY	28.28	260
AREA 29	PARK SITE	6.00	---
AREA 30	MULTI-FAMILY	16.30	360
AREA 31	SINGLE FAMILY	33.22	340
AREA 32	CHURCH SITE	6.31	---
EMA BY CATEGORY	TOTAL	758.18	8300
TOTAL ACREAGE DOES NOT INCLUDE MAIN ROADS			
G-1	GOLF COURSE	31.24	---
G-2	GOLF COURSE	58.74	---
G-3	GOLF COURSE	102.27	---
DATA CALCULATED 3-18-93			

1993

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



WALTER M. OZAWA
DIRECTOR
ALVIN C. KU
DEPUTY DIRECTOR

Robin Foster
Page 2
April 12, 1993

We recommend that Gentry Hawaii, Ltd. contact Jason Yuen of our Advance Planning Branch at 527-6315 to discuss our park concerns for their new proposal and its impact on the parks already planned for Ewa by Gentry.

[Signature]
FOR WALTER M. OZAWA, Director

April 12, 1993

APR 13 1993

TO: ROBIN FOSTER, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

FROM: WALTER M. OZAWA, DIRECTOR

SUBJECT: DRAFT SUPPLEMENTAL ENVIRONMENTAL
IMPACT STATEMENT (EIS)
EWA BY GENTRY
TAX MAP KEY 9-1-69: POR. 6

WHO:ei
Attachment

cc: Gray, Hong & Bills Associates, Inc.
Department of Education, Facilities Branch
Gentry Hawaii, Ltd.

We have reviewed the Draft Supplemental EIS for the Ewa by Gentry and make the following comments and recommendations.

Our comments and concerns to the proposal to develop an additional 500 dwelling units in the Ewa by Gentry development have been included in Section XII of the Draft Supplemental EIS. As stated, the additional units would impact the public parks already proposed for the Ewa by Gentry development, and additional park lands would be required to be provided in accordance to the Development Plan Common Provisions and Park Dedication Ordinance No. 4621.

We are waiting for Gentry Hawaii, Ltd. to meet with my staff to discuss their new proposal and also to update our park needs based on the current total of 8,300 dwelling units Gentry is proposing to develop in their project. The public park system to serve the entire Ewa by Gentry development must be resolved prior to submittal of Development Plan Amendment and Zoning Change applications to the City for review and approvals.

THE GENTRY COMPANIES



April 27, 1993

Mr. Walter Ozawa, Director
Department of Parks and Recreation
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

APR 29 1993

DIT 06

Dear Mr. Ozawa:

RE: DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (EIS)
EWA BY GENTRY, TAX MAP KEY : 9-1-69: POR. 6

We have been given a copy of your comments regarding our above-referenced EIS. As you suggested, we did meet with Jason Yuen of your staff to resolve the department's concern of ensuring sufficient suitable park lands.

According to Mr. Yuen, the common provisions of the City's Development Plan policies require that two acres of park land be dedicated for park purpose for every 1000 population. With 8300 dwelling units proposed, and an average of three members per unit (as required by Mr. Yuen), a population of 24,900 is estimated for full development. The population would translate into 49.8 required park acres.

The acreage allocated for parks on previous plans totalled nearly 43 acres. This acreage breaks down as follows:

Mahiko Park	15 acres
Geiger Park	10
East Side-upper	6
Iroquois Pt. Road Park	12
TOTAL	43 acres

parksawa.ltr

Gentry Hawaii Ltd 560 N. Nimitz Hwy, Honolulu, Hawaii 96817 PO Box 295, Honolulu, Hawaii 96809 (808) 599-8300 FAX (808) 599-5398

Page 2
Mr. Walter Ozawa
April 27, 1993

Based on these numbers, we currently fall about seven acres short. As discussed with Mr. Yuen, we intend to make up this shortfall by providing a private park facility within the area east of Fort Weaver Road and south of Iroquois Pt. Road. I would also like to point out that we have provided a number of small private parks and recreation centers throughout the Ewa Gentry project. The combined acreage of these private facilities could well exceed another ten acres upon completion of the project.

I trust that the foregoing responds to your department's concerns. If you have any questions, please contact me at 599-8300.

Sincerely,

TOSH HOSODA
Senior Vice President
Gentry Hawaii LTD.

TH:ejm

cc: David BAs



Gray • Hoag • Bills & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

Brent L. Goy, PE
Daniel S. C. Hong, PE
David B. Bills, PE
Ray J. Aoki, PE
Beverly G. Ing, PE
Michael H. Normal, PE
Raymond M. Smith, PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 531-0306
Fax: (808) 531-8018

Mr. Walter M. Ozawa, Director
Department of Parks and Recreation
City & County of Honolulu
650 South King Street
Honolulu, HI 96813

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Ozawa:

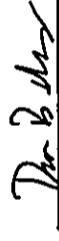
We have received a copy of your memorandum to the Chief Planning Officer dated April 12, 1993 regarding the subject project. Your letter identifies that you will need additional lands to meet park requirements in accordance with the Development Plan common provisions and Park Dedication Ordinance No. 46-21. Your letter further indicates that you wish to have direct consultation with Gentry Hawaii, Ltd. regarding the subject project.

To that end, Gentry Companies met with your staff and a summary of the issues and discussions are attached by the Gentry letter dated April 27, 1993. Your comment memorandum as well as the Gentry Companies' response is being included in the Final Environmental Impact Statement.

The Final Environmental Impact Statement will still categorize the issue of parks as an unresolved issue until all details are finalized. We do not believe that this is a significant unresolved issue, since Gentry Companies has made a commitment to provide the required lands in appropriate locations determined during consultation with your staff.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc
2312-DEIS

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, SUITE 4425
HONOLULU, HAWAII 96819-1869



FRANK P. FAHI
MAYOR

DONALD S. M. CHANG
FIRE CHIEF
RICHARD B. RETO-WOOL
DEPUTY FIRE CHIEF

March 31, 1993

TO: BENJAMIN B. LEE, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

ATTN: MATT HIGASHIDA

FROM: DONALD S. M. CHANG, FIRE CHIEF

SUBJECT: EWA BY GENTRY, EWA, OAHU
TAX MAP KEY: 9-1-69: POR. 6

DATE RECEIVED: APR 2 1993
212-PEIS-C
DH:DB

We have reviewed the subject material provided and have no additional comments.

Should you have any questions, please call Assistant Chief Attilio Leonardi of our Administrative Services Bureau at 831-7775.

AKL:ny

Copy to: Gray, Hong, Bills & Associates, Inc.
Office of Environmental Quality Control (report attached)

DONALD S. M. CHANG
Fire Chief



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Donald S. M. Chang
Fire Chief, Fire Department
City & County of Honolulu
3375 Koapaka Street, Suite H425
Honolulu, HI 96819-1869

May 17, 1993

Bruce G. Gray, P.E.
David S. C. Hong, P.E.
David B. Bills, P.E.
Roy T. Aoki, P.E.
Beverly G. Ing, P.E.
Michael H. Norman, P.E.
Raymond M. Sarno, P.E.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-6018

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Chang:

We received a copy of your memorandum to the Chief Planning Officer dated March 31, 1993. Your letter will be included as a part of the Final Environmental Impact Statement for record purposes.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills

DBB:sc
2312-DEIS

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 524-3111



FRANK F. FASI
MAYOR

MICHAEL S. NAKAMURA
CHIEF
HAROLD M. KAWASAKI
DEPUTY CHIEF

APR 19 1993

Date Received

April 15, 1993

File: 2312

To: DH/DG

Action:

OUR REFERENCE BS-LX

TO: ROBIN FOSTER, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

ATTENTION: MATT HIGASHIDA, PLANS REVISION BRANCH

FROM: MICHAEL S. NAKAMURA, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: EWA BY GENTRY, TAX MAP KEY NUMBER 9-1-69; POR. 6

This is in response to the Draft Supplemental Environmental Impact Statement for Ewa by Gentry, Ewa, Oahu.

Thank you for adding comments about certain of our concerns to the Draft Supplemental Environmental Impact Statement. We note the statements about the need for increased police manpower and facilities for the project site and the whole Kapolei area, as well as the additional comments about the mitigation of odor, dust, noise, and traffic problems. We have no further comments at this time.

Thank you for the opportunity to review this document.

MICHAEL S. NAKAMURA
Chief of Police

BY
Assistant Chief of Police

cc: OEQC
Gray, Hong, Bills & Associates, Inc.



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Michael S. Nakamura
Chief of Police
Police Department
City & County of Honolulu
801 South Beretania Street
Honolulu, HI 96813

May 17, 1993

Frank L. Gray, PE
David S. C. Hong, PE
David B. Bills, PE
Roy T. Aoki, PE
Beverly G. Ing, PE
Michael H. Norma, PE
Raymond M. Sano, PE
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0308
Fax: (808) 531-8018

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Nakamura:

We received a copy of your memorandum dated April 15, 1993 to the Chief Planning Officer regarding the subject project. We appreciate your comments that your concerns identified in the consultation period were included in the Draft Supplemental Environmental Impact Statement.

Your comments will be included in the Final Environmental Impact Statement as a part of the record.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc
2312-DEIS



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

REF:OCEA:SKK

MAY 5 1993

FILE NO.: 93-511
DOC. NO.: 2702

DEPARTMENT OF LAND AND NATURAL RESOURCES

DEPUTY ATTORNEY GENERAL
JOHN LEPPNER
DONALD HANAU

AGRICULTURE DEVELOPMENT
ARCHAEOLOGICAL RESOURCES
BOATING AND YACHTING REGULATION
CONSERVATION LAND
ENVIRONMENTAL AFFAIRS
GENERAL INVESTIGATION
HISTORIC PRESERVATION
FORESTRY AND WILDLIFE
CONSERVATION
STATE PARKS
STATE WATER DEVELOPMENT

The Honorable Robin Foster
Chief Planning Officer
Planning Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Foster:

SUBJECT: Draft Supplemental Environmental Impact Statement (DSEIS):
Ewa By Gentry, Ewa, Oahu, TMK: 9-1-59; PAR. 6

We have reviewed the DSEIS information for the proposed development and have the following comments:

Commission on Water Resource Management

The Commission on Water Resource Management (CWRM) is concerned that the DSEIS does not adequately address the availability of potable and non-potable water for this project. CWRM questions the statement on page 37 that, "The State Commission on Resource Management has also confirmed that the current Ewa By Gentry water demands have been recognized and allocated." This statement is partially correct in that the Commission has so far allocated 0.160 million gallons per day (mgd) of non-potable water to the developer. The remaining non-potable water needs for the project have not been allocated by CWRM.

According to the DSEIS, the developer has an existing Water Use Permit for a 0.160 mgd allocation of cap rock non-potable water, and a pending Water Use Permit application for 0.290 mgd. If the projected non-potable water demand of the development is 0.85 mgd as stated in the subject DSEIS, there remains a deficit of 0.40 mgd. In addition, the developer previously submitted information to CWRM in March of this year (1993) indicating that the projected 1995 non-potable water needs would be 1.06 mgd, rather than the 0.85 mgd estimate indicated in the DSEIS.

Mr. R. Foster -2- File No.: 93-511

At this time, uncommitted non-potable cap rock water is no longer available and the existing supply may further diminish if Oahu Sugar Company ceases its Ewa sugar operations.

CWRM asks that the developer indicate whether they intend to participate in the Ewa Caprock Regional Plan which seeks to develop non-potable water sources other than the cap rock aquifer.

For the acquisition of potable water for the project, the DSEIS should make clear whether the developer intends to obtain its supply from the Ewa Plain Water Development Corporation, of which it is a member, or from the Executive Board of Water Supply.

Division of Water and Land Development

The Division of Water and Land Development (DOWALD) comments that the DSEIS states that storm drainage will be channeled into Kalo Gulch. This gulch will be used by other developments, and therefore, a cooperative drainage master plan by all developers is needed. Minimizing flows and sediments into this gulch should be the objectives of this plan. Compatible use of this gulch, such as parts of golf courses and parks, may be ways to absorb flood waters and sediments. Thus, DOWALD concurs with this development's plan to use the storm drain area for a golf course, provided that it shall always remain primarily as a floodplain and sediment basin.

Historic Preservation Division

The Historic Preservation Division comments that they have previously concurred that this development on old sugarcane lands will have "no effect" on historic sites.

We have no other comments to offer at this time. Thank you for the opportunity to comment on this matter.

Please feel free to contact Steve Tegawa at our Office of Conservation and Environmental Affairs, at 587-0377, should you have any questions.

Very truly yours,

KEITH W. AHUE

cc: David Bills
OEOC



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

Brent L. Gray, P.E.
Daniel S. Hong, P.E.
David B. Bills, P.E.
Ray T. Ask, P.E.
Evelyn G. Igo, P.E.
Michael H. Wong, P.E.
Raymond M. Savaio, P.E.

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-8018

Mr. Keith W. Ahue, Chairperson
Board of Land and Natural Resources
State of Hawaii
Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Ahue:

We have received a copy of your correspondence to the Chief Planning Officer dated May 5, 1993 regarding the subject project. We are providing the following responses to your comments:

1. The Draft Supplemental Environmental Impact Statement reports that the non-potable water demand for the Ewa By Gentry Project is 0.85 mgd. During the preparation of the Draft Supplemental Environmental Impact Statement we understand the developers submitted a request to the Commission staff (April 14, 1993) that the project has a total request for non-potable sources totalling 1.55 mgd. We understand that the Commission uses lower water generation factors; therefore, the number being utilized by your staff is 1.06 mgd.

The developer is currently participating in the Ewa Caprock Regional Plan which seeks to develop non-potable water sources other than the Caprock Aquifer. Specifically, Gentry's consultants have already drafted a contingency plan to supplement non-potable sources in the area. The contingency plan primarily relies on the re-use of treated wastewater effluent from the Honolulu Wastewater Treatment Plant. For your information, it is our understanding that the City & County of Honolulu will be shortly be circulating a request for proposal for a treatment plant facilities which will provide wastewater treatment plant effluent-quality suitable for non-potable irrigation.

Therefore, even though there is a plan in effect to provide non-potable water, we will be revising the unresolved issues identified in the Final Environmental Impact Statement to include non-potable water sources.

For your information, the project will obtain all potable water from the Ewa Plain Water Development Corporation, of which it is a member.

Mr. Keith W. Ahue, Chairperson
May 17, 1993
Page 2

2. Your comment letter indicates that Kaloi Gulch will be part of the storm drainage system as reported in the Draft Supplemental Environmental Impact Statement. We concur that this gulch will also be used by other developments and a cooperative drainage master plan is needed. Therefore, a working group consisting of the State of Hawaii Housing Finance and Development Corporation, The Gentry Companies, the City & County of Honolulu, Haseko and Campbell Estate are working together with specific emphasis on water quality requirements at the discharge at the ocean. A Draft Report is being issued by the City in the near future containing the City's recommendations with respect to joint coordination. We expect this document to be available within the next month. The project has always proposed to use the golf course for flood plain management and this use will also act as a sedimentation basin.

3. Your Historic Preservation Division has restated that the project development will have no effect on historic sites, and the Historic Preservation Division has no additional comments at this time.

We thank you for your review comments regarding the Draft Supplemental Environmental Impact Statement. Your comments will be included as part of the Final Statement for record purposes.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc
2312-DEIS

JOHN WALKER
DIRECTOR



STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
877 OAKIN STREET, SUITE 200
HONOLULU, HAWAII 96813
FAX (808) 547-6608

JOSEPH K. CONANT
EXECUTIVE DIRECTOR

IN REPLY REFER TO:
93:PPE/2114

Mr. Matt Higashida
Page 2
May 4, 1993

(2) rental units which are rented at rates affordable to the specified income ranges; and for the balance of the Property, the affordable housing requirements must meet with the approval of the City and County of Honolulu and HFDC. These requirements shall take into consideration affordable on-site or off-site housing units or cash payments that satisfy current housing needs, or other necessary or desirable community facilities.

We note that although 2,000 units have been completed on the Property, HFDC has not yet been consulted with respect to fulfillment of the affordable housing conditions imposed by the SLUC. HFDC looks forward to working with the developer and the City to ensure that these conditions are met.

Sincerely,

JOSEPH K. CONANT
Executive Director

c: Mr. David Bills

Department of General Planning
City and County of Honolulu
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

Attn: Matt Higashida

Dear Mr. Higashida:

Thank you for the opportunity to comment on the Draft Supplemental Environmental Impact Statement for Ewa by Gentry.

The DSEIS states that the proposed action will add an additional 1,170 residential units to the overall Master Plan for Ewa by Gentry, which we generally favor. It also states that the Ewa by Gentry Project addresses the need for affordable housing on the Ewa Plain, and that Ewa by Gentry will be meeting its requirements for affordable housing. (p. 45)

We would like to point out that as part of the housing conditions imposed by the State Land Use Commission (SLUC) in 1988 (A87-610), the developer must fulfill the following two requirements:

- (1) For the first 1,000 dwelling units which may be constructed on the Property, housing opportunities shall be provided by offering for sale at least thirty percent (30%) of the units at prices which families with an income range of 80 to 120 percent of Oahu's median income can afford and thirty percent (30%) of the units which families with an income range of 120 to 140 percent of Oahu's median income can afford. This condition may be fulfilled through projects, under such terms as may be mutually agreeable, between developer and the Housing Finance and Development Corporation (HFDC), or other appropriate governmental agency. This condition may also be fulfilled, with the approval of HFDC, through the construction of



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

Brian L. Gray, PE
Daniel S. C. Hong, PE
David B. Bills, PE
Roy T. Aoki, PE
Beverly G. Ing, PE
Michael H. Nagata, PE
Raymond M. Saito, PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0308
Fax: (808) 531-8018

Mr. Joseph K. Conant, Executive Director
State of Hawaii
Department of Budget and Finance
Housing Finance & Development Corp
Seven Waterfront Plaza
500 Ala Moana Blvd., Suite 300
Honolulu, HI 96813

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Conant:

We have received a copy of your May 4, 1993 letter to the Chief Planning Officer regarding the subject project. The following is a response to your comments:

1. Your letter indicates that certain conditions were imposed by the State Land Use Commission in 1988 in conjunction with State land use and changes. Item 1 of your letter identifies requirements for the first 1000 units and Item 2 of your letter identifies requirements for the balance of the project, which must meet City & County of Honolulu and HFDC requirements. The Gentry Companies is just beginning to develop in the area covered by SLUC (A87-610) and will be contacting your office in the near future.

We thank you for your comments regarding the Draft Supplemental Environmental Impact Statement. Your comments, as well as our response, will be included for record purposes. Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc
2312-DEIS

JOHN WALKER
SOUTHERN
VALOR GENERAL EDWARD V. RICHARDSON
DIRECTOR OF CIVIL DEFENSE
ROY C. PRICE, SA.
VICE DIRECTOR OF CIVIL DEFENSE



STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
349 DULWICH ROAD
HONOLULU, HAWAII 96819-0349



PHONE (808) 734-2161

APR 14 1993
RECEIVED
3312 - DEIS
- DR DR -

TO: Matt Higashida
Department of General Planning
City and County of Honolulu

FROM: Roy C. Price, Sr.
Vice Director of Civil Defense

SUBJECT: EMA BY GENTRY; DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

We appreciate this opportunity to comment on the DEIS by the Department of General Planning, City and County of Honolulu, on the Island of Oahu, Ewa, Oahu, Hawaii; TMK 9-01-069: portion 06.

We do not have negative comments specifically directed at the DEIS. However, the proposed area is not covered by an existing siren warning device. Our proposal is that a siren and siren support infrastructure be purchased and installed by the developer to help alert residents of an impending or actual event that threatens the area. This "omni directional" siren must be solar powered, have a minimum output of 121 db and be compatible with the existing civil defense siren system. The proposed siren requires a 250-foot radius buffer zone in which there is no residential building as shown in "Figure 3, Roads and Circulation." The suggested location for this siren would be alongside of the "10th Tee," 225 feet from the center line of Geiger Road as shown in "Figure 3, Roads and Circulation Map." Just as parks, schools, fire hydrants, sidewalks and underground/overhead utilities are planned as integral parts of developments, so must emergency warning systems be planned for the safety of communities.

Chapter V, "Description of the Environmental Setting, Impacts and Mitigation," paragraph A, Physical Environment, subparagraph 2, Topography, addresses the elevation and slope within the project area. The impact of high winds on these terrain features should be addressed. The results of this evaluation could dictate the type of structures necessary to withstand the force of winds that could result from terrain amplification.

Matt Higashida
April 12, 1993
Page 2

Additionally, the type of structures provided for the school, park facilities or community centers should be surveyed and built to provide safe shelter for people at risk during hazards. With the projected population growth, Chapter V, paragraph A, subparagraphs 10, Population, and 12, Recreation, ultimately supporting 8,300 residential units and approximately 30,000 residents, serious consideration must be given for safe structures to shelter area residents without exacerbating the existing number of shelter spaces available for the Ewa area.

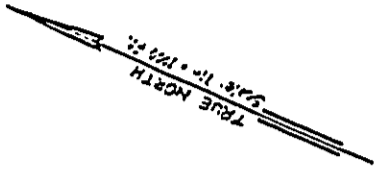
Chapter V, paragraph C, Public Facilities and Services, subparagraph 3, Transportation, and 3a, Roadway System, identifies roadway concepts for the Ewa Plain necessary to support the Kapolei Area Master Plan in the years 1997 and 2005. Roadways identified for the area must also address the growth in population and the impact of this growth when the roadways are used as emergency evacuation routes.

Our State Civil Defense planners and technicians are available to discuss this further if there is a requirement. Please have your staff call Mr. Mel Nishihara of my staff at 734-2161.

Enc.
c: Mr. David Bills
Gray, Hong, Bills & Associates, Inc.
Office of Environmental Quality Control

Ewa by Gentry

Preliminary Land Use Plan



AREAS HAVING
PREVIOUSLY RECEIVED
DP AMENDMENTS

18 ACRES
AGRICULTURAL
TO INDUSTRIAL

61 ACRES
AGRICULTURAL
TO RESIDENTIAL

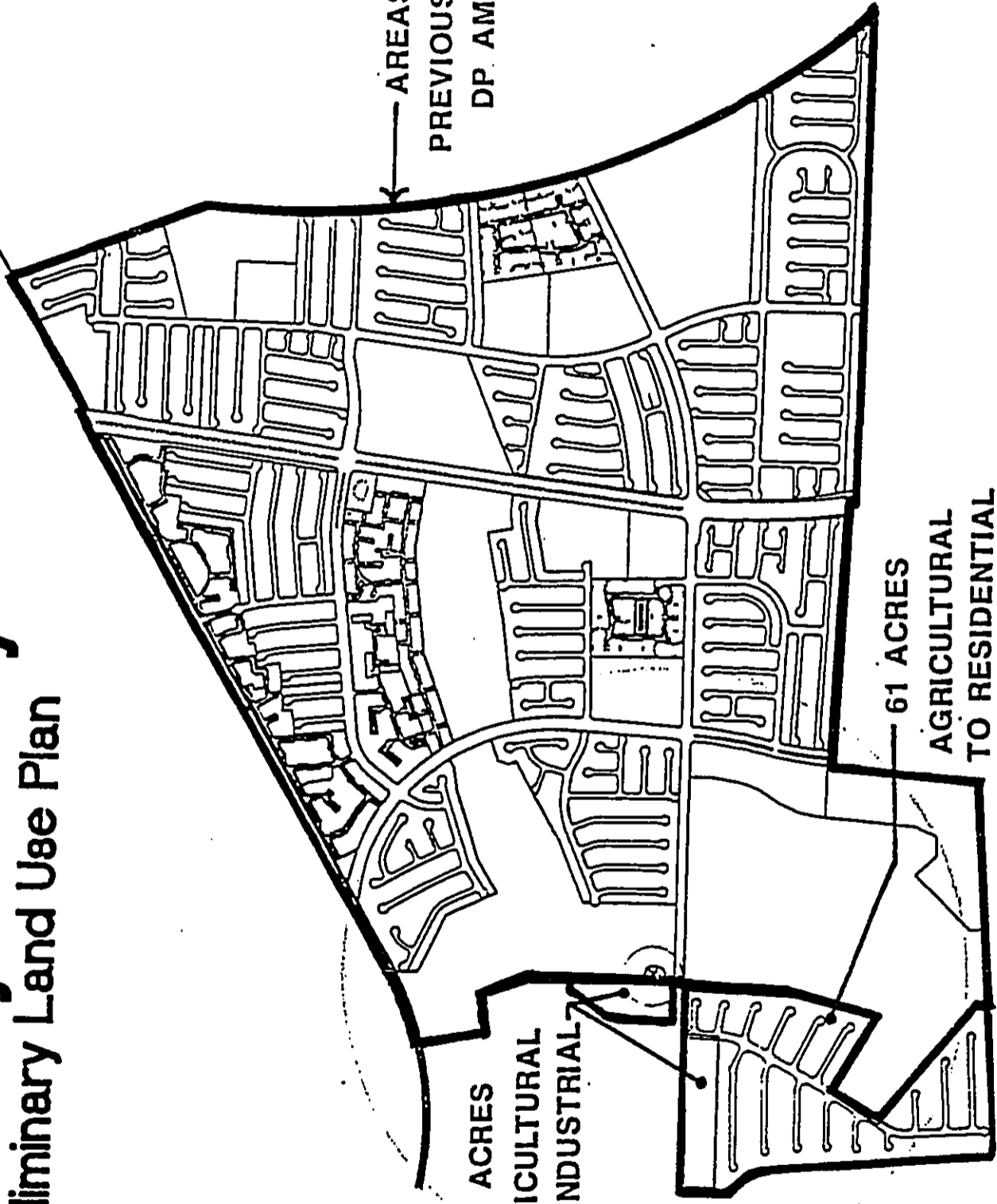


FIGURE 3

ROADS & CIRCULATION



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

Mr. Roy C. Price, Sr.
Vice Director of Civil Defense
State of Hawaii
Department of Defense
Office of the Director of Civil Defense
3949 Diamond Head Road
Honolulu, HI 96816-4495

Dan L. Gray, PE
David S. C. Hong, PE
David B. Bills, PE
Roy T. Aoki, PE
Beverly G. Ing, PE
Michael H. Noyes, PE
Raymond M. Sarno, PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 531-0306
Fax: (808) 531-6018

SUBJECT: Ewa By Genery
Draft Supplemental Environmental Impact Statement

Dear Mr. Price:

We have received a copy of your memo dated April 12, 1993 to Matt Higashida of the Department of General Planning regarding the subject project. We are providing the following responses to the comments contained in your memo:

1. During the Construction Plan Preparation Phase of the project, plans will be routed through your office for coordination that a siren and siren support infrastructure, as described in your letter, is included to provide proper coverage for the project site.
2. Your draft review letter identifies that the Ewa Plains and its terrain can create hazardous wind conditions for structures resulting from terrain amplification. The comment applies to general building construction, and specifically to school and park facilities which also provide shelters during hazards. In response, the Building Code requires design for wind load for horizontal forces as well as uplift forces. The current Building Code requires structures be designed to withstand the forces generated for a wind blowing at 80 mph. In addition, depending on the locality, a separate exposure rating is also required. The Uniform Building Code exposure rating for the Ewa Plains would be Exposure Rating C, which is more strenuous and recognizes amplification where there are wide open spaces.

Your letter also indicates that there should be awareness that as the population grows, more shelter space is required or else there will be exacerbating circumstances for the existing shelter spaces. It should be generally recognized that with the population growth there will be more schools, as well as park facilities and public facilities. The Draft Environmental Impact Statement identifies these facilities, even though the exact location may not be set. Therefore, there will be a proportional growth of potential shelter facilities related to the population.

Mr. Roy C. Price, Sr.
May 17, 1993
Page 2

3. Your comments also identify the concern for evacuation routes as a result of hazards. To that end, the roadway system is being designed in accordance with the State of Hawaii Department of Transportation review, as well as the City & County of Honolulu Department of Transportation Services review. The Ewa Plains Development, and specifically the Ewa By Genery Development, is providing a major north-south collector, in addition to Fort Weaver Road, which is intended to be used as an emergency evacuation route for a civil defense hazard. Providing multiple evacuation routes is one of your primary concerns as determined by our telephone conversation with your office to discuss your draft comment letter.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc
2312-DEIS

Brent Cook, PE
Daniel S. C. Wong, PE
David B. Bills, PE
David J. Ash, PE
Brent G. Ho, PE
Michael H. Moore, PE
Raymond M. Stone, PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521 0306
Fax: (808) 531 6018

May 17, 1993



Gray • Hong • Bills • Associates, Inc.
CONSULTING ENGINEERS

Mr. Gordon Matsuoka
State Public Works Engineer
Department of Accounting & General Services
P.O. Box 119
Honolulu, HI 96810

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Matsuoka:

We have received a copy of your letter to the Department of General Planning dated April 28, 1993 regarding the subject project. We are providing the following responses to your comments:

1. The Draft Supplemental Environmental Impact Statement identified at 6 acres have already been set aside to accommodate educational facilities. The Draft Supplemental Environmental Impact Statement also identified that the increased population will require additional facilities and/or fair-share contributions. It is intended that fair-share contributions can, and probably will, include additional lands. However, the exact method of meeting the fair-share contribution are flexible, depending on the Department's needs.
2. It is intended that additional dialogue and communication will occur between Gentry Hawaii, Ltd. and the State of Hawaii Department of Education.

Your comments will be included in the Final Environmental Impact Statement for record purposes.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc
2312-DEIS

(P)1266-3

APR 28 1993

Department of General Planning
City and County of Honolulu
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

Attention: Mr. Matt Higashida

Gentlemen:

Subject: Ewa By Gentry
Ewa, Oahu
DEIS

Thank you for the opportunity to review the subject document. We have the following comments to offer:

1. We note the increase in developed land area and resulting dwelling units without a commitment of land area for educational facilities in addition to the 8 acres already set aside.
2. Continued dialogue leading to the commitment of additional lands to meet additional educational needs is necessary.

If there are any questions, please have your staff contact Mr. Ralph Yukumoto of the Planning Branch at 586-0488.

Very truly yours,

Gordon Matsuoka
GORDON MATSUOKA
State Public Works Engineer

RY:jj
CC: Gray, Hong, Bills & Associates, Inc.
OEQC

MAY-1X-93 THU 9:42 GENERAL PLANNING

5/17/93. 11:31



RECEIVED
MAY 6 PM 1:31

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
151 KANEHOHOMA STREET
HONOLULU, HAWAII 96813

May 4, 1993

REID JOHNSON
Director
CANDACE
ALFORD
FRANK S. SCHULTZ
CALVIN B. TERRY
P. 032/03

Mr. Man Higashida
Planning Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Higashida:

Subject: Draft Supplemental Environmental Impact Statement
Ewa By Gentry, TMK: 9-1-69; Por 6

We are working closely with major developers, landowners, and governmental agencies to come up with an acceptable and equitable cost sharing plan for roadway improvements for the Ewa region. When the plan is completed, we expect each major participant, which includes Gentry-Pacific, Ltd., will be committed to paying their fair share of the cost based upon the projected traffic generated by their respective development.

Appendix C, the Ewa Region Highway Master Plan report, does not account for the trips generated by the proposed 1,170 additional units and does not specify the number or the type of employment created by the industrial development.

The Ewa by Gentry Project may also be impacted by noise from aircraft overflights into and out of Honolulu International Airport. The developer should be aware of this and disclose the aircraft noise levels for any future real estate transactions to be in conformance with Chapter 467-31, Hawaii Revised Statutes (see attached).

Thank you for the opportunity to provide comments.

Sincerely,

[Signature]
Rex D. Johnson
Director of Transportation

Enc.

PROFESSIONS AND OCCUPATIONS

467-31 [1467-31] Notification required; ambiguity; penalty. (a) When real property lies (1) within the boundaries of a special flood hazard area as officially designated on Flood Insurance Administration (FIA) maps promulgated by the United States Department of Housing and Urban Development for the purposes of determining eligibility for emergency flood insurance program; (2) within the boundaries of the noise exposure area shown on maps prepared by the department of transportation in accordance with Federal Aviation Regulation Part 150—Airport Noise Compatibility Planning (14 C.F.R. Part 150) for any public airport; (3) within the boundaries of the Air Installation Compatibility Use Zones (AICUZ) of any Air Force, Army, Navy, or Marine Corps airport as officially designated by military authorities; or (4) within the anticipated inundation area designated on the department of defense's Civil Defense Tsunami Inundation Maps:

(1) Any licensee shall provide timely notification to prospective buyers, lessees, and tenants prior to any sale, lease, transfer, or any other transaction relating to the real property, that the property is situated within any of the zones, maps, or areas designated in this subsection pursuant to maps which designate the four areas by tax map key number (zone, section, parcel) provided that notification shall not be required in the case of a rental lease or rental agreement, the term of which is one year or less. The real estate commission shall provide guidelines as to the method and timing of the required notification; and

(2) Each county shall provide, when available, maps of its jurisdiction detailing the four designated areas specified in this subsection. The maps shall identify the properties situated within the four designated areas by tax map key number (zone, section, parcel) and shall be of a size sufficient to provide information necessary to serve the purposes of this section. Each county shall provide a public copy of the maps to licensees and may charge a reasonable fee therefor.

(b) When it is questionable whether real property lies within any of the designated areas referred to in subsection (a) due to the inherent ambiguity of boundary lines drawn on maps of large scale, the ambiguity shall be construed in favor of the licensee provided a good faith effort has been made to determine the applicability of subsection (a) to the subject real property.

(c) Any person who violates this section shall be fined not less than \$100 nor more than \$500. Nothing in this section shall affect the validity of title to real property transferred, based solely on the reason that any licensee failed to conform to the provisions of this section. [L. 1987, c. 209, §3]

New

This section shall take effect upon the notification by the Commission to licensees of the occupation and availability of county maps detailing the four designated areas. L. 1987, c. 209, §4.



RECEIVED

'93 APR 7 AM 9:48

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
PLANNING DIVISION
1405 KUAHONO DRIVE
HONOLULU, HAWAII 96813

Met
4/12/93 X

RECEIVED
RUSSELL JOHNSON
DIRECTOR
DEPARTMENT OF TRANSPORTATION
PLANNING DIVISION
1405 KUAHONO DRIVE
HONOLULU, HAWAII 96813
APR 2 1993

Mr. Robin Foster
Page 2
April 2, 1993

STP 8.5125

April 2, 1993

Mr. Robin Foster
Chief Planning Officer
Planning Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Foster:

Subject: Agency and Public Review Package for the 1993
Development Plans Annual Amendment Review

We reviewed the proposed amendments to the Development Plan Land Use Maps and Special Provisions and have the following comments:

Airports Division

Both Ewa by Gentry Expansion (PD Ref. No. 93/E-1) and Makaiwa Hills, Phase I (PD Ref. No. 93/E-2) may be impacted by noise from aircraft overflights into and out of Honolulu International Airport and Barbers Point Naval Air Station.

Portions of the Ewa by Gentry project are within the 60-65 Ldn noise contour which is deemed incompatible for noise sensitive land uses. The area may also be impacted by aircraft operations from Barbers Point Naval Air Station.

While the Makaiwa Hills project is located outside of the 55 Ldn noise contour, there are potential noise impacts from aircraft overflights into and out of Honolulu International Airport and Barbers Point Naval Air Station. The developer should be cognizant of these potential noise impacts.

Harbors Division

The proposed amendment No. 93/E-SP-1 Section 24-3.2.(b)(1)(E)(iv) could impact planned containerized cargo operations at the Barbers Point Harbor if cargo sheds, gantry cranes, and other harbor structures are considered buildings as defined under this section.

The orientation and size of harbor structures are planned to maximize the efficiency and minimize the cost of cargo handling operations which, in turn, results in lower cost of goods to the consumer. Therefore, we recommend exempting harbor structures from this amendment.

Highways Division

The following comments refer to the summary list of amendments included in the 1993 Development Plan Agency and Project Review Package:

1. Primary Urban Center-1: No impact to State highway facilities.
2. East Honolulu 93/EH-SP-1, Ewa 93/E-SP-1, Central Oahu 93/CO-SP-1, Koolauopoko 93/KP-SP-1, North Shore 93/NS-SP-1, and Waianae 93/W-SP-1: Roadway related improvements should be permitted within these protected scenic public views and open space.
3. Ewa 93/E-1 and 93/E-2: During the interim, developers should be responsible for the submittal of their respective Traffic Impact Analysis Reports which should specify the required mitigative measures and funding commitments. Developers agreeing to participate in the Ewa Traffic Master Plan is inadequate.
4. Central Oahu 93/CO-1: Developer must provide roadway and intersection improvements to our State highway facilities (Kamamacha Highway, Kamamachui Road, Wilikina Drive, etc) which are impacted. Developer must also evaluate and mitigate his development's impact on upstream and downstream facilities such as Interstate H-2, Kaulonahua Road, etc.
5. Central Oahu 93/CO-2: Developer must implement committed roadway related improvements to Interstate H-2 and Miliami Interchange.
6. Central Oahu 93/CO-3: Developer must provide required improvements to Kunia Road and Kunia Interchange. Developer must also participate in the Ewa Highway Master Plan Development.
7. Central Oahu 93/CO-4: Developer must submit a Traffic Impact Analysis Report for our review and approval.
8. Koolauopoko 93/KP-1, 93/KP-2, and 93/KP-3: Developer must submit a Traffic Impact Analysis Report for our review and approval.

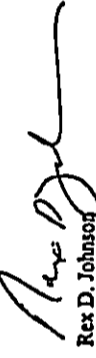
Mr. Robin Foster
Page 3
April 2, 1993

STP 8.5125

9. Waianae 93/W-1 and 93/W-2. Developer must implement required roadway improvements as discussed in his submitted Traffic Impact Analysis Report.

We appreciate the opportunity to provide comments.

Sincerely,



Rex D. Johnson
Director of Transportation



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Rex D. Johnson
Director of Transportation
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813

May 17, 1993

Bea L. Gray, P.E.
Dane S. C. Hong, P.E.
David B. Bills, P.E.
Ray T. Aoki, P.E.
Beverly G. Ing, P.E.
Michael H. Medina, P.E.
Raymond M. Sano, P.E.

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-8018

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Johnson:

We have received two separate correspondences regarding comments on the subject project from your office. One correspondence was addressed to the Chief Planning Officer, dated April 2, 1993, and covered numerous projects on the Ewa Plains, of which we will respond to the applicable comments. Additionally, we have received a copy of your May 4, 1993 letter to the Planning Department regarding the specific Draft Supplemental Environmental Impact Statement. The Department of General Planning has asked us to respond to your general review letter dated April 2, as well as the specific Draft Supplemental Environmental Impact Statement review letter dated May 4th. Our responses are as follows:

1. Your April 2, 1993 correspondence identified that a portion of the Ewa By Gentry Project may be within the 60 to 65 Ldn noise contour, which is deemed incompatible for noise-sensitive land uses. This review comment is also supplemented by the 3rd paragraph of your May 4, 1993 letter, identifying that the Ewa By Gentry Project may also be impacted by noise from aircraft overflights into and out of Honolulu International Airport. Subsequently, developers should be aware of this and disclose the aircraft noise levels for any future real estate transactions in conformance with Chapter 467-31, Hawaii Revised Statutes.

As a result of your two letters, we have obtained your Air Installation Compatibility Use Zone (AICUZ) study and superimposed project boundaries. We will enclose this mapping as a part of the record. We are also attaching as a part of the record the applicable portions of 467-31 (H.R.S.), as you have provided in your correspondence.

2. Your April 2, 1993 correspondence identifies that the Ewa By Gentry Project will be required to provide Traffic Impact Analysis reports as necessary. We believe your review was with respect to the Department of General Planning's correspondence and not based on the Draft Supplemental Environmental Impact Statement. However, your May 4, 1993 letter regarding this specific Draft Supplemental Environmental Impact

Mr. Rex D. Johnson
May 17, 1993
Page 2

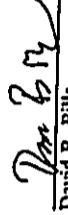
Statement specifically identifies that you are working with the major landowners and governmental agencies to come up with an acceptable and equitable cost-sharing plan for roadway improvements for the Ewa Region. As identified in the Draft Supplemental Environmental Impact Statement, Gentry Companies is a participant in the Developer's Working Group and has already made a commitment to pay their fair share of cost based on projected traffic generation from their developments.

3. Your May 4, 1993 correspondence identifies that the current Ewa Regional Highway Master Plan, as contained in Appendix C, does not account for trips generated by the proposed 1,170 additional units and does not specify the number and type of employment created by the industrial development. Your statement is only partially true. The current Ewa Region Highway Master Plan utilizes traffic projections provided by each residential developer. The current version of the Working Master Plan shows employment generation of 1,480 people for Ewa By Gentry and the total number of dwelling units is 7,562. Therefore, a portion of the additional dwelling units have already been utilized for Master Planning purposes.

As indicated in the Draft Supplemental Environmental Impact Statement, and also as indicated in the Ewa Region Highway Master Plan, the working model is being revised on a regular basis. The traffic projections will be upgraded and included in the next draft of the Highway Master Plan, subject to Development Plan approval. As indicated earlier, the developer will be subsequently paying its fair share for the additional traffic generation. We would like to confirm that the developer has made this commitment and it applies whatever the final number dwelling units and employment opportunities are generated by the Ewa By Gentry Project.











We thank you for your review comments regarding the subject project. Both your April 2, 1993 correspondence, as well as your May 4, 1993 correspondence, as well as this response, will be included in the Final Environmental Impact Statement for record purposes. Should you have any questions regarding this matter, please contact our office.

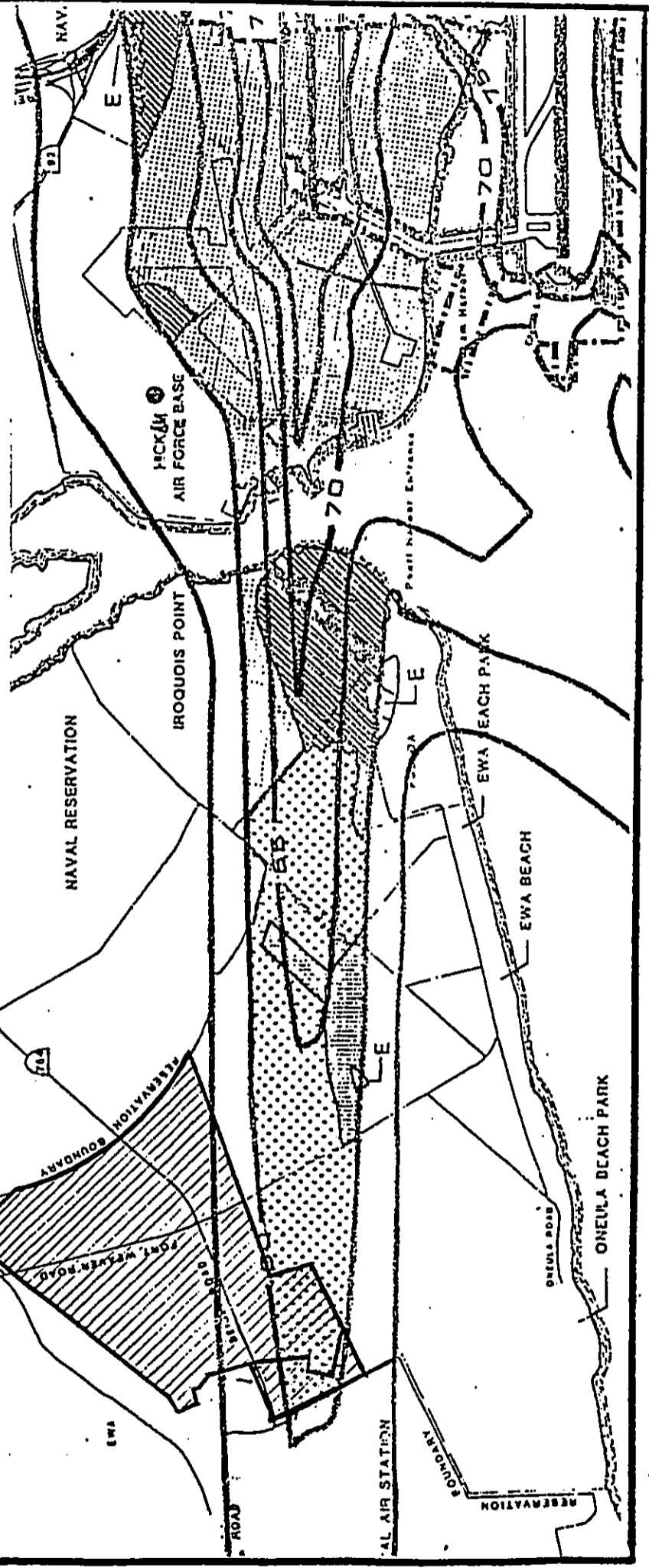
Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc
2312-DEIS
Enclosures as above

LEGEND

- | | | | |
|---|--|---|--|
|  | MULTIFAMILY RESIDENTIAL (CIVILIAN) | + | CHURCHES |
|  | MULTIFAMILY RESIDENTIAL (MILITARY) | ☆ | HALFWAY HOUSE |
|  | SINGLE-FAMILY RESIDENTIAL (CIVILIAN)
C3 C OF HONOLULU | E | ELEMENTARY |
|  | SINGLE-FAMILY RESIDENTIAL (MILITARY)
C&C OF HONOLULU | I | INTERMEDIATE |
|  | STATE CONTROLLED LAND USE | ● | SITE ON THE FEDERAL REGISTER OF
HISTORIC PLACES |
|  | CITY & COUNTY CONTROLLED LAND USE | | |
|  | FEDERALLY CONTROLLED LAND USE | | |
|  | INCOMPATIBLE STATE LAND USE | | |
|  | AIRPORT BOUNDARY | | |
|  | LDN CONTOUR | | |



4/4-1026

CONFIDENTIAL



STATE OF HAWAII
DEPARTMENT OF EDUCATION

P. O. BOX 2009
HONOLULU, HAWAII 96810

DATE OF THE STATEMENT

April 6, 1993

RECEIVED
93 APR 19 PM 3:56
PLANNING DEPT.
C&C HONOLULU

Mr. Benjamin B. Lee
Chief Planning Officer
Department of General Planning
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Lee:

SUBJECT: Draft Supplemental Environmental Impact Statement
Eva by Gentry, Eva, Oahu, Hawaii
TRK 9-1-891-portion 5

We have reviewed the draft supplemental EIS for Eva by Gentry and have the following comments to offer:

1) The increase of 1,180 units to a total of 8,300 units in Eva by Gentry will cause a severe impact on the schools in the area. The increase in projected enrollment is:

School	Projected Grades	Students	Increase
Eva II Elementary	K-6	1837	437
Ilika Intermediate	7-8	418	118
Campbell High	9-12	555	165
Total		3,020	720

It is our understanding that 670 units will be distributed throughout the existing project and 500 units will be added in the proposed 71 acre site (page 5). Hence, we have revised our projections in our letter of February 11, 1993.

2) Due to the great potential for housing growth in the area from the existing Eva by Gentry project and other planned projects such as Eva Marina, Eva Villages, and the Laulani/Fairways project in the surrounding area, all of the schools are projected to be beyond present capacity.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

Mr. Benjamin B. Lee -2- April 6, 1993

The increase in projected enrollment will greatly exacerbate an already severe problem.

Despite the potential for another elementary school at Laulani (p.22) actual construction is still in the planning stage and dependent on adequate funds to build the school and when the city will develop the area.

3) The current school enrollment described in the draft (page 33) should be corrected to 21,449 in the Leeward District in 1992 and projected to 35,915 by 1997. Actual enrollment of elementary schools in the Eva area in 1992 was 2,033 and is projected to rise to 3,096 by 1997. The projected sustained enrollment of the entire Eva area when all of the presently approved projects are totally built is 4,776 students.

4) The design enrollment by the year 2010 of all existing elementary schools including all projected construction is only 3,730. Even the addition of an elementary school at Laulani of 750 will not be sufficient to meet the required capacity. Hence, the addition of more units in Eva by Gentry due to this proposal will increase long term problems.

5) In 1992, Ilika Intermediate enrolled 978 students and Campbell High School enrolled 1,660 students. The projected enrollment in 1997 at both schools, respectively, will be 1,295 and 2,137 students. Hence, the addition of the proposed development area would increase enrollment to 1,337 and 2,208 respectively.

The design enrollments of the two schools are 1,000 and 1,800 respectively. Until Kapolei Intermediate and Kapolei High Schools are built, the two existing schools will be greatly overburdened. Both schools are not projected to open until 1998, at the earliest, pending adequate legislative funding.

6) The DOE will request that the fair-share contribution including additional donated land at Eva II Elementary School and/or additional facilities or funds for facilities be determined and paid or donated before the final approval of subdivision of the area is passed by the City Council.

On Page 2, section I.C.2.e, there is acknowledgement that the increase demands on public facilities and services, including educational facilities... are required.

Mr. Benjamin B. Lee

-3-

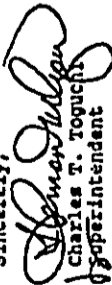
April 6, 1993

The willingness of the developer to contribute is stated on Page 2, Section I.C.2.e and on Page 33. The additional student population currently identified will require additional facilities and/or fair-share contributions, which Ewa By Gentry proposed to provide, as suggested by the Department of Education.

The fair-share contribution will be based on the 1,180 additional units.

Should there be any questions regarding this response, please call the Facilities Branch at 737-4743.

Sincerely,


Charles T. Toguchi
Superintendent

CTT:hy

cc: A. Suga, Asst. Supt.
L. Chung, LDO
H. Hosumoto, OSP
E. Ueda, DBED



Gay & Hoag & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

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

**SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement**

Dear Mr. Toguchi:

We have received a copy of the correspondence to the Chief Planning Officer regarding the subject project dated April 6, 1993. The following responses are being provided to the issues raised in your April 6, 1993 correspondence:

1. Your office has identified the increased enrollment at Ewa II Elementary School, Ilima Intermediate and Campbell High School which would result from the proposed project increased density. We will be revising the Final Environmental Impact Statement to identify a total student population of 3,020 students, which will be generated based on 8,300 housing units.
2. Your Draft Supplemental Environmental Impact Statement review letter identifies that housing growth in the existing project, as well as additional projects, will push enrollments beyond their capacity. To further emphasize this point, the Draft Supplemental Environmental Impact Statement, as well as Final Environmental Impact Statement, contains the projected housing increase as generated by the Department of General Planning, as well as generated by the Estate of James Campbell. Total housing on the Ewa Plains, at present, is approximately 11,700 units, and will increase to somewhere between 39,000 units and 47,000 units, depending upon which estimate is realized. It would seem fair to assume, since conception of the Second City concept has been recognized that there will be substantial additional requirements for educational facilities. As stated later in your letter, the Department of Education requests that a fair-share contribution be provided by the project for expansion of the school system. Ewa By Gentry has previously agreed to set aside 6 acres for the private elementary school site, and will increase its fair-share contribution as requested, based on 1,180 additional dwelling units.
3. Your Draft comment letter identifies the school enrollment numbers different than those reported in the Draft Supplemental Environmental Impact Statement. We will

Earl G. PE
Carol S. C. PE
David B. PE
Roy T. PE
Beverly G. PE
Michael H. PE
Raymond M. PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-8018

Mr. Charles T. Toguchi, Superintendent
May 17, 1993
Page 3

As a planning consideration, the Accepted 1988 Environmental Impact Statement for Ewa By Gentry proposed 7,150 units. All units were originally intended to be on line by 1995. Based on current projects, the earliest that the original 7,150 units could be available are late 1996, and the additional units will not be considered until approximately 1997. There is always a reality during the planning process that even the current schedule will be stretched past the current build-out projections.

Thank you for your comment letter regarding the Draft Supplemental Environmental Impact Statement, and your concerns over adequate school facilities being available within an appropriate time frame to meet the projected population. Your review comment letter, as well as this response, will be included in the Final Environmental Impact Statement. To provide emphasis to your comments, we have also indicated that the issue regarding the Department of Education system will be included in the Unresolved Issues Section of the final document.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc
2312-DEIS

Mr. Charles T. Toguchi, Superintendent
May 17, 1993
Page 2

subsequently be revising the Final Environmental Impact Statement to identify currently identified school enrollment and 1997 projected enrollment. We further understand that the enrollment identified with respect to elementary schools represents a portion of the total enrollment.

4. Your comment letter indicates that the total design enrollment of all elementary schools, including an elementary school site at Laulani will be 4,480 students. Currently, your design projected enrollment based on all approved projects is 4,476 students. The proposed additional 1,180 units would add 437 elementary students to the design population. Therefore, your current projections indicate a shortfall in elementary school capacity which would be increased with the additional 1,180 units. The deficiency in elementary school capacity will be added in the Final Environmental Impact Statement.

Further, the Final Environmental Impact Statement will revise the Unresolved Issues Section to include a discussion of the Department of Education requirements. It is understood that to meet the projected housing and population increases in the Ewa Plains area, as related to the Second City, additional school facilities will be necessary. It is further understood that each project will be contributing a fair-share contribution.

5. Your comment letter identifies the current enrollment at Ilima Elementary and Campbell High School serving the Ewa area. Without the proposed additional development area at Ewa By Gentry, the projected enrollments in 1997 would exceed the design enrollments. Further, additional school facilities in the form of Kapolei Intermediate and Kapolei High Schools are intended to reduce this burden, but both projects are not scheduled to open until 1988, at the earliest, pending adequate legislature funding.

As with your discussion of elementary schools, this information will be contained in the Final Environmental Impact Statement Comment Response Section to identify your concerns. As previously stated, the issue regarding your concerns will be added in the Unresolved Issues Section of the Final Environmental Impact Statement.

6. Your letter identifies a request for fair-share contribution from the developer, and that this be determined and are paid for or donated at a future date.

As previously stated in this response, the developer has made a commitment in the Draft Environmental Impact Statement, and will continue to make the commitment to meet its fair-share contribution. During consultation with your staff as a result of receiving this comment letter, an increase in 2-acres for the elementary school site within the Ewa By Gentry project is considered its fair-share contribution.

Burt Cox, P.E.
Dana C. Wong, P.E.
David B. Baker, P.E.
Dwight L. Adams, P.E.
Richard G. Wong, P.E.
Michael H. Nguyen, P.E.
Raymond M. Sandoz, P.E.

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521 0306
Fax: (808) 531 8018

May 17, 1993



Gentry • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Brian J. Choy, Director
State of Hawaii
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, HI 96813

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Choy:

We received a copy of your letter dated May 3, 1993 to Mr. Robin Foster regarding the subject project. Your letter will be included as a part of the Final Environmental Impact Statement.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills

DBB:sc
2312-DEIS



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE: (808) 531-4118

May 3, 1993

Date Received MAY 4 1993

File: DA DB
To: _____
By: _____

Mr. Robin Foster
Chief Planning Officer
Department of General Planning
City and County of Honolulu
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

Attention: Mr. Brian Suzuki

Subject: Draft Supplemental Environmental Impact Statement for Ewa
by Gentry, Ewa, Oahu

Thank you for the opportunity to review the subject document. We have no comments to offer.

Sincerely,

Brian J. Choy
Director

Bc:jt

c: Gentry Pacific
Gray, Hong, Bills and Associates, Inc.

Brian L. Gray, P.E.
David S.C. Hong, P.E.
David B. Bak, P.E.
Roy T. Aoki, P.E.
Benjamin G. Ing, P.E.
Michael H. Aguma, P.E.
Raymond M. Sano, P.E.

May 17, 1993



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. Hoaliku L. Drake, Chairman
Hawaiian Homes Commission
State of Hawaii
Department of Hawaiian Home Lands
P. O. Box 1879
Honolulu, HI 96805

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Drake:

We have received a copy of your letter dated April 5, 1993 to the Department of General Planning regarding the subject project. Your letter identified that you had no objections to the project, as long as mitigative measures discussed in the Draft Supplemental Environmental Impact Statement were implemented to control adverse impacts.

We will enclose a copy of your letter as a part of the Final Environmental Impact Statement for record purposes.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bak
David B. Bills

DBB:sc
2312-DEIS

HOALIKU L. DRAKE
CHAIRMAN
HAWAIIAN HOMES COMMISSION



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P O BOX 1879
HONOLULU, HAWAII 96813

April 5, 1993

APR 6 1993

DH DB

Department of General Planning
City and County of Honolulu
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

Attention: Mr. Matt Higashida:

Dear Mr. Higashida:

Subject: EWA BY GENTRY DRAFT SUPPLEMENTAL ENVIRONMENTAL
IMPACT STATEMENT. EWA, OAHU, JMK 9-1-89. POR. 6

The Department of Hawaiian Home Lands has no objections to the proposal to add 61 acres of residential and 18 acres of industrial areas as part of the Ewa by Gentry Project masterplan, provided that mitigative measures discussed in the subject draft supplemental EIS are implemented to control potential adverse impacts.

If you have any questions, please call Ben Henderson of our Planning Office at 586-3838.

Warmest aloha,

Ben Henderson
Ben Henderson, Chairman
Hawaiian Homes Commission

HLD:BH:JEC:asy/2728L.6

cc: Gray, Hong, Bills & Associates, Inc.
OEQC

JOHN KAHUFE
COMMISSIONER
STATE OF HAWAII

OFFICE OF STATE PLANNING



Office of the Governor
MAILING ADDRESS: P.O. BOX 2408, HONOLULU, HAWAII 96824
STREET ADDRESS: 200 SOUTH MOULDER STREET, 4TH FLOOR
HONOLULU, HAWAII 96813

Ref. No. P-4173

April 2, 1993

The Honorable Robin Foster
Director
Planning Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Attention: Mr. Matt Higashida

Dear Mr. Foster:

Subject: Draft Supplemental Environmental Impact Statement,
Ewa by Gentry, Ewa, Oahu

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93 APR 6 AM 9:22
PLANNING DEPT.
C/O HONOLULU

We have reviewed the referenced document and have the following comments.

The Ewa regional plain is subject to the effects of surface runoff and spillover given the inherent topography of the area. With the proposed change in land use from agriculture to residential and industrial, an increase in surface runoff volume will likely result. Further, the increased runoff volume may carry with it residential and industrial non-point sources of pollution such as pesticides, fertilizers, petroleum products and other hazardous materials. Given the topography of the area, there is a chain of flow for runoff to traverse from one property to another, with the ultimate discharge into the ocean. Property owners contributing to the runoff need to consider mitigation measures to maintain or reduce potential increased runoff volumes in an effort to alleviate downstream accumulation.

Measures such as detention basins can minimize runoff volumes and velocities as well as to treat pollutants entrained in runoff. We recommend that the applicant consider these types of measures in an effort to mitigate potential adverse impacts to freshwater and marine ecosystems as well as to minimize or maintain runoff levels. In addition, we suggest that water quality monitoring be considered as a further measure to minimize potential negative impacts.

Water quality is a significant environmental concern. In particular, non-point sources of pollution are an issue. A relevant statutory Coastal Zone Management (CZM) policy as expressed in Chapter 205A, HRS, is to "promote water quality and quantity planning and management practices which reflect the tolerance of freshwater and marine ecosystems and prohibit land and water uses which violate State water quality standards."

The Honorable Robin Foster
Page 2
April 2, 1993

Also, the unresolved issue of adequate wastewater treatment capacity should be addressed in regard to the ability of the Honolulu Wastewater Treatment Facility to absorb the additional influx of wastewater.

Another CZM policy states that "Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation," is an objective. The provision of adequate recreational facilities is a concern given that there appears to be a deficiency in the proposed structures.

Finally, in the event that a Department of the Army permit is required for fills within Kalo Gulch, a CZM Federal consistency approval will also be required.

Thank you for the opportunity to comment on this draft supplemental environmental impact statement. If you have any questions, please contact Harold Leo at 587-2883.

Sincerely,

Harold S. Masumoto
Harold S. Masumoto
Director



Cary & Hoag & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

Earl Gay, PE
Dale S. C. Wong, PE
David B. Berg, PE
Ray T. Aoki, PE
Scott G. Fox, PE
Michael J. Morris, PE
Raymond M. Sano, PE

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 531 0306
Fax: (808) 531 8018

Mr. Harold S. Masumoto, Director
Office of State Planning
Office of the Governor
P.O. Box 3540
Honolulu, HI 96811-3540

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Masumoto:

We have received a copy of your letter dated April 2, 1993 addressed to the Chief Planning Officer regarding the subject project. We are providing the following responses to the comments included in your letter:

1. The first page of your letter discusses the effects of surface runoff with respect to quality and quantity and concern with respect to pollutants which could be carried in the stormwater runoff. The stormwater runoff could ultimately be discharged into the ocean. Further, your letter suggests measures to minimize impacts such as detention basins and other methods to reduce velocities. Your letter further suggests that a water quality monitoring plan be considered to minimize potential negative impacts.

With respect to quantity issues, the transformation of land from agricultural use to urbanized uses will definitely cause an increase in stormwater runoff. For design considerations, the City & County of Honolulu requires that their envelope curve be utilized for estimation runoff, based on urbanized conditions. Therefore, the design considerations for quantity are pre-determined, and as reported in the Draft Environmental Impact Statement. The drainage corridor through the project is Kaloi Gulch. The Draft Environmental Impact Statement identifies a flow of 9,600 cfs, which could pass through this corridor under a peak design storm. Further, all site drainage west of Fort Weaver Road will generally enter this system.

The project's major drainage system has reviewed and approved by the Department of Public Works and the system generally consists of routing storm drainage through the project golf course area. The use of a broad, wide channel and grassed environment will maximize the amount of recharge available even though storms in Hawaii are characteristically short-term in nature, allowing most discharge to pass from the mountains to the ocean in a relatively short time period. Using such a concept versus a concrete channel specifically meets your suggested efforts to minimize runoff volumes.

Mr. Harold S. Masumoto, Director
May 17, 1993
Page 2

With respect to water quality monitoring, as you are aware, the State of Hawaii Department of Health currently has developed a National Pollutant Discharge Elimination System (NPDES) for the purpose of reviewing drainage proposals to include water quality monitoring programs, where and if appropriate. The Department of Health is particularly concerned about turbidity and sediment, as well as residual pollutants such as pesticides, fertilizer and petroleum products. While it is a relatively inefficient and highly expensive proposition to treat stormwater discharges, the use of open-flow channels with low velocities and grass surfaces will catch some of these residuals. The more efficient and effective method to minimize man-made sources of pollution are awareness programs. To that end, the Department of Health is specifically looking at management programs for golf courses to monitor their use of pesticides and fertilizers. In addition, general population awareness with respect to activities such as dumping oil in catch basins from oil changes need to be recognized.

As a related matter, all stormwater from Kaloi Gulch ultimately enters the ocean at the proposed Ewa Marina Project. All developers along this channel, including Gentry Companies, the City & County of Honolulu, and the State are jointly developing a program which addresses water quality as well as adequate carrying capacity for design volumes as dictated by the proposed design criteria. It is our understanding that the City & County of Honolulu will be issuing a Draft document in the near future that will be available for review by all parties for comment purposes. The date of distribution for this Draft document is unknown.

2. Your comment letter discusses the adequate wastewater treatment capacity of the Honolulu Wastewater Treatment Plant facility to absorb additional influx of wastewater. In response to your comment, the Department of Public Works in their Draft Review Comments have stated that their policy with respect to Honolulu Wastewater Treatment Plant will be to support new housing developments in the Leeward Oahu areas and will continue to allow new sewer connections until the current operating limit set for wastewater treatment plants have been reached. As indicated in the Draft Environmental Impact Statement, the City has authorized a Facilities Plan addressing the projected population growth with respect to the treatment plant capacity covering the period 1995 through 2005. Current capacity is approximately 38 MGD.

3. Your comment letter addresses the question whether adequate recreational facilities has been resolved. During the review comment period, the Gentry Companies met with the Department of Parks & Recreation, and has committed to meet the Department's recreational facility requirements of 49.8 acres. Currently, Ewa By Gentry Project is providing 43 acres, not including a number of small private parks and recreation centers which are not being counted toward the Parks & Recreation requirement. The

Mr. Harold S. Masumoto, Director
May 17, 1993
Page 3

shortfall of 6.8 acres will be added to the project's requirement. Therefore, we feel the issue is resolved and its specific sizing and location is subject to providing additional detail.

4. Your comment letter indicates that in association with the Department of the Army Permit, a Coastal Zone Management Federal Consistency Approval is also required. This information will be included in our response letter and included as a part of the record in the Comment Response Section. Your agency is a consulting agency to the Corps of Engineers, as well as is the Department of Health which much issue a 401 Consistency Statement, as well as U. S. Fish & Wildlife Service.

We thank you for your comments regarding the Draft document. Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc
2312-DEIS



University of Hawaii at Manoa

Environmental Center
A Unit of Water Resources Research Center
Crawford 317 • 2550 Campus Road • Honolulu, Hawaii 96822
Telephone: (808) 958-7361

May 7, 1993
RE:0626

Mr. Brian Suzuki
Department of General Planning
City and County of Honolulu
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

Dear Mr. Suzuki:

Draft Supplemental Environmental Impact Statement Dea By Gentry Dea, Oahu

The proposed project involves an amendment to the Development Plan Land Use Map for Dea by redesignating 71 acres of land adjacent to the Dea By Gentry project area from Agriculture to Residential and Industrial. The Final Environmental Impact Statement (EIS) for the Dea By Gentry project was prepared and accepted in 1988. The proposed redesignation would expand the existing Master Plan boundaries by: 1) adding 61 ± acres of residential use supporting 500 units; 2) adding 10 ± acres of industrial use; and 3) increase the Development Plan density on the 932 ± acre Master Plan from 7,120 units to 7,800 units.

Our review of the Draft Supplemental EIS was prepared with the assistance of Anders Daniels, Meteorology; Yu-Si Pok, Civil Engineering; Jon Matsubara, School of Social Work; George Tacke, Civil Engineering; and Elizabeth Gordon, Environmental Center.

General Comments

Generally our reviewers have found the Draft Supplemental EIS minimalist, and not a very carefully proofed document. We have noted many typing errors, misspellings, and omissions which could have been avoided by attention to editorial detail. While such matters in themselves may be inconsequential, sloppy work does not promote confidence in the overall document. We offer the following comments in augmentation of information provided in the Draft Supplemental EIS.

Mr. Brian Suzuki
May 7, 1993
Page 2

Surface Water Patterns (Section III.C.3.b)

Table 1 (page 13) does not mention stormwater runoff. Where are the data used to arrive at the figure of 135 ± CFS (page 12), and under what conditions will this occur?

Historical Perspective (Section III.F)

What is the impact of the prospective closure of the Barbers Point Naval Air Station on the project (e.g., employment, housing demand, community composition, social services)? This latest development seems sufficiently significant to warrant revision of the Draft Supplemental EIS to reflect this socio-economic change.

Drainage (Section V.A.4.b)

The 1988 Final EIS reported that the anticipated peak volume passing through Keioi Gulch in the vicinity of the project is approximately 11,000 CFS (page 18). However, in the current drainage master plan, the mitigation capacity for peak flow is 9,600 CFS. How will this discrepancy affect the project? Will sheetflow impact housing areas?

Commercial Areas (Section V.B.2)

On page 32 of the document it states "no commercial areas are proposed in conjunction with the current Development Plan Amendment." However, some "light industrial uses" would seem to be commercial facilities (page 11).

Water Systems (Section V.C.5)

In recognition of critical water resource allocation needs for the Dea district, the Board of Water Supply (BWS) has adopted policies calling for the implementation of water conservation techniques. What techniques will be implemented in the construction of residential units in the new subdivision to address the BWS concerns? Is there a plan to conserve water for the project area? If so, it should be clearly referenced.

Solid Waste Management (Section V.C.6)

Why not specify a recycling collection center as part of the 10 acre light industrial use?

Wastewater (Section V.C.7)

Have you considered putting in new toilet systems to lessen problems in wastewater treatment (e.g., lowflow or dry-chemical toilets)?

Mr. Brian Suzuki
May 7, 1993
Page 3

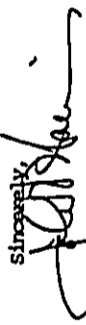
Power Systems (Section V.C.8)

Is there a plan to conserve energy use in the project area? Have you considered renewable energy collection/use systems such as hot-water solar systems and photovoltaic electricity collection systems?

Comments and Responses during the Consultation Process (Section XII)

It does not seem that the questions raised by the Department of Public Works concerning construction runoff, National Pollutant Discharge Elimination Systems (NPDES) specifics, and dewatering were explicitly addressed in the Draft Supplemental EIS as promised by the consultant.

Thank you for the opportunity to review the Draft Supplemental EIS. We hope that our comments will be helpful in the preparation of the final document. We would appreciate receiving two copies of the Final Supplemental EIS for our records.

Sincerely,

John T. Harrison
Environmental Coordinator

cc: OEGC
Gentry Pacific
Gray, Hong, Bills and Associates, Inc.
Roger Fujikawa
Anders Daniels
Yu-Si Fok
Jon Matsuo
George Tsuka
Elizabeth Gordon



Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

Mr. John T. Harrison
Environmental Coordinator
University of Hawaii at Manoa
Environmental Center, Crawford 317
2250 Campus Road
Honolulu, HI 96822

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Harrison:

We have received a copy of your May 7, 1993 correspondence sent to the Department of General Planning regarding the subject project. We are providing the following responses to your comments:

1. We appreciate your editorial comments regarding proofing in your general statement and indicating that this has lowered your confidence on the overall document. For your information, you are the only reviewer who provided any such statement. While we noticed there were some misspellings and typing errors, we do not believe the factual documentation is remiss. Nonetheless, your comments are appreciated.
2. A revised page 12 of the EIS to indicate that urbanization will increase the amount of stormwater runoff by approximately 135 cfs, as identified in the project's approved drainage report. We have further identified that the runoff is calculated by using the rationale method, as defined by the City & County Drainage Standards.
3. Your review of the the Draft Environmental Impact Statement identifies that closing of the Barbers Point Naval Air Station may be sufficiently significant to warrant revision of the Draft Environmental Impact Statement with regard to the socio-economic change. As you are also aware, as soon as the announcement was made that Barbers Point Naval Air Station would eventually be closed, there were numerous immediate suggestions on how the land should be utilized. From a socio-economic perspective, the impact is unknown, since potential plans for the area are unknown. Under one scenario, all employment opportunities may be lost if nothing is done on the Barbers Point Naval Air Station grounds, while, on the other hand, economic activities could be increased depending upon the ultimate use of the property. The purpose of the Environmental Review is to provide a statement of facts. Regardless of the ultimate disposition of the Barbers Point Naval Air Station facility, the Second City concept for the Ewa Plains will remain intact.

Brian L. Gray, PE
David S. C. Hong, PE
David B. Bills, PE
Roy T. Luik, PE
Beverly G. Foy, PE
K. Michael Nagata, PE
Raymond M. Sarno, PE

May 17, 1993

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521-0306
Fax: (808) 531-8018

Mr. John T. Harrison
May 17, 1993
Page 2


4. The 1988 Final Environmental Impact Statement reported a peak flow passing through Kaloi Gulch at approximately 11,000 cfs. The Drainage Report prepared in 1988 has been revised, and the current number recognized and approved by the City & County Department of Public Works is 9,600 cfs. Therefore, there is no discrepancy. All water is being routed through the project's golf course area and there will be no impact on housing areas.
5. The Draft Environmental Impact Statement identifies that no commercial areas are proposed in conjunction with the current Development Land Amendment. The term "commercial" is used in the context of development plan designations for which this document is being prepared. While we agree that some of the uses identified as "light industrial uses" would seem to be commercial facilities, your utilization of commercial is more of a generic fashion than that specifically intended by the Development Plan Designation.
6. Your letter indicates that there are critical water resource allocation needs for the Ewa District, and the Board of Water Supply had adopted policies calling for implementation of water conservation techniques. This is not true just for the Ewa Plains and is an item requiring island-wide consideration. To that end, current Building Code requirements specifically require the use of restricters for faucet flows and the use of low-water volume toilets.
7. Your letter suggests a recycling center be specified for the 10-acre Light Industrial Use area. This is a distinct possibility and if economics warrant such a use and there are entities interested in creating such an operation, it may come to be a reality. No specific uses have been identified for the Light Industrial area, since all uses identified by the City zoning code can be considered for the area.
8. As indicated under Item No. 7, the current Plumbing Code requires the use of low-volume toilets, and therefore it is already a reality. The Draft Environmental Impact Statement specifically suggests the use of energy-efficient systems to reduce power consumption. These energy-efficient systems are specifically identified under the Air Quality Section and are directly related to reducing energy requirements throughout the project. Please refer to page 22 of the Draft document for a specific list of numerous items which are energy-efficient or energy-renewable.
9. The Draft Supplemental Environmental Impact Statement specifically identifies that a National Pollutant Discharge Elimination System permit is required for all stormwater pipe discharges as well as grading operations. The need for the NPDES permit was also identified in the list of necessary approvals. No discussion regarding dewatering was included in the Draft Supplemental Environmental Impact Statement and none is expected for the project.

Mr. John T. Harrison
May 17, 1993
Page 3

We thank you for your comments regarding the subject project. Your comment letter to the Department of General Planning, as well as its response, will be included as a part of the Final Environmental Impact Statement.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc
2312-DEIS



DEPARTMENT OF THE ARMY
U S ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96813-5400

MEMO
ATTENTION OF

April 1, 1993

Planning Division

APR 2 1993

2312-DEIS-2

DA DB

cc: M. K. S. [unclear]

Mr. David Bills, Vice President
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Bills:

Thank you for the opportunity to review and comment on the Supplemental Environmental Impact Statement (SEIS) for the Ewa by Gentry Project, Oahu, Hawaii (TRK 9-1-69: por. 6). We do not have any additional comments beyond those provided in our previous letter dated February 1, 1993.

Sincerely,

James Q. Gentry
James Q. Gentry
Kisuk Cheung, P.E.
Director of Engineering



Gray • Hoag • Bills & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

Mr. Kisuk Cheung, P.E.
Director of Engineering
Department of the Army
U. S. Army Engineer District, Honolulu
Ft. Shafter, HI 96858

SUBJECT: Ewa By Gentry

Draft Supplemental Environmental Impact Statement

Dear Mr. Cheung:

Thank you for your comment letter dated May 1, 1993 regarding the subject project. We will enclose the comment letter as a part of the record.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.

David B. Bills
David B. Bills

DBB:sc
2312-DEIS

Baril Gay, PE
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Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

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

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Liu:

We have received a copy of your letter dated May 12, 1993 regarding the subject project. Your comments on the Draft Environmental Impact Statement, will be included in the Final Environmental Impact Statement for record purposes.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATE, INC.

David B. Bills
David B. Bills

DBB:sc
2312-DEIS

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



5090
SER M4(23)/1747
12 MAY 1993

Mr. Brian J. J. Choy
State of Hawaii
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Choy:

DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (EIS)
FOR EWA BY GENTRY, EWA, OAHU

The Navy has reviewed the Draft Supplemental EIS for Ewa by Gentry and has no comments to offer at this time.

The Navy's Point of Contact is Mr. Bill Liu who may be reached at 471-3324.

Sincerely,

W.K. Liu
W. K. LIU
FACILITIES ENGINEER
BY DIRECTION OF
THE COMMANDER



United States Department of the Interior

GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
677 Ala. Hoana Blvd., Suite 415
Honolulu, HI 96813

March 29, 1993

Mr. Matt Higashida
Department of General Planning
City and County of Honolulu
650 South King Street, 8th Floor
Honolulu, HI 96813

Dear Mr. Higashida:

Subject: Eva by Gentry, Draft Environmental Impact Statement (DEIS),
Eva, Oahu

We are in receipt of the subject DEIS. We regret that due to prior commitments, we are unable to review the DEIS by the May 7th deadline.

As requested, we are returning the DEIS to your office for your future use.

Sincerely,

William Meyer
William Meyer
District Chief

Enclosure

cc: Mr. David Bills
Gray, Hong, Bills and Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, HI 96813



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
175 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813

MAR 31 1993

3312 DESS C
DH DO

Dear Participant

Attached for your review is a Draft Environmental Impact Statement (DEIS) which was prepared pursuant to the EIS law (Hawaii Revised Statutes, Chapter 343) and the EIS rules (Administrative Rules, Title 11, Chapter 200).

TITLE OF PROJECT: EVA BY GENTRY
LOCATION: ISLAND: OAHU DISTRICT: EVA
TAX MAP KEY NUMBER: 9-1-69: POR 6

AGENCY ACTION: APPLICATION ACTION: XX

YOUR COMMENTS MUST BE RECEIVED OR POSTMAILED BY (whichever is later) MAY 7, 1993

PLEASE SEND ORIGINAL COMMENTS TO THE:
ACCEPTING AUTHORITY: DEPARTMENT OF GENERAL PLANNING
ADDRESS: CITY & COUNTY OF HONOLULU
650 SOUTH KING STREET 8TH FLOOR
HONOLULU, HI 96813
CONTACT: MATT HIGASHIDA PHONE: 521-6036

COPIES OF THE COMMENTS SHOULD BE SENT TO THE OFFICE OF ENVIRONMENTAL QUALITY CONTROL AND THE FOLLOWING:

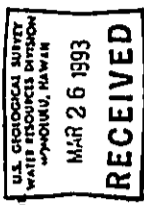
PROPOSING AGENCY OR APPLICANT:
ADDRESS:
CONTACT: PHONE:

CONTACT: PHONE:

CONSULTANT: GRAY, HONG, BILLS & ASSOCIATES, INC.
ADDRESS: 119 MERCHANT STREET SUITE 607
HONOLULU, HI 96813

CONTACT: DAVID BILLS PHONE: 521-0306

If you do not yet have an EIS, please return it to CEQC. Thank you for your participation in the EIS process.





Gray • Hong • Bills & Associates, Inc.
CONSULTING ENGINEERS

May 17, 1993

Brian L. Gray, P.E.
Daniel S.C. Hong, P.E.
David B. Bills, P.E.
Roy T. Aoki, P.E.
Beverly G. Ing, P.E.
Michael H. Acosta, P.E.
Raymond M. Sano, P.E.

119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Telephone: (808) 521 0308
Fax: (808) 531 8018

Mr. William Meyer, District Chief
United States Department of the Interior
Geological Survey, Water Resources Division
677 Ala Moana Blvd. Suite 415
Honolulu, HI 96813

SUBJECT: Ewa By Gentry
Draft Supplemental Environmental Impact Statement

Dear Mr. Meyer:

We have received a copy of your March 29, 1993 letter to the Department of General Planning regarding the subject project. It is unfortunate that due to time commitments you are unable to review the Draft Supplemental Environmental Impact Statement. However, your response will be included in the Final document for record purposes.

Should you have any questions regarding this matter, please contact our office.

Very truly yours,
GRAY, HONG, BILLS & ASSOCIATES, INC.


David B. Bills

DBB:sc
2312-DEIS

APPENDIX A

DEVELOPMENT PLAN AMENDMENT APPLICATION

**APPLICATION FOR A
DEVELOPMENT PLAN AMENDMENT
1993 ANNUAL REVIEW
EWA BY GENTRY**

Prepared by

**GRAY, HONG, BILLS & ASSOCIATES, INC.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Phone 521-0306 - Fax 531-8018**

January 11, 1993

APPLICATION FOR A
DEVELOPMENT PLAN AMENDMENT
1993 ANNUAL REVIEW

EWA BY GENTRY

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DESCRIPTION OF EXHIBITS

- Exhibit 1 Ewa By Gentry Master Plan
- Exhibit 2 Location Map for Amendment Sites
- Exhibit 3 Project Layout

EWA BY GENTRY

I. BACKGROUND

A. ESSENTIAL INFORMATION

1. Applicant: Gentry Development Company
2. Landowner: Gentry Development Company
The Estate of James Campbell
3. Request: This amendment proposal is two-fold. The existing Development for Ewa By Gentry is proposed for amendment in the following respects:
 - a. To expand the project area from the current D.P. area to include the remainder of Ewa By Gentry Master Site Plan. The remaining area is 79 acres, of which 61 acres is proposed for residential use and 18 acres are proposed for industrial use.
 - b. To amend the Development Plan residential unit count from the currently recognized 7150 units to 8300 units. This increase is 1150 units, of which 500 units are proposed in the 61.0 acre residential area identified in (a.) above and 650 units have been added throughout the existing Ewa By Gentry Development Plan boundaries.
4. Location: The amendment areas are located within and contiguous to the Ewa Gentry development
5. Addresses/Tax Map Keys: 6-1-69: Portion of 3 and 6
6. Existing Land Use: The amendment area consists predominantly of lands in sugarcane cultivation or fallowed sugarcane lands.
7. State Land Use: The entire development area is classified within the Urban District.
8. Development Plan Designation: The Development Plan for Ewa was amended in February 1989 and further refined in February 1991 and 1992 to permit development of 7150 dwelling units in Ewa Gentry. The existing D.P. land use map designations and approximate acreage are as follows:

Low Density Apartment	:	183 acres
Residential	:	499 acres
Park	:	216 acres
Public Facility	:	8 acres
Commercial	:	11 acres
		<hr/>
Total	:	917 acres

All 79 acres of the proposed amendment area are designated Agriculture.

B. DESCRIPTION OF THE PROPERTY

1. **Property Boundaries:** Exhibit 1 shows the existing Ewa By Gentry Development Plan boundaries as well as the areas proposed for addition by this amendment request.
2. **Topography/Slope:** The area proposed for amendment has gentle slope less the 5 percent with no significant topographic features.
3. **Existing Uses:** The area below Geiger Road is in sugarcane cultivation by Oahu Sugar Company. The area above Geiger Road is vacant land which has been out of sugarcane cultivation for numerous years. This site is adjacent to the City and County of Honolulu's wastewater treatment plant.
4. **Soils:** The amendment site is comprised of Malama stony silty clay loam (MnC) and Ewa silty clay loam (EMA). The land is designated prime, or other important by the Alish system.
5. **Location Map:** Exhibit 2 shows a location map for the amendment sites.
6. **Topographic Map:** Due to the fact there are 10± feet elevation difference in elevation over the amendment area, a topographic exhibit has been deleted.
7. **Project Layout:** Exhibit 3 shows the project layout within the existing Development Plan boundary area as well as within the proposed amendment area.

II. DEVELOPMENT PROPOSAL

A. APPLICANT'S PROPOSED USE OF PROPERTY

The applicant's proposal for Ewa Gentry is a planned residential community with necessary public support facilities and utilities. The existing Development Plan allows for 7150 single-family and multi-family housing units and an 18-hole golf course as well as a new elementary school and community parks.

The purpose of this application is to amend the existing Ewa Development Plan to reflect the current Master Plan for Ewa Gentry. The net effect of this amendment proposal is redesignation of approximately 79 acres from agriculture to various urban uses as follows:

Residential	:	61 acres
Industrial	:	18 acres
		—————
Total	:	79 acres

1. **Residential Development:** The single-family units will be two, three and four bedroom homes on 3200-4400 square foot lots, with some larger lots planned primarily near the proposed golf course. Densities will range from 5-10 units per acre. A total of 500 units are proposed.

The addition of the requested Residential amendment will increase the dwelling unit count from 7150 to approximately 7650 units. However, this amendment further proposes to increase the total dwelling unit count by another 650 units to bring the total Ewa By Gentry Development Plan boundary dwelling unit count to 8300. This matches the developer's Master Plan. These additional units are located within the existing Development Plan boundaries.

Unit prices will be based on market conditions at the time of sale. It is anticipated that the average single-family home will sell for approximately \$200,000 to \$300,000. A program for meeting affordable housing requirements will be developed in consultation with the Department of Housing and Community Development.

2. **Recreation and Open Space:** The proposed amendment areas are a small portion of a master planned development. While no specific recreation and open space provisions are proposed for the amendment area, this area will have full use of all the project's recreation and open space features. The residential amendment area is directly adjacent to the project's golf course. The Ewa By

Gentry Master Plan (Exhibit 1) shows the relationship of the proposed amendment areas to the project's parks and open space.

3. **Access and Circulation:** Fort Weaver Road bisects the project and will provide the primary access to Ewa Gentry. A second north-south road is planned to alleviate traffic on Fort Weaver Road and provide another major access to the development. The segment of roadway that traverses through the Master Plan area will be constructed by the applicant. The final roadway alignment outside Ewa Gentry has not yet been determined.

The project's circulation system will consist of arterials, major streets, collectors, local streets and cul-de-sacs. Arterials such as Fort Weaver road and the new north-south road will serve to connect Ewa Gentry with the surrounding region. Major streets will facilitate intra-community travel and provide access to community facilities within the development. Collector streets will collect traffic from local streets in the neighborhoods and channel it into the major street system. Local streets and cul-de-sacs will be used primarily for access to abutting parcels and will serve local traffic only. Exhibit 3 shows the proposed street layout within the amendment areas.

4. **Development Schedule:** Gentry Development Company commenced the Ewa By Gentry project in 1988 and has completed approximately 1100 units and has under construction another 500 units. With lands currently designated for development on the D.P. and the areas covered under the subject amendment petition, the petitioner proposes to build out within the next five years under the following schedule:

Year	Single-Family	Multi-Family	Total
1992	250	576	826
1993	615	668	1,283
1994	740	550	1,290
1995	873	825	1,700
1996	866	750	1,600
1997	837	750	1,601
Total	4,181	4,119	8,300

When completed, the Ewa By Gentry development will produce approximately 8300 dwelling units, a significant number to help reduce the current housing shortage.

III. NEED FOR PROPOSED DEVELOPMENT

The social and economic basis for development of Ewa Gentry has been well substantiated by various public and private market studies. You have on file with our previous petitions a 1988 market assessment for the project commissioned by the applicant. If additional copies are necessary, they can be provided.

Gentry Development Company either owns or is committed through its agreement with the Estate of James Campbell to acquire lands totalling approximately 1000 acres. A comprehensive plan was prepared for the property and a petition for a D.P. amendment was subsequently filed for the entire project. However, not all of the project area was approved. It is the purpose and request of the subject petition to amend the Development Plan to permit the development of the remaining lands.

A. RESIDENTIAL

There is one residential area proposed for amendment. This area is located between Barbers Point Naval Air Station and our proposed Golf Course/drainage way below Geiger Road. This area is appropriate for development and has been a part of the Ewa By Gentry Plan from the initial stages and can now be considered a "in-fill" area, since the West Loch Phase II is underway and the City's Department of Housing and Community Development has plans to develop those lands contiguous to Geiger Road.

B. INDUSTRIAL

A total of 18 acres of industrial land is proposed. Five (5) acres are mauka of Geiger Road between the Honouliuli Wastewater Treatment Plant and the golf course. Another 13-acre site is makai of Geiger Road opposite the treatment plant and between the Naval Air Station and the golf course.

Industrial at these locations is appropriate because it will serve as a buffer between the treatment plant and adjacent uses as well as provide industrial-type job opportunities. Certain uses appropriate to the location would be moving and storage, contractor's yard, building suppliers and similar uses.

IV. RELATIONSHIP TO STATE AND CITY PLANS

A. THE HAWAII STATE PLAN

Ewa Gentry will meet several objectives of the Hawaii State Plan (Hawaii Revised Statutes, Chapter 226, amended), including:

"Section 226-5 Objective and policies for population

(a) It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter.

(b) To achieve the population objective, it shall be the policy of this State to:

(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.

(2) Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations through the islands."

Ewa Gentry's current amendment will add 1150 dwelling units to that previously identified in prior Development Plan amendments. The total dwelling unit count will be 8300 dwelling units providing new housing opportunities for approximately 22,000 residents on Oahu and is consistent with the development of Kapolei as a second urban center.

"Section 226-6 Objectives and policies for the economy - in general

(a) Planning for the state's economy in general shall be directed toward achievement of the following objectives.

(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people.

(b) To achieve the general economic objectives, it shall be the policy of this State to:

...

- (8) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.
- (9) Foster greater cooperation and coordination between the public and private sectors in developing Hawaii's employment and economic growth opportunities."

"Section 226-7 Objective and policies for the economy - agriculture.

- (a) Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:
 - (1) Continued viability of Hawaii's sugar and pineapple industries.
 - (2) Continued growth and development of diversified agriculture throughout the state."

The development of Ewa Gentry will create diversified job opportunities and generate a demand for new retail trade and services within the Ewa District. Moreover, the proposed reduction of lands currently in sugarcane production is not expected to threaten the economic viability of Oahu Sugar Company, nor is it doubtful that urbanization of these lands would adversely affect continued growth of diversified agriculture on a statewide basis.

"Section 226-19 Objectives and policies for socio-cultural advancement - housing.

- (a) Planning for the State's socio-cultural advancement with regard to housing shall be directed towards achievement of the following objectives:
 - (1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, livable homes located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals.
 - (2) The orderly development of residential areas sensitive to community needs and other land uses.
- (b) To achieve the housing objectives, it shall be the policy of the State to:
 - (1) Effectively accommodate the housing needs of Hawaii's people.

- (2) Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group housing.
- (3) Increase home ownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing."

Ewa Gentry currently has Development Plan/General Plan authorization to provide 7150 new housing units for Oahu residents. It will offer a variety of housing types at prices that will be highly competitive with other private projects planned in Ewa and Central Oahu. The current amendment will increase the Development Plan/General Plan authorization to 8300 units.

B. STATE HOUSING FUNCTIONAL PLAN

This plan provides for the identification of lands suitable for housing development, including water availability, proximity to existing and planned urban development, use of existing urban lands, avoidance of critical environmental areas, and consideration of the cost of building infrastructure and providing open space.

The entire Ewa Gentry development area has been designated for urban use by the State Land Use Commission. Moreover, the project meets all significant development criteria under the State's Housing Functional Plan.

C. CITY & COUNTY OF HONOLULU GENERAL PLAN

Continued development of Ewa Gentry will promote the following General Plan Objectives and Policies:

"Population Objective C

To establish a pattern of population distribution that will allow the people of Oahu to live and work in harmony.

Policy 2: Encourage development within the secondary urban center at Kapolei and the Ewa and Central Oahu urban-fringe areas to relieve developmental pressures in the remaining urban-fringe and rural areas and to meet housing needs not readily provided in the primary urban center.

Policy 4: Seek a year 2010 distribution of Oahu's residential population which would be in accord with the following table:

Location	% of Year 2010 Islandwide Population	
Primary Urban Center	45.1 -	49.8%
Ewa	12.0 -	13.3%
Central Oahu	14.9 -	16.5%
East Honolulu	5.3 -	5.8%
Koolaupoko	11.0 -	12.2%
North Shore	1.6 -	1.8%
Waianae	3.8 -	4.2%
	95.0 -	105.0%

Ewa Gentry will enhance development of the secondary urban center at Kapolei. The project is consistent with the desired residential population distribution for the Ewa area and will be built at densities comparable to other urban fringe communities such as Waipio Gentry.

"Housing Objective A

To provide decent housing for all the people of Oahu at prices they can afford."

"Housing Objective C

To provide the people of Oahu with a choice of living environments which are reasonably close to employment, recreation, and commercial centers and which are adequately served by public utilities.

Policy 1: Encourage residential developments that offer a variety of homes to people of different income levels and to families of various sizes.

Policy 2: Encourage the fair distribution of low- and moderate-income housing throughout the island.

Policy 3: Encourage residential development near employment centers."

Ewa Gentry will provide 8300 new housing units in close proximity to the secondary urban center and other existing and proposed employment centers in Ewa, Waipahu, Waipio, Pearl City and Wahiawa. The project will produce a variety of housing types for a broad range of income groups and household sizes, at prices that will be highly competitive with other private projects planned in Ewa and Central Oahu. A sizeable percentage of the units will be affordable to low-moderate, moderate and gap-group income households.

Ewa by Gentry

Preliminary Land Use Plan

(ALL AREAS HAVE RECEIVED
DEVELOPMENT PLAN AMENDMENTS
UNLESS OTHERWISE NOTED)

18 ACRES
AGRICULTURAL
TO INDUSTRIAL

61 ACRES
AGRICULTURAL
TO RESIDENTIAL

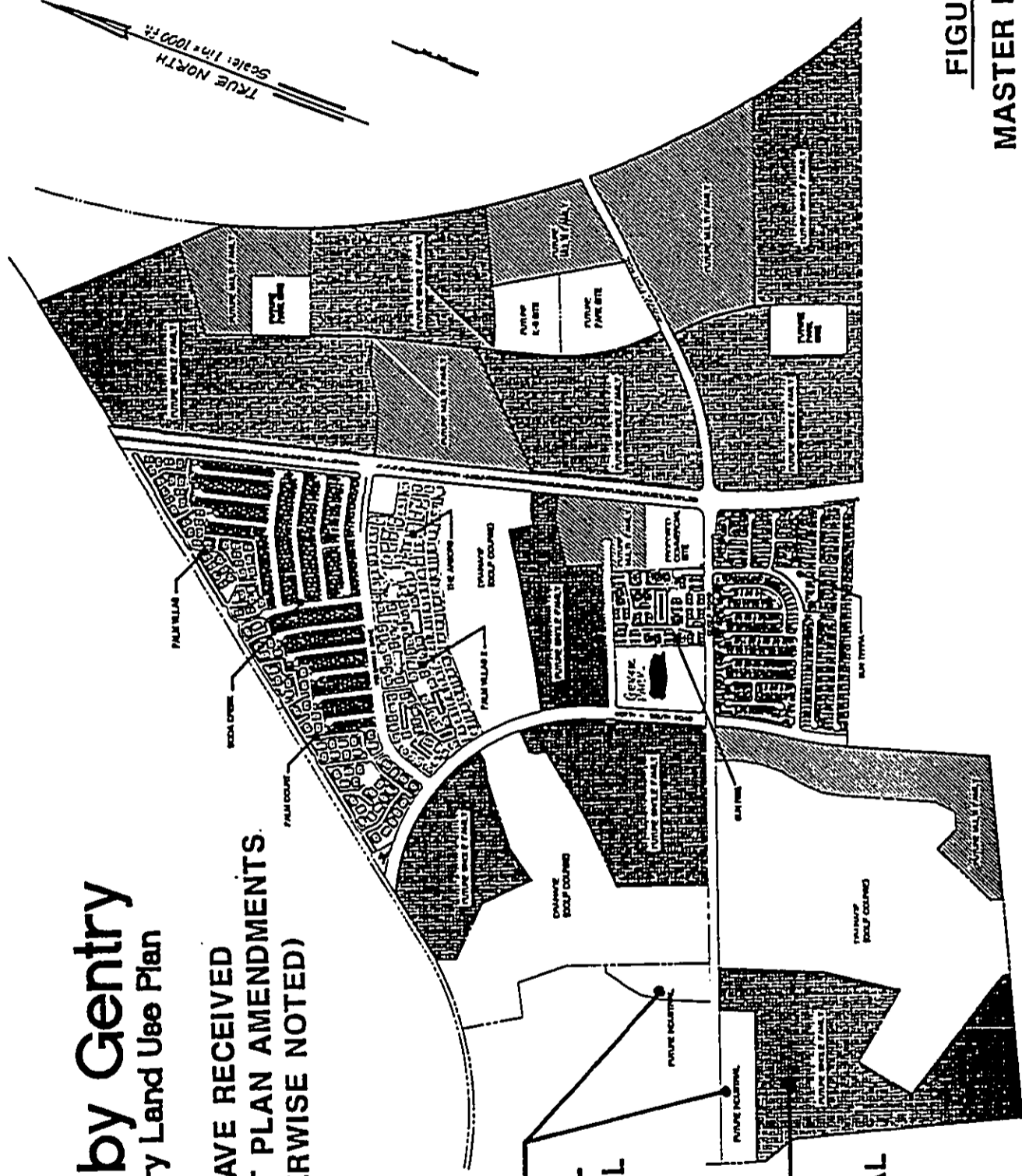
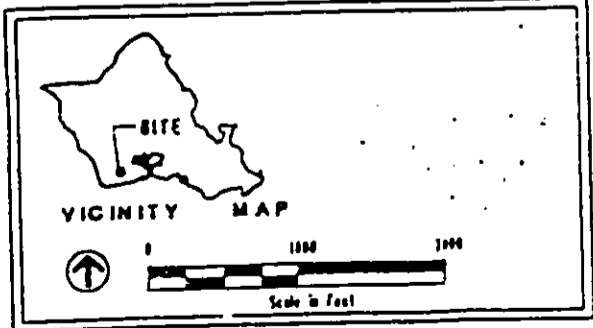
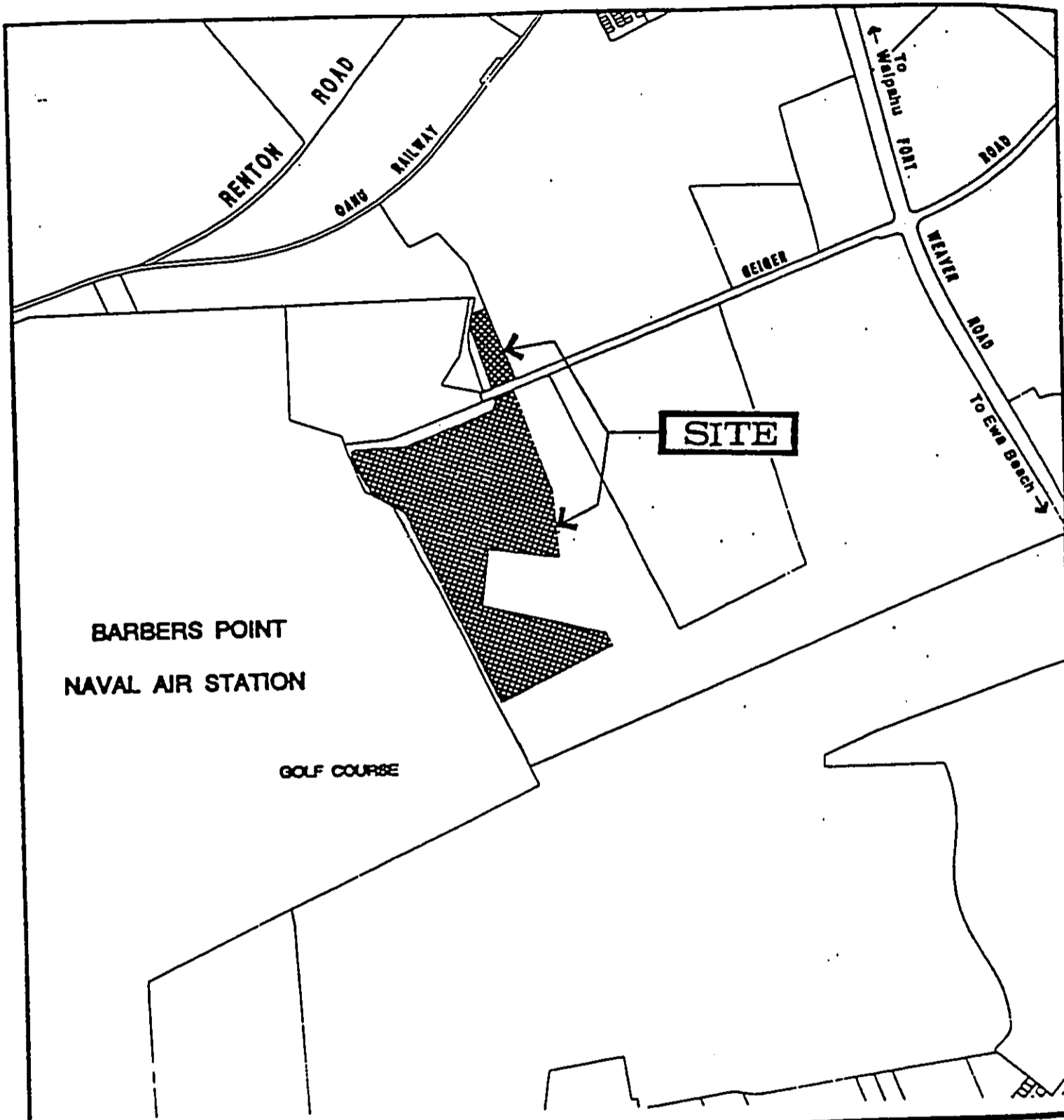


FIGURE 1
MASTER PLAN



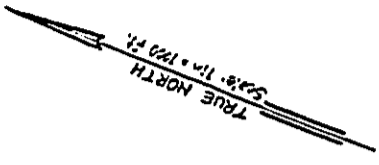
LOCATION MAP

FIGURE 2

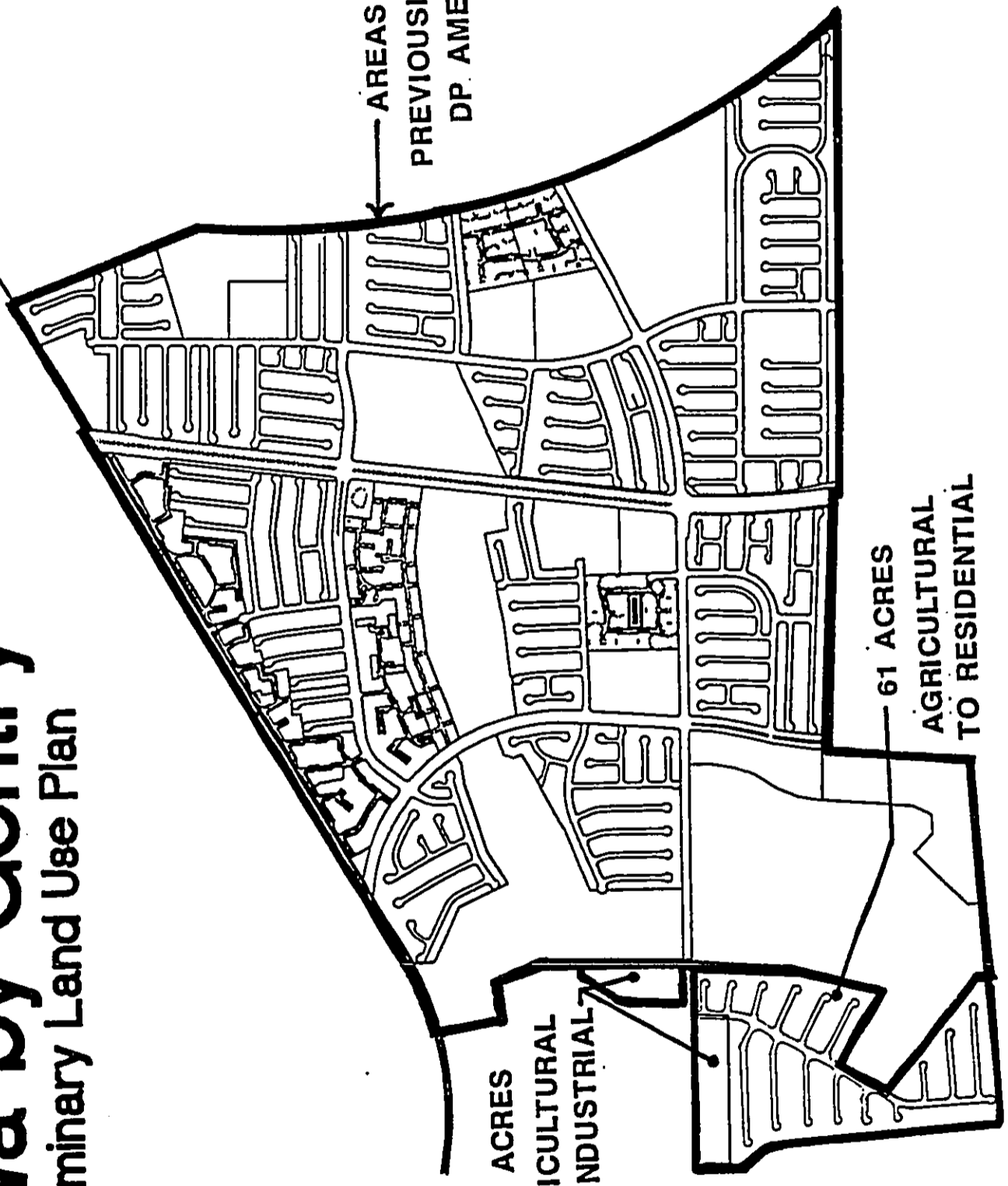
TAX MAP KEY : 9-1-61: por. 10 & por. 6
9-1-69: por. 3 & por. 5

Ewa by Gentry

Preliminary Land Use Plan



AREAS HAVING
PREVIOUSLY RECEIVED
DP AMENDMENTS



18 ACRES
AGRICULTURAL
TO INDUSTRIAL

61 ACRES
AGRICULTURAL
TO RESIDENTIAL

FIGURE 3
ROADS & CIRCULATION

APPENDIX B

ENVIRONMENTAL ASSESSMENT CIRCULATED

WITH EIS PREPARATION NOTICE

ENVIRONMENTAL ASSESSMENT

EWA GENTRY

JANUARY, 1993

Prepared by

**GRAY, HONG, BILLS & ASSOCIATES, INC.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
Phone 521-0306 - Fax 531-8018**

January 11, 1993

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**ENVIRONMENTAL ASSESSMENT
EWA GENTRY
JANUARY, 1993**

Applicant: Gentry Properties
560 N. Nimitz Highway, Suite 301
Honolulu, Hawaii 96817

Approving Agencies: Department of General Planning
City & County of Honolulu

**Agencies Consulted
State:** Department of Land and Natural Resources
Department of Transportation
Department of Health

County: Department of General Planning

I. PROJECT CHARACTERISTICS

A. Background

In conjunction with a Development Plan Approval granted by the Department of General Planning in 1988, Gentry Properties prepared a Chapter 343 Environmental Impact Statement (EIS) covering 7150 residential units on 932 acres. The project included schools, parks and golf course. The project layout addressed in the EIS is shown on Figure 1. Infrastructure improvements included roadways, sewers, drainage systems, water systems and electrical distribution improvements. The EIS prepared for Ewa By Gentry was accepted by the Department of General Planning in April, 1988.

B. Current

Ewa By Gentry wishes to extend the Development Plan Boundaries identified in the 1988 EIS to incorporate an additional 61 acres of residential development as well as incorporate 18 acres of industrial development. Figure 1 shows the currently proposed boundaries of Ewa By Gentry with the 61 acres residential addition and 18-acre industrial addition highlighted.

The 1988 EIS addressed 7150 dwelling units while the current master identifies 8300 dwelling units. However, only 500 dwelling units are proposed on the 61-acre residential parcel. The difference (650 units) has gradually been added to the existing master plan boundaries since 1988.

An Environmental Impact Statement will be prepared in conjunction with the redesignation of 79 ± acres from Agricultural use to Residential and Industrial use as shown on Figure 1. In addition, the EIS will address the Ewa By Gentry ultimate project density of 8300 units which is 1150 units above that analyzed in the 1988 EIS.

II. TECHNICAL CHARACTERISTICS

The project primarily consists of site improvements including grading, roadways, drainage, water system, sewer system and building construction on 79 acres of land to support 500 residential units and 18 acres of leasable industrial lots. Figure 2 shows a location map and Figure 3 shows the roadways for the project.

A. Economic

Development of 61 acres of residential land and 18 acres of industrial land is anticipated to cost \$100,000,000. This will create saleable residential units and leasable industrial lots. Anticipated revenues are \$125,000,000 to \$150,000,000.

B. Social

Ewa By Gentry residential development is providing housing for people with income levels beginning with affordable income levels through upper middle income levels. In addition, Ewa By Gentry is contributing to creation of jobs in the Ewa area by creating industrial properties.

C. Environmental

The project will increase the number of residential units on the Ewa plains from a previously-projected 7150 units to 8300 units. This will place additional requirements on traffic, resulting in secondary air emissions; sewage disposal affecting collection systems and the City and County wastewater treatment system; water supply, including source depletion and increased stormwater runoff potentially resulting in surface water quality degradation.

The project will have to update existing master plans with respect to traffic, water systems, sewer systems, drainage systems prior to commencement of the project.

III. SUMMARY OF THE AFFECTED ENVIRONMENT

The 79 ± acres of land proposed for redesignation are currently cultivated with sugarcane. There are no known endangered fauna, critical habitats,

historical/archaeological or cultural sites on the property. This is supported by the fact that 932 acres of adjacent land were evaluated in the 1988 Ewa By Gentry EIS and no significant affected environmental issues were identified.

IV. SUMMARY OF MAJOR IMPACTS AND PROPOSED MITIGATION

A. Air Quality

Impact: Air quality deterioration is anticipated from construction activities, increased vehicular traffic and increased fuel combustion at electrical generating stations and solid waste incinerators.

Mitigation: Short-term construction activity on air quality impacts will be mitigated by project management of construction activities, including wetting of loose soils and prompt landscaping of bare areas.

Impacts from vehicular emissions can be mitigated by use of cars with better emission controls as well as development of transportation systems which increase rider occupancy and decreased dependence on the passenger vehicle. In addition, development of jobs on the Ewa Plain will reduce vehicle miles necessary to get to and from work--thus reducing cumulative amount of vehicular emissions.

B. Traffic

Impact: Ewa By Gentry growth from 7150 units to 8300 units will increase traffic congestion on local, collector and regional traffic routes.

Mitigation: The developer will provide local and collector roadway improvements to accommodate increased traffic. The State of Hawaii Department of Transportation has completed the Ewa Regional Highway Transportation Master Plan. The project will be contributing its fair share to the Master Plan's implementation.

C. Sewage Disposal

Impact: There currently is insufficient sewage disposal capacity available from the City and County system, the Ewa By Gentry project. The availability of sewage disposal through the Honouliuli Wastewater Treatment Plant system will be determined in part by the outcome of legal proceedings between the Sierra Club, et al, and the City and County of Honolulu. In addition, the disposition of the City and County's 301(h) waiver request must be resolved. The waiver is subject to an evidentiary hearing procedure.

Mitigation: Adequate sewage disposal will ultimately be available, as dictated in part by the events identified above. The City and County of Honolulu will ultimately provide wastewater treatment for all portions of the Ewa By Gentry Project which are developed.

D. Water Systems

Impact: There is a maximum sustainable amount of water available for potable uses on the Ewa Plain. The project will require a portion of this sustainable yield.

Mitigation: Ewa By Gentry is a member of the Ewa Plain Water Development Corporation which is responsible for providing off-site water facilities, including adequate source development for the projects on the Ewa Plain. The increased demand of 1150 units must be accommodated in this water master plan. If this requirement is met, the impact on the water systems will have been mitigated. Currently, Ewa By Gentry has a water source allocation for 8500± units and their Master Plan calls for 8300 units.

E. Drainage/Source Water Quality

Impact: Urbanization will increase the amount of stormwater runoff and can potentially affect the quality of the storm water discharge.

Mitigation: The 79-acre project proposed for General Plan Redesignation already has Preliminary Drainage Plan approval from the City & County of Honolulu. During construction plan preparation, all specific drain outlets will be evaluated to determine if monitoring is required with respect to surface water quality contaminants. The only routinely anticipated constituent in the surface drainage is turbidity resulting from sediment.

F. Noise

Impact: The proposed amendment area is in close proximity to Barbers Point Naval Air Station, which routinely has military aircraft traffic. There is a potential for a noise impact on residential development.

Mitigation: An Air Installations Compatible Use Zones (AICUZ) Study was prepared to assess noise levels associated with Naval Air Station air traffic. Through joint cooperation between the Navy and the Estate of James Campbell, flight patterns were modified to produce an LD_N of 55 or less in the proposed amendment area.

G. Odor

Impact: The residential portion of the proposed amendment is in close proximity to the Honouliuli Wastewater Treatment Plant facilities. There is a potential for sewage odors to impact neighboring properties.

Mitigation: Odor can be mitigated by one or more of the methods listed below:

1. Capture and destroy odors at their source. In this case, the source is the Wastewater Treatment Plant. The City and County of Honolulu is currently installing an extensive odor treatment system.
2. Enclose and air-condition residential dwelling units.
3. Create larger buffer zones between the wastewater treatment plant and development.

H. Residential Proximity to Golf Course

Impact: The proposed residential amendment area is directly adjacent to the Ewa By Gentry golf course. Recent studies have attempted to correlate increased health risks from pesticide/herbicide applications associated with golf courses.

Mitigation: The increased health risks have been suggested by a few studies. However, there are no definitive conclusions which are universally accepted. Regardless, good golf course maintenance practices will minimize health risks for residents, as well as reduce chemical maintenance costs for the golf course.

V. ALTERNATIVES

- A. The "no-action" alternative was considered but deemed unacceptable by the applicant since it would not allow completion of the Ewa By Gentry Master Plan created in the 1980's.
- B. A reduced level of development was considered but deemed unacceptable by the applicant for the same reason as the "no-action" alternative.

VI. DETERMINATION

The proposed amendment consisting of 79± acres of residential and industrial land use redesignation combined with an overall project unit density increase of 1150 units has the potential to cause significant environmental impact. Therefore, it has been determined that an Environmental Impact Statement Preparation Notice will be filed.

A. FINDINGS AND REASONS SUPPORTING DETERMINATION

1. The proposed amendment extends the boundaries examined in the 1988 EIS. Therefore, comprehensive re-examination of project is deemed necessary to determine the effects on the following items:
 - a. The General Plan with respect to population, economic activity, housing, transportation and utilities.
 - b. The proposed amendment area will be adjacent to the City and County Honouliuli Wastewater Treatment Plant and the effects of odor must be evaluated.
 - c. The proposed residential amendment area is in close proximity with Barbers Point Naval Air Station and the noise impact from aircraft requires evaluation.
2. The foregoing items may potentially result in:
 - a. Substantial secondary impacts, such as population changes or effect on public facilities.
 - b. Curtailment of the beneficial use of the environment.
 - c. Individually limits impacts, but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.
 - d. Detrimental effects on air or water gravity or ambient noise levels.

For the reasons above, the proposed project will potentially have significant effect in the context of Chapter 343, Hawaii Revised Statutes and Section 11-200-12 of the State Administrative Rules.

VII. LIST OF AGENCIES TO BE CONSULTED

Federal Agencies

Department of Agriculture, Soil and Conservation Service
Department of Army, U. S. Army Engineer District, Honolulu
Department of the Navy, Naval Air Station, Barbers Point
Department of the Interior, Fish and Wildlife Service

State Agencies

Department of Accounting and General Services
Department of Agriculture
Department of Business, Economic Development and Tourism
Department of Education
Department of Health
Department of Health, Environmental Management Division
Department of Land and Natural Resources
Department of Land and Natural Resources, State Historic Preservation Division
Department of Transportation
Land Use Commission
Office of Environmental Quality Control
Office of State Planning
University of Hawaii Environmental Center

County Agencies and Boards

Department of General Planning
Department of Housing and Community Development
Department of Land Utilization
Department of Parks and Recreation
Department of Public Works
Department of Transportation Services
Building Department
Board of Water Supply
City Council
Fire Department
Police Department

Public Utilities

Hawaiian Telephone Company
Hawaiian Electric Company

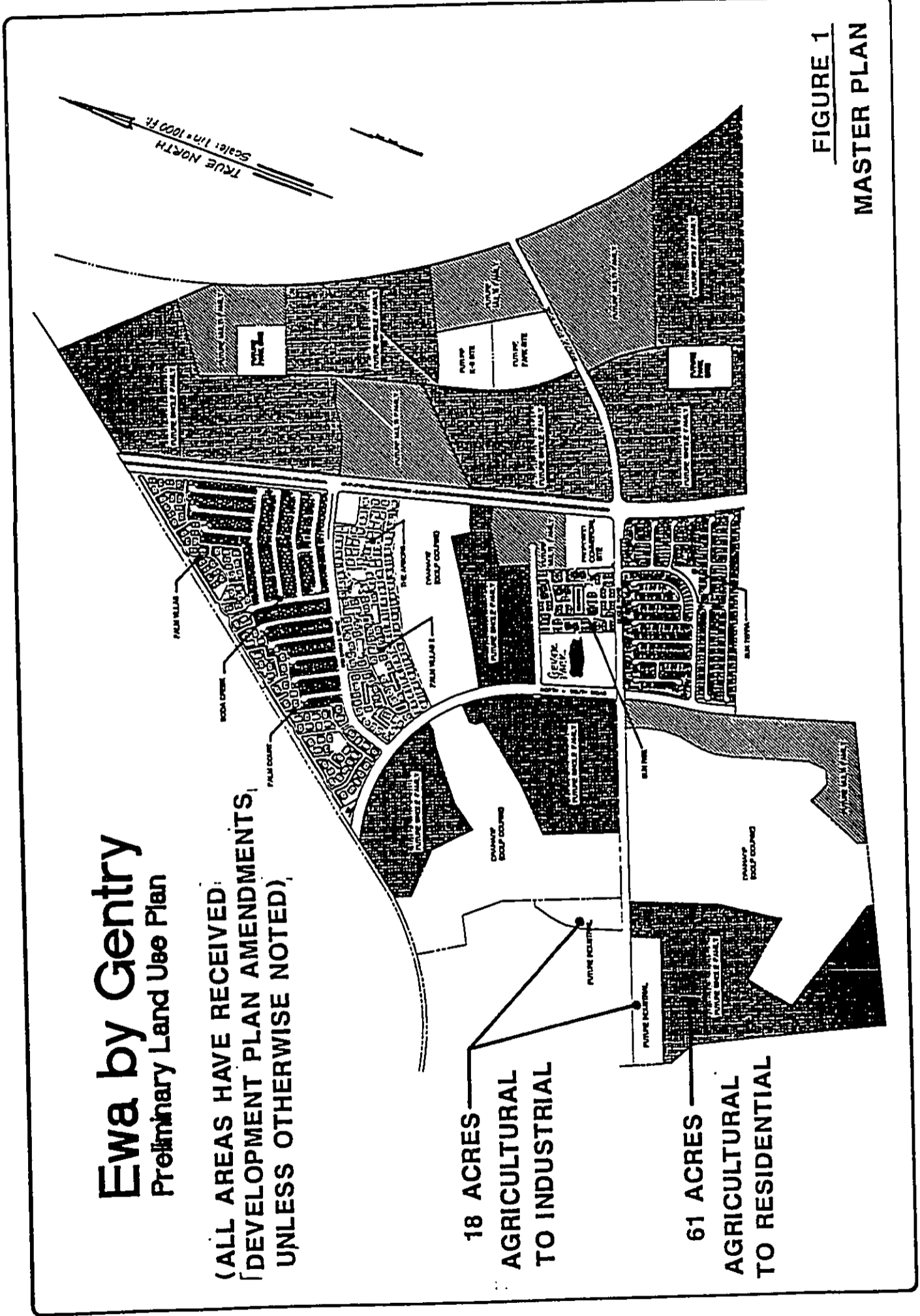
Neighborhood Boards, Community Associations, Other

Ewa Neighborhood Board No. 23
Ewa Beach Community Association
Ewa Housing Foundation
Ewa Coordinating Committee
Honokai Hale/Nanakai Gardens Community Association
Makakilo Community Association
Waianae Coast Neighborhood Board No. 24
Hawaiian Independent Refinery
Chevron USA
Estate of James Campbell
Oahu Sugar Company
Waipahu Neighborhood Board No. 22
Waipahu Community Association
American Lung Association

Ewa by Gentry

Preliminary Land Use Plan

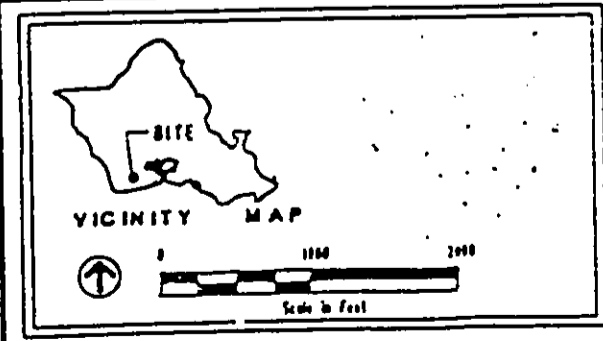
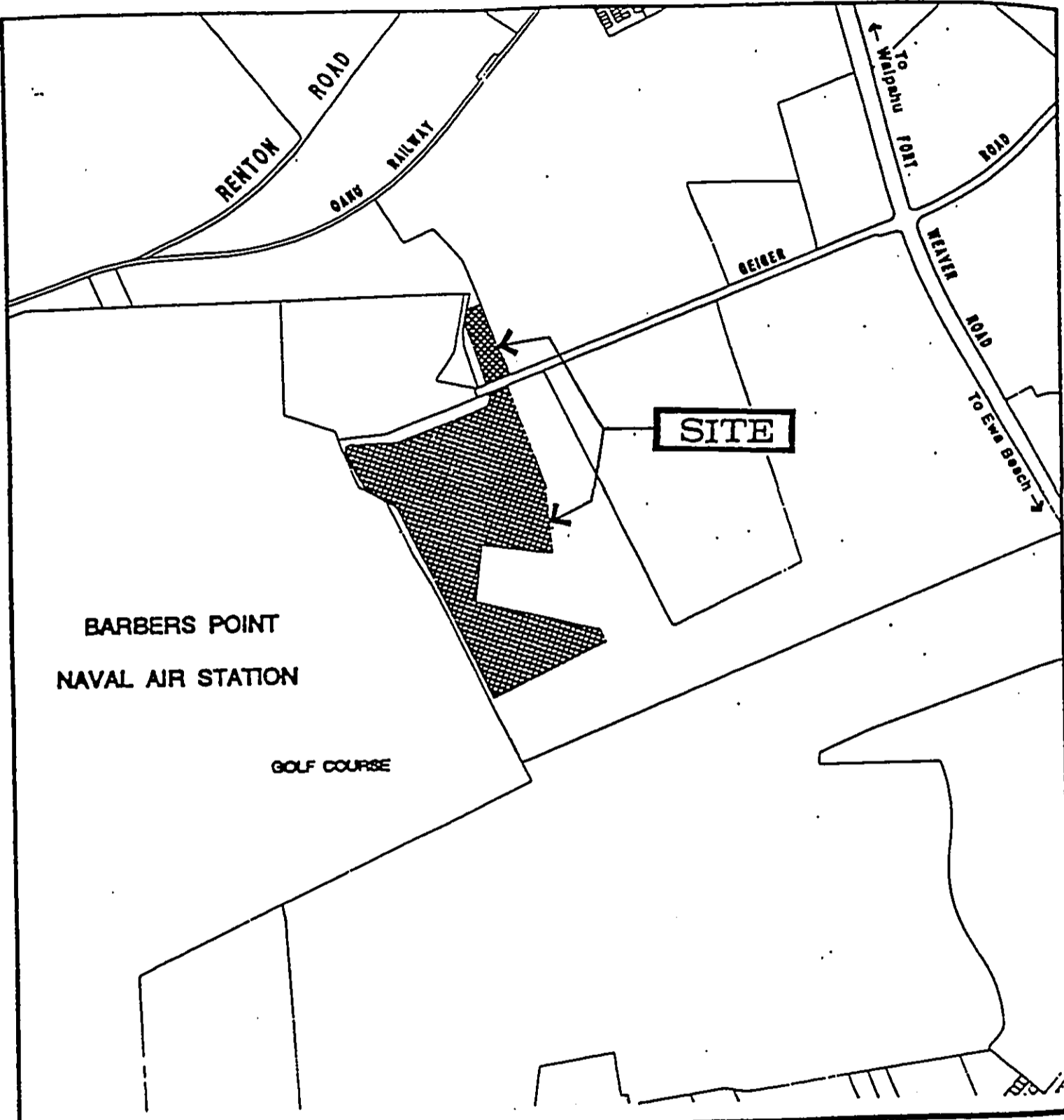
(ALL AREAS HAVE RECEIVED
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18 ACRES
AGRICULTURAL
TO INDUSTRIAL

61 ACRES
AGRICULTURAL
TO RESIDENTIAL

FIGURE 1
MASTER PLAN



LOCATION MAP
FIGURE 2
 TAX MAP KEY : 9-1-61: por. 10 & por. 6
 9-1-69: por. 3 & por. 5

Ewa by Gentry

Preliminary Land Use Plan

TRUE NORTH
SCALE: 1" = 100' FT.

AREAS HAVING
PREVIOUSLY RECEIVED
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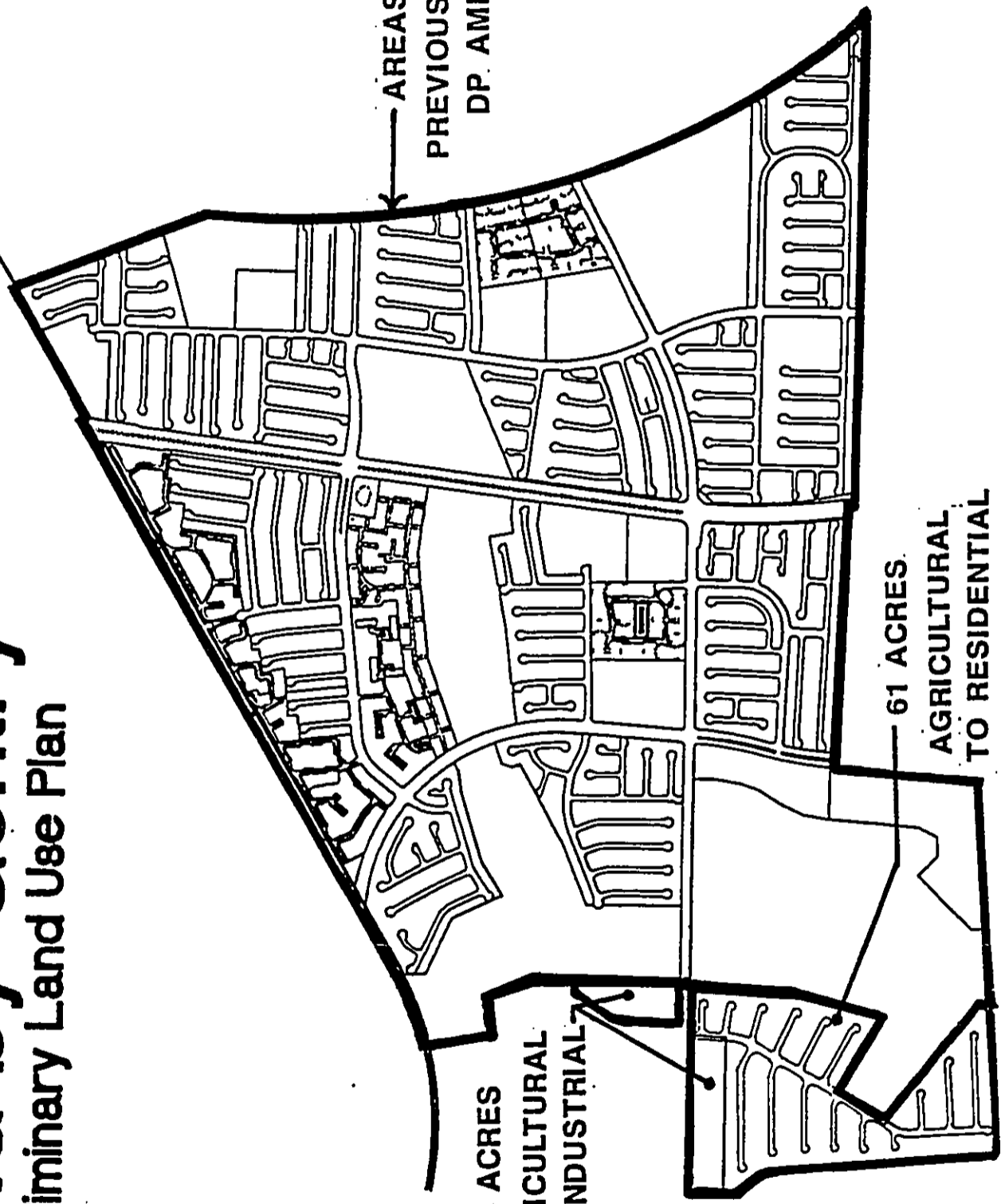


FIGURE 3
ROADS & CIRCULATION

APPENDIX C

EWA REGION HIGHWAY MASTER PLAN

**EWA REGION
HIGHWAY TRANSPORTATION
MASTER PLAN**

**1997 AND 2005
ROADWAY CONCEPTS**

Revised November 1992

Ewa, Oahu, Hawaii

**Prepared for:
Ewa Region Highway Master Plan
Working Group**

**Pacific Planning & Engineering, Inc.
1221 Kapiolani Boulevard, Suite 740
Honolulu, Hawaii 96814**

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FOREWORD

The State of Hawaii, City and County of Honolulu, and the major developers in the Ewa region are members of a working group to develop and fund the *Ewa Region Highway Master Plan*. To develop the Plan, a regional transportation study is needed to identify the roadway improvements that facilitate development of the Ewa region on Oahu, including the secondary urban center of Kapolei.

This report describes the transportation study and the Master Plan. The Ewa Master Plan consists of two phases -- 1997 and 2005. The recognized long-range plan for highways on Oahu is maintained by the Oahu Metropolitan Planning Organization (OMPO). The year 2005 was selected in order to meet the OMPO requirement that the Master Plan conform to their current long-range plan. Year 1997 was used to assist in determining the sequence and timing of the needed roadways.

Participants

The government agencies, listed below, provide planning data and guidance in the development of the Ewa Region Highway Master Plan.

- State Department of Transportation (DOT)
- City Department of Transportation Services (DTS)
- Oahu Metropolitan Planning Organization
- Office of State Planning
- City Department of General Planning
- City Department of Land Utilization

The members of the Developers Working Group include the developers of the major land use projects in the Ewa region. In this Group, the State and City agencies which are responsible for the production of new residential units in the area are considered as developers, as identified in the following list.

- Department of Housing and Community Development,
City and County of Honolulu
- Estate of James Campbell
- Finance Realty Company, Ltd.
- Gentry-Pacific, Ltd.
- Halekua Development Corporation
- HASEKO (Hawaii) Inc.
- Housing Finance and Development Corporation, State of Hawaii
- West Beach Estates

Background

The development of Kapolei as the secondary urban center on Oahu involves major infrastructure improvements. The Ewa Region Highway Master Plan identifies the regional roadway system for the Ewa area. The Plan also serves as a basic element for the other components of an integrated transportation system, such as mass transit (buses, express buses and rail transit), ridesharing, park-n-ride lots, and high occupancy vehicle lanes; these components may be added with growth of the City of Kapolei. Accordingly, the Ewa Region Highway Master Plan should be viewed as a working plan and revised as needed to maintain consistency with the on-going land use development of the Ewa region.

Roadway Improvement Phasing

The Master Plan Study addresses two phases: 1997 and 2005. For each of these phases, traffic volumes are forecasted and the roadway improvements are identified to accommodate the projected traffic. The 1997 phase also includes a cost estimate of the identified improvements and development of a cost sharing procedure among the developers and appropriate government agencies for funding these improvements. (The Master Plan does not contain travel data, forecasts, needs, etc. for years not specified. Similar tasks, as described below, would need to be undertaken should such information for other years be required.)

Tasks

The Ewa Master Plan is based on results of the following four tasks:

Task 1. Forecast traffic volumes for the years 1997 and 2005.

The future land uses for each of the study years are obtained from project land use information provided by the members of the Developers Working Group and regional information from government agencies. A transportation computer program is utilized to forecast future traffic volumes on the regional roadway network.

Task 2. Identify needed road improvements.

The needed roadway improvements are derived from traffic forecast results and capacity analysis results. Separate roadway plans are presented for years 1997 and 2005. The roadway improvements in each of the phases are sequenced so that subsequent improvements incrementally build upon the earlier

improvements. The plans were reviewed by the governmental agencies and the developers.

Task 3. Develop cost estimates of the 1997 roadway improvements.

Preliminary cost estimates for the 1997 roadway improvements were developed.

Task 4. Develop cost sharing method to fund 1997 improvements.

Possible cost sharing methods are currently being formulated to distribute the 1997 roadway improvement costs among the developers and appropriate government agencies. The major issues concerning the different forms of agreements and management of funds, excluding legal issues, are also being identified. The governmental agencies will be responsible for developing the administrative aspects of the agreements.

INTRODUCTION

This report describes the methodology and guidelines used to determine the Ewa region roadways for the 1997 and 2005 phases of the Ewa Region Highway Master Plan, the roadway improvements identified for each phase, and the cost estimate for the 1997 roadway improvements. Discussions on alternative distribution methods for the cost sharing of 1997 improvements are on-going and results are not available for this report.

This report describes the transportation study and the Master Plan. The Ewa Master Plan consists of two phases -- 1997 and 2005. The recognized long-range plan for highways on Oahu is maintained by the Oahu Metropolitan Planning Organization (OMPO). The year 2005 was selected in order to meet the OMPO requirement that the Master Plan conform to their current long-range plan. Year 1997 was used to assist in determining the sequence and timing of the needed roadways.

Master Plan Area

The Master Plan area extends from Kahe Point to the Kunia Interchange, as shown in Figure 1, and generally conforms to the boundary of the City and County of Honolulu Ewa Development Plan Area. The Royal Kunia and Village Park developments along Kunia Road are also included in the Master Plan due to their traffic impact on H-1 Freeway in the Ewa region. Figure 1 also presents the existing regional roadway system within the Master Plan area.

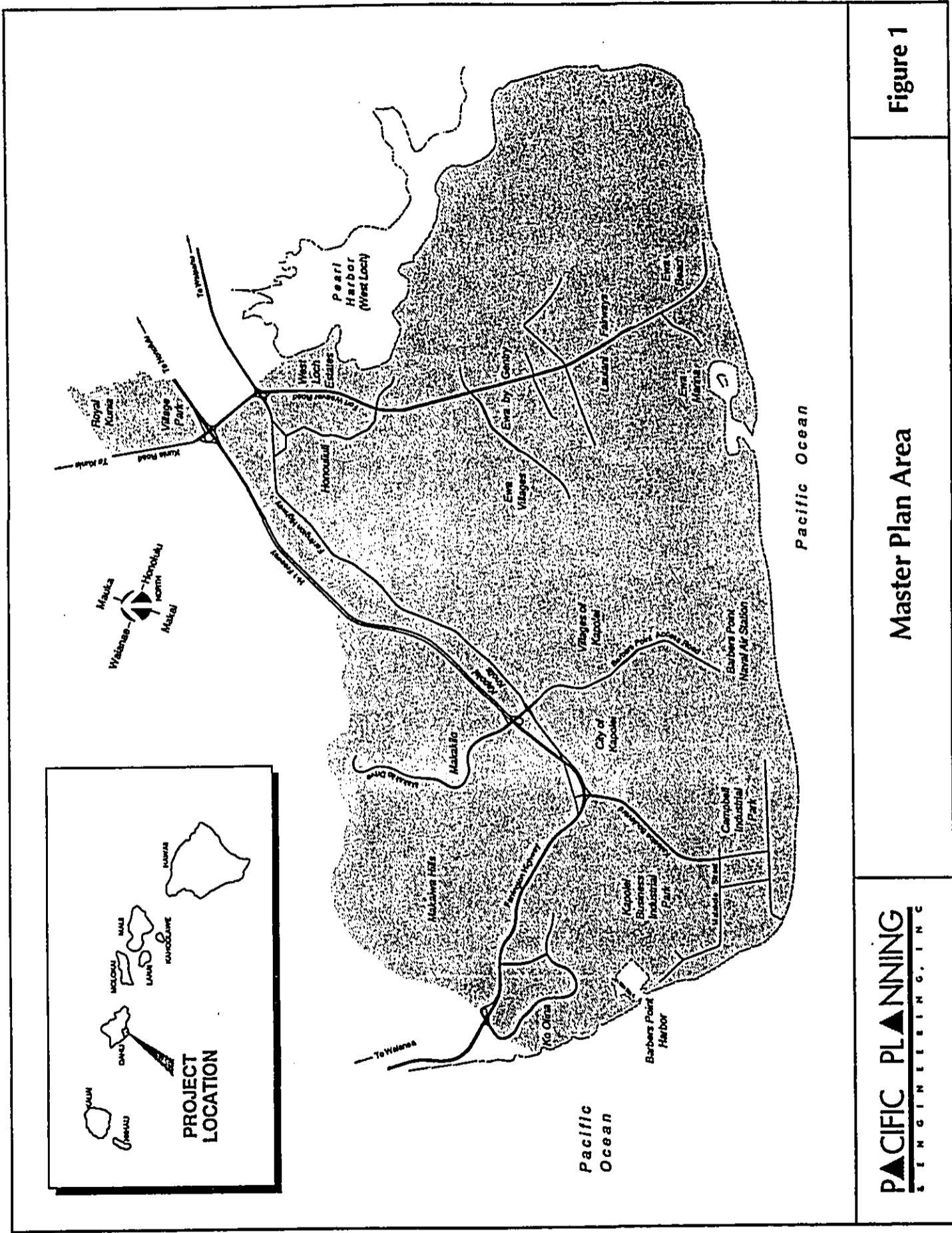


Figure 1

Master Plan Area

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Master Plan Phases

The Master Plan has two phases: years 1997 and 2005. Year 1997 was selected to determine the near-term roadway improvements. The year 2005 was specified in order to be consistent with the HALI 2005 study, which is the current long-range transportation planning study for Oahu as administered by the OMPO. The OMPO required that the Master Plan be consistent with HALI 2005 to be eligible for federal funding of projects.

Premises of the Master Plan

The Ewa Region Highway Master Plan is Ewa's regional transportation master plan which identifies roadway improvements to support the development of the proposed Ewa developments. The Master Plan is based on the following planning premises and which guide the application of the Master Plan.

- The Ewa region land use scenarios for each of the Master Plan phases are based on information from the individual developers and by the City Department of General Planning.
- Changes to the projects' land uses or their completion schedules will affect the traffic forecasts. The significance of the impact of these changes on the identified roadway improvements must be addressed on a case-by-case basis.

- Since the Ewa region is a subarea of Oahu, the traffic forecasts external to the Ewa region were correlated to the appropriate HALI 2005 screenlines¹. The HALI 2005 study, prepared for the OMPO, provided estimates of regional traffic volumes for the entire island of Oahu.
- The Master Plan focuses on serving regional traffic needs, e.g., facilities such as freeway laneage and interchange ramps or highway and major arterial laneage and their intersections. Local intersections, which provide access for individual projects, are not analyzed as part of the Master Plan roadway network.
- The roadway improvements identified for each phase of the Master Plan will accommodate the regional traffic forecasted for that particular phase. The schematic diagrams of roadway, interchange, and intersection roadway geometrics presented in this report are for planning purposes only and should be verified during roadway project planning and design stages.
- Alternate roadway improvement schemes or layouts could be investigated during the subsequent planning and design stages of the individual transportation improvements.
- The environmental and socio-economic impact of the proposed roadway improvements may need to be studied in further detail. The study and selection of alternative improvements would be affected by the identification and assessment of these impacts.

¹ A screenline is an imaginary line which intersects all parallel roadways in a particular area or corridor. The total traffic crossing a screenline at the intersection points are termed corridor traffic volumes, and are used as forecasting and analytical measures.

- The cost estimate for 1997 roadway improvements is for planning purposes only; more accurate construction costs can be determined in the design/bidding stage or when details such as the roadway alignment, soil conditions, and provision of utilities have been determined.

METHODOLOGY

The land uses and traffic forecasts for the Ewa area are based on information from several sources, including the City Department of General Planning islandwide land use forecasts, the HALI 2005 islandwide traffic projections², and the detailed land uses provided by the Ewa developers. The standard three step procedure of trip generation, trip distribution, and traffic assignment are used to estimate the traffic volumes within the Ewa region for the 1997 and 2005 phases. The Quick Response System II (QRS II) transportation planning computer model is used to simulate the distribution and assignment of traffic in the Ewa region.

Department of General Planning Forecasts

The State of Hawaii Department of Business, Economic Development and Tourism (DBED&T) develops statewide and county forecasts of population and employment. Each county distributes the DBED&T projected population and employment within its jurisdiction, according to existing and proposed land uses and planning guidelines.

The City and County of Honolulu Department of General Planning (DGP) is responsible for maintaining land use forecasts for the island of Oahu. DGP estimates of employment, population, and housing for the Ewa Development Plan area were used to assess the corresponding land use totals derived from the developer's projected completion schedules.

² HALI 2005: Working Paper 2--Travel Demand Forecasts. Prepared by Wilbur Smith Associates for the Oahu Metropolitan Planning Organization, Draft, September 1989.

HALI 2005 Forecasts

HALI 2005 is the regional transportation plan for the island of Oahu developed by the OMPO. The Master Plan traffic forecasts are correlated to the HALI 2005 forecasts at the Kahe Point and Waikele screenlines, which are situated just beyond the Master Plan area in the Waianae and Honolulu direction. This method is based on discussions with OMPO to ensure that the Ewa Region Highway Master Plan forecasts are compatible with the HALI 2005 forecasts. This effort is purposefully undertaken so that Master Plan roadway improvements would be eligible for available federal funding.

In transportation planning, screenlines are used to assess the travel demand between regions. For instance, the Kahe screenline represents traffic demand between the Waianae Development Plan area and the rest of Oahu. The Waikele screenline provides an indication of travel on the H-1 Freeway and Farrington Highway between Honolulu and the region west of the Waipahu area.

Screenline values for the 1997 phase are derived from HALI 2005 traffic volumes using the Fratar Model. The model adjusts traffic volumes based on islandwide land uses for the Master Plan phases. For example, the traffic forecasts contained in the HALI 2005 report are adjusted in relative proportion to the 1997 and 2005 land use scenarios to determine appropriate screenline values for year 1997.

Land Uses

The land uses (i.e. housing and employment) for the projects included in the Master Plan were based on the individual developer projections of land uses and completion schedules. Estimates of existing land uses were based on available data.

The DGP land use forecasts and HALI 2005 traffic forecasts include construction employment and work trips. To maintain consistency with these agency forecasts, construction jobs are added to employment estimates of the Ewa developers for the Master Plan area.

The land use data for existing areas, such as Barbers Point Naval Air Station, Honokai Hale, Nanakai Gardens, Ewa Beach and Iroquois Point, are obtained from various sources, including DGP estimates, tax maps and other research. However, the land use information obtained for these areas, especially the military bases, is difficult to confirm and could not be as detailed as the developer land use projections.

The land use projections for each of the Master Plan phases are compared to DGP forecasts for the Ewa Development Plan area. The land use scenarios for each of the phases are approved by the Developers Working Group and governmental agencies.

Roadway Network

The Ewa region is sub-divided into smaller areas, called zones. These zones are needed to forecast traffic to and from these areas. The zones are defined by considering the individual project boundaries, existing land uses, and the existing and proposed roadway network. Figure 2 shows the zones within the Master Plan area.

The future roadway network for each phase is primarily based on the roadway system shown in the Estate of James Campbell Kapolei Area Long Range Master Plan (March 1991). The Kapolei Area Master Plan shows existing and proposed major roads envisioned for the Ewa area. This roadway network serves as the underlying framework for the future highway improvements needed to accommodate traffic forecasts, and functions as a "test" network from which additional highways would be planned.

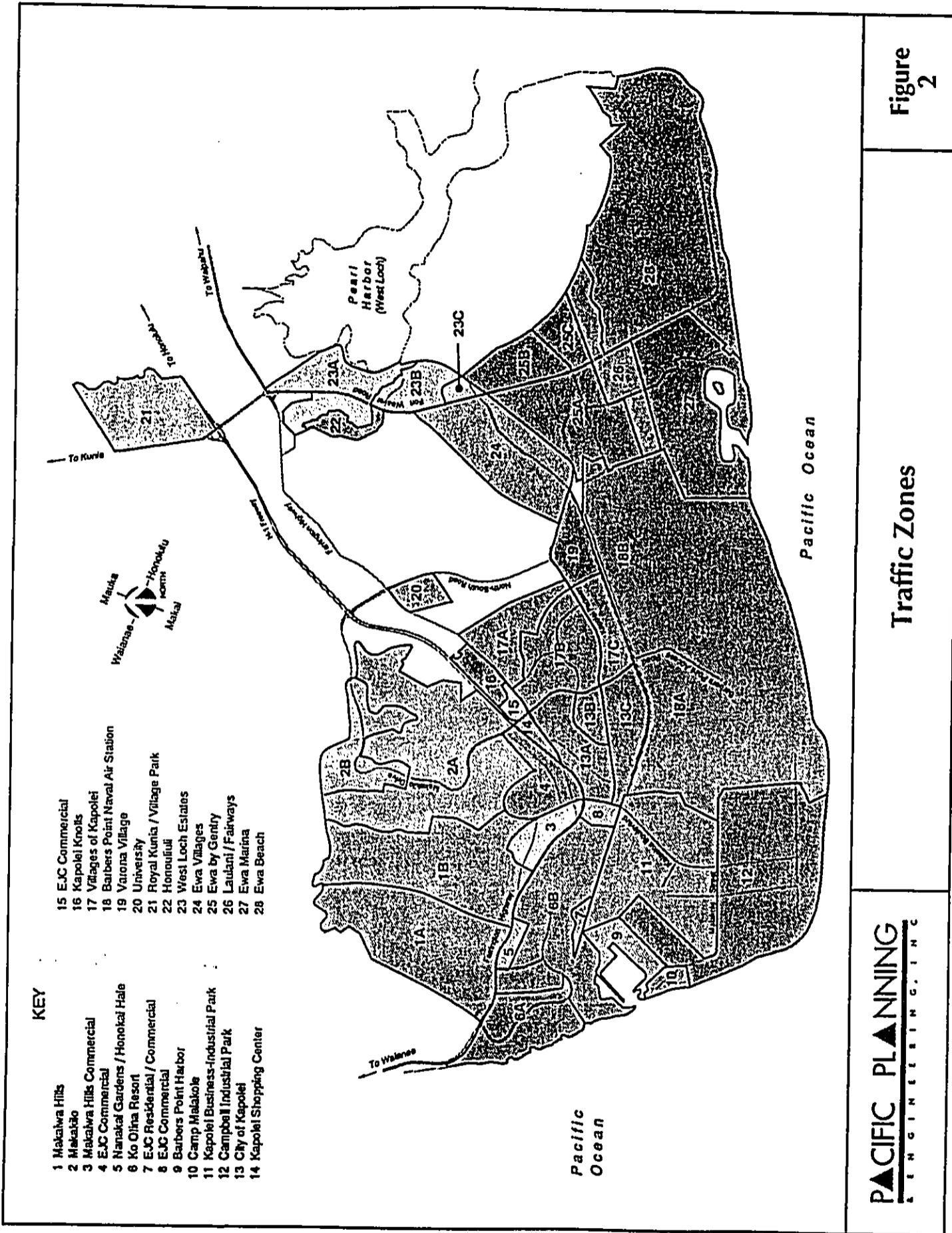


Figure 2

Traffic Zones

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Traffic Forecasts

For each phase of the Master Plan, traffic forecasts are developed for the morning (AM) peak hour and afternoon (PM) peak hour. Traffic forecasts are estimated using the standard three step procedure of trip generation, trip distribution, and traffic assignment.

Trip Generation

Vehicle trips generated by projects in the Ewa region are estimated according to the phased land uses and the appropriate trip generation rates. Except for resort hotels, the trips are estimated based on trip generation data found in the Trip Generation Report³. Trip generation rates derived from several Hawaii resort hotels are used for the resort hotels in the Ko Olina and Ewa Marina projects. Shopping center trip and day care generation are adjusted for pass-by trips, to avoid over estimation of trips on the regional highway system. Examples of pass-by trips occur when motorists stop at a shopping center or to pick-up a child at a day care facility, then return to their original travel route.

Trip Distribution

The trip distribution step assigns trips to their expected origins and destinations. The QRS II computer model uses the gravity model to distribute trips based on the location of dwelling units and employment within the Ewa region and other areas of Oahu.

In transportation planning, the gravity model is based on the theory that number of trips between zones is directly related to the number of

³ Trip Generation Report, Institute of Transportation Engineers, 4th Edition, 1987.

productions and attractions within the zones and inversely related to the travel time between zones. Generally, production trips are generated from dwelling units and attraction trips from employment, shopping, and recreation opportunities.

Trips for construction jobs, industrial land uses, visitor trips from the Ko Olina and Ewa Marina projects, and the proposed university are distributed separately from other land uses due to the unique nature of their land uses and different travel characteristics. For instance, construction workers employed in the Ewa region would most likely not live in the residential dwelling units under construction. Also, visitors in resort areas or luxury homes would travel primarily for recreational purposes, instead of employment or educational reasons.

Trip Assignment

The traffic assignment step identifies the specific routes on the roadway network between trip origins and destinations. Traffic is assigned based on the shortest travel time. When the capacity of roadways is incorporated into the route selection process, traffic is assigned to alternative routes to avoid congested conditions and long delays on routes reaching capacity.

Analysis

The following analysis methods described in the 1985 Highway Capacity Manual⁴ are applied to the roadway network:

- Basic Freeway Segments.
- Freeway On-Ramps and Off-Ramps.

⁴ Highway Capacity Manual, Special Report 209, Transportation Research Board, 1985.

- Multilane Highways.
- Two-Lane Highways.
- Signalized Intersections - Planning Analysis.
- Unsignalized Intersections.

The roadway network analysis focused on the freeway laneage and interchange ramps, and laneage and intersections of highways and major arterials. Local intersections, serving individual projects, are not analyzed as part of the Master Plan roadway network unless they fall into the above categories.

The intersections are improved to enable the intersection to operate under capacity. The methodology for analysis of the roadway segments describes traffic flow conditions in terms of Level-of-service ranging from Level-of-service A to F, where Level-of-service A is the best and Level-of-service F the worst. Appendix A contains the Level-of-service definitions for the analysis method.

For each phase of the Master Plan, the roadway networks are improved to obtain Level-of-service D or better. However, Level-of-service E is used for selected ramps along H-1 freeway, where reasonable.

1997 EWA ROADWAY CONCEPT

1997 Traffic Forecasts

Forecasts of vehicular traffic are based on the 1997 land use scenario described in the following section. Traffic forecasts of morning peak hour and afternoon peak hour are estimated using the standard three step procedure of trip generation, distribution, and assignment.

1997 Land Use Scenario

The Developers Working Group and appropriate government agencies agreed that the Developers' land uses would be used for the traffic forecasts with the understanding that the land uses are for planning purposes only. Presently, some developers are in the permitting process or planning to apply for the necessary land use and zoning approvals for their projects. The use of the developers land use data does not imply agency approval of these projects. Table 1 presents a summary of the Developers forecasted employment, population and dwelling units by projects. A detailed list of the land uses provided by the Developers is given in Appendix B.

A comparison between the City DGP and Developer 1997 proposed land uses for the Ewa Development Plan area is presented in Table 2. For the Developers' total, Royal Kunia and Village Park are excluded since these projects are in the Central Oahu Development Plan area. Also, construction-related employment is deducted from the City DGP forecasts because the Developers' forecast did not include this type of employment. The comparison shows that Developers employment is 10 percent less and the number of dwelling units is 40 percent higher than the City DGP estimates.

TABLE 1. 1997 PROJECT LAND USES

<u>Developer/Project Name</u>	<u>Employment</u>	<u>Population</u>	<u>Dwelling Units</u>
DHCD, City and County of Honolulu			
Ewa Villages	147	3,732	1,198
Honouliuli	0	1,386	433
Varona Village	0	224	70
West Loch Estates	243	4,937	1,599
Cook Inlet Region, Inc.			
Camp Malakole	210	0	0
Estate of James Campbell			
Campbell Industrial Park	3,500	0	0
City of Kapolei	2,743	0	0
Kapolei Business Industrial Park	993	0	0
Kapolei Shopping Center	709	0	0
Laulani/Fairway Estates	0	2,880	900
Makaiwa Hills	100	640	200
Finance Realty Company, Ltd.			
Kapolei Knolls	0	1,472	460
Makakilo	164	16,778	5,243
Gentry-Pacific, Ltd.			
Ewa By Gentry	1,480	20,331	7,562
Halekua Development Company.			
Royal Kunia	500	7,741	2,419
Village Park	0	5,779	1,806
HASEKO (Hawaii), Inc.			
Ewa Marina	1,258	5,040	1,575
HFDC, State of Hawaii			
Villages of Kapolei	548	13,005	4,289
State DOT, Harbors Division			
Barbers Point Deep Draft Harbor	368	0	0
West Beach Estates			
Ko Olina resort	3,200	960	300
Military			
Barbers Point Naval Air Station	6,000	2,732	854
Other Developments			
Ewa Beach	2,950	19,708	4,865
Nanakai Gardens/Honokai Hale	0	928	290
TOTAL	25,113	108,273	34,063

TABLE 2. COMPARISON OF 1997 PROJECT LAND USES
EWA DEVELOPMENT PLAN AREA

<u>Ewa Development Plan Area</u>	<u>Employment</u>	<u>Population</u>	<u>Dwelling Units</u>
Developers' Total (Excludes Royal Kunia and Village Park)	24,613	94,753	29,838
DGP 1997 Forecast *	27,416	65,307	21,393
Percent Difference	-10%	+45%	+40%

* Since the Developers did not include construction employment in their land use data, 7,588 construction jobs are deducted from the DGP employment forecast for this comparison.

Although the Developers' 1997 residential projections are higher than the DGP forecasts, the future traffic volumes are based on the Developers 1997 land use scenario. Hence, should actual construction of the residential dwelling units progress according to the Developers' phasing, the proposed Master Plan roadway improvements would have sufficient capacity to serve the potential travel demand generated by the Developers land use projections.

1997 Roadway Network

The preliminary 1997 roadway network used in the forecast is based primarily on the layout shown in the March 1991 Kapolei Area Long Range Master Plan, which does not define more detailed roadway data. The laneage requirements and interchange ramp configurations are identified in a following section describing the analysis of the forecasted 1997 morning and afternoon peak hour traffic volumes.

Trip Generation

The trips generated by the 1997 land uses are estimated using the ITE Trip Generation Report, or best available information if the ITE report is not applicable to a particular land use. For commercial shopping centers and day-care facilities, pass-by trips occur when motorists stop at a center then continue on their way. Pass-by trips are deducted from the afternoon peak hour shopping center trip and day-care generation so that these trips would not be over estimated on the roadway. The deduction for pass-by trips is applied only to the afternoon peak hour, since this is when motorists are most likely to combine or link trips together, for example, picking-up their children and groceries or dinner on their way home from work. Table 3 summarizes the average daily traffic (ADT) and peak hour trips generated for each project in the 1997 land use scenario.

1997 Traffic Volume Forecasts

Traffic forecasts are developed for the morning and afternoon peak hours. The forecasted traffic volumes are shown in Figures 3 and 4.

1997 Traffic Analysis

The forecast traffic volumes are analyzed by the appropriate methodology for freeways and ramps, multi-lane and two-way highways, planning analysis for signalized intersections, and unsignalized intersections from the 1985 Highway Capacity Manual. The roadway segments, freeway interchanges, and unsignalized intersections are improved to Level-of-service D or better. The planning analysis for signalized intersections rates traffic operations into broad categories of under, near or over capacity conditions. For this study the signalized intersections are configured to operate at under capacity conditions.

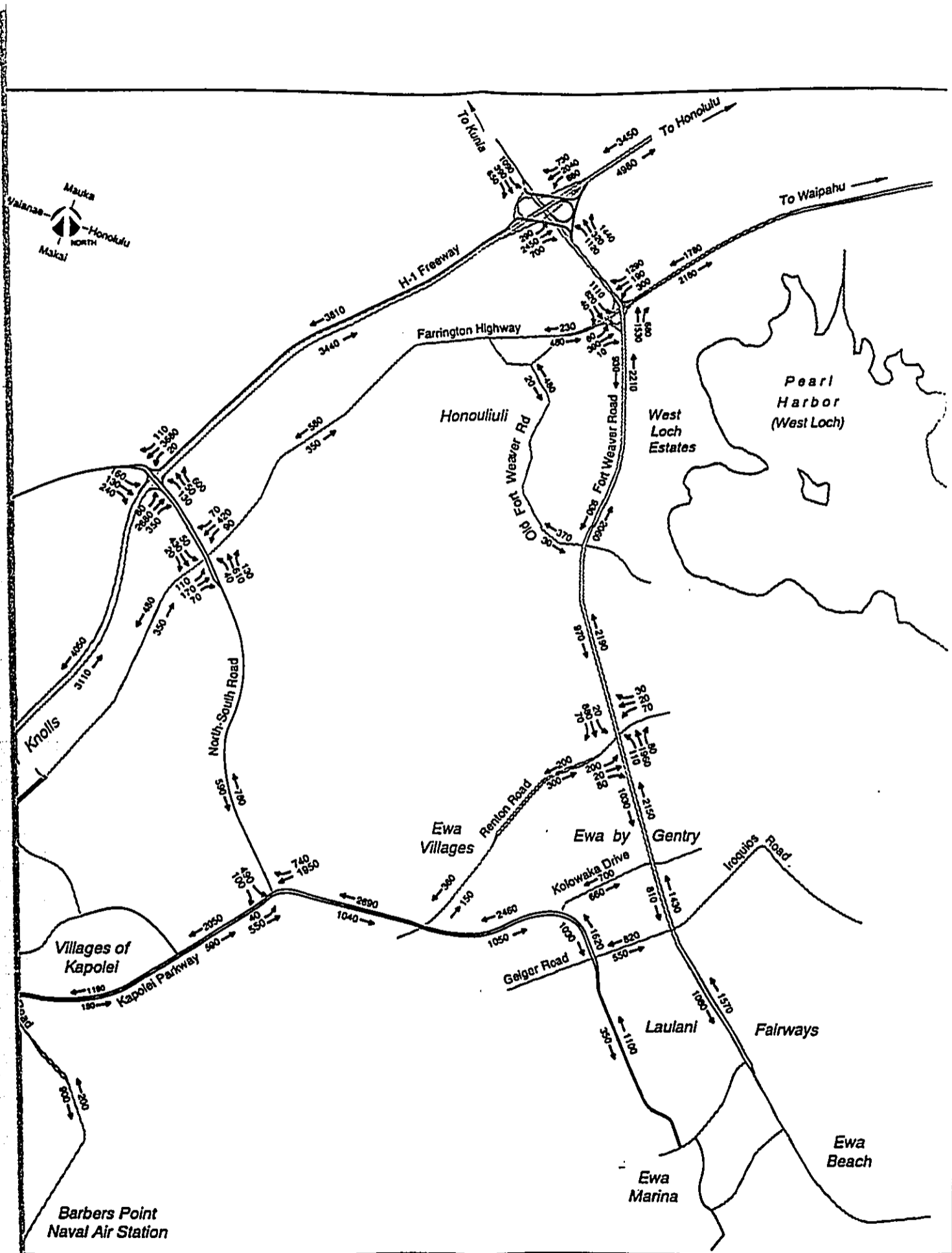
For the 1997 traffic conditions, the level-of-service criteria is relaxed to Level-of-service E at two Makakilo Interchange ramps, listed below. However, the H-1 freeway traffic at these locations flow at Level-of-service D or better.

Makakilo Interchange

- Loop on-ramp, from Makakilo Drive southbound to H-1 Freeway Honolulu bound, morning peak hour.
- Off-ramp, H-1 Freeway Waianae-bound to Makakilo Drive northbound, afternoon peak hour.

TABLE 3. TRIP GENERATION -- 1997 LAND USE SCENARIO

<u>Project Name</u>	<u>Average Daily Traffic</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
		<u>Enter</u>	<u>Exit</u>	<u>Enter</u>	<u>Exit</u>
City and County of Honolulu, DHCD					
Ewa Villages	14,052	305	649	790	554
Honouliuli	2,536	31	162	163	80
Varona Village	704	14	39	44	26
West Loch Estates	18,162	449	896	1,041	717
Cook Inlet Region, Inc.					
Camp Malakole	830	95	27	14	57
Estate of James Campbell					
Campbell Industrial Park	13,840	1575	455	231	945
City of Kapolei	18,343	786	221	698	1,079
Kapolei Business Industrial Park	6,831	496	156	207	395
Kapolei Shopping Center	7,391	202	86	277	312
Laulani/Fairway Estates	7,795	143	442	493	280
Makaiwa Hills	3,511	79	120	133	138
Finance Realty Company, Ltd.					
Kapolei Knolls	4,629	94	253	291	171
Makakilo	48,544	1,020	2,665	2,900	1,739
Gentry-Pacific, Ltd.					
Ewa By Gentry	71,519	1,749	3,753	4,168	2,760
Halekua Development Co.					
Royal Kunia	25,682	868	1,229	1,280	1,174
Village Park	17,668	352	973	1,112	649
HASEKO (Hawaii), Inc.					
Ewa Marina	25,760	592	900	1,322	1,084
HFDC, State of Hawaii					
Villages of Kapolei	46,633	1,419	2,345	2,606	1,882
State DOT, Harbors Division					
Barbers Point Deep Draft Harbor	1,950	85	29	61	119
West Beach Estates					
Ko Olina resort	22,582	1,115	781	998	1,603
Military					
Barbers Point Naval Air Station	26,705	2,439	823	968	2,302
Other Developments					
Ewa Beach	44,390	1,152	2,247	2,541	1,845
Nanakai Gardens/Honokai Hale	2,918	59	160	184	108
TOTAL	432,975	15,119	19,411	22,454	19,948



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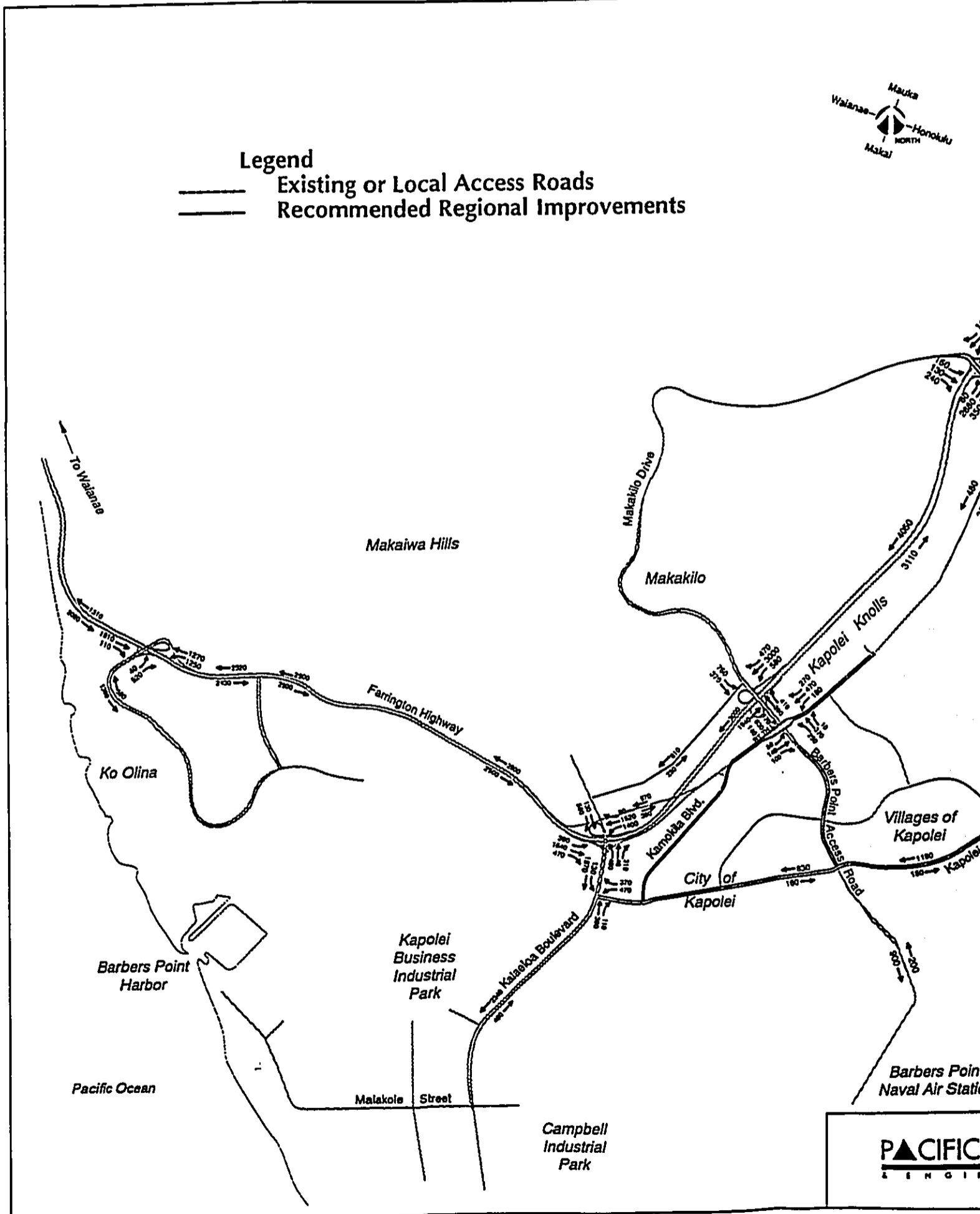
1997 Morning Traffic Volumes

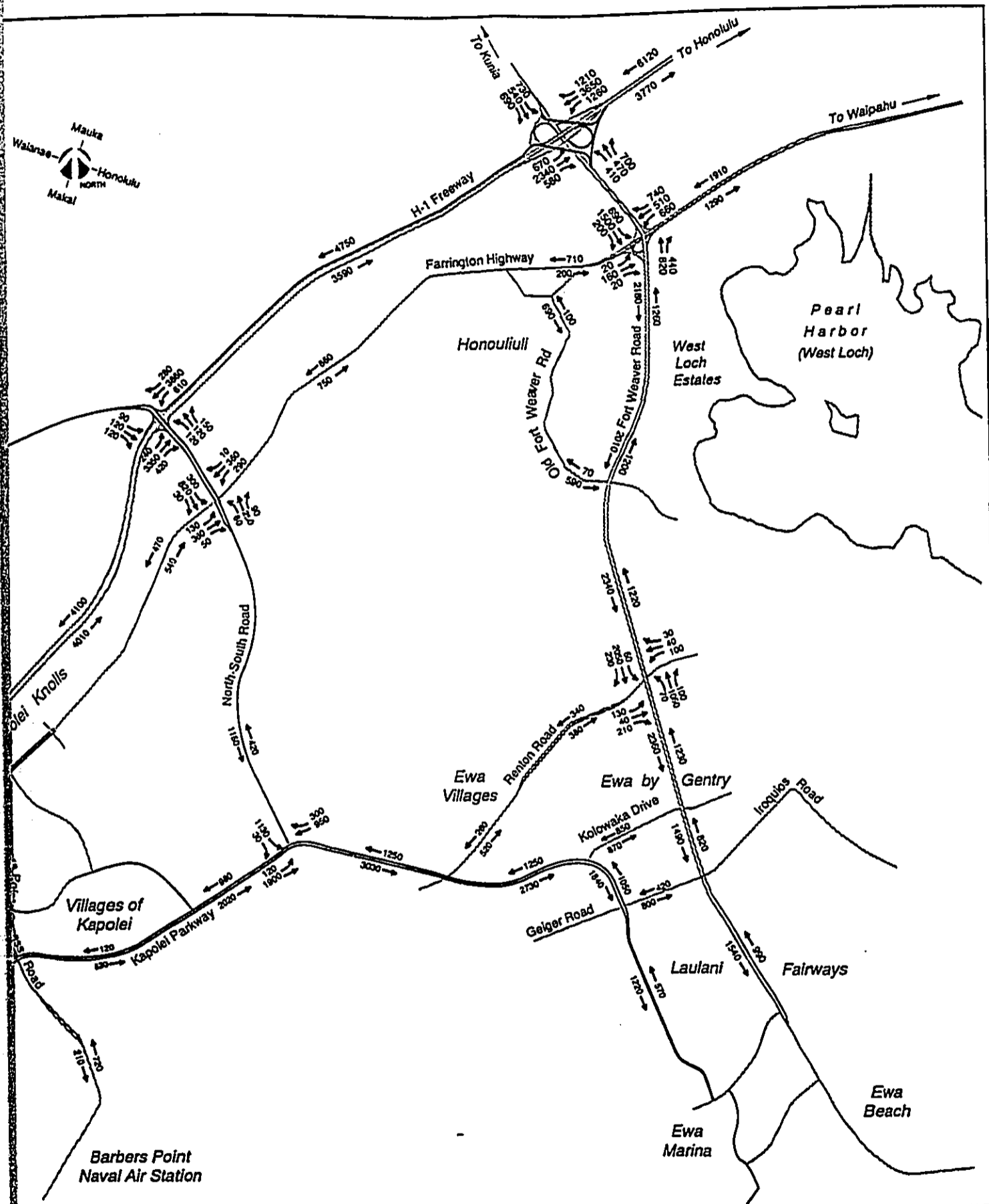
Figure 3

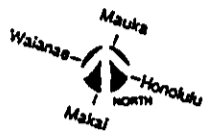


Legend

- Existing or Local Access Roads
- == Recommended Regional Improvements

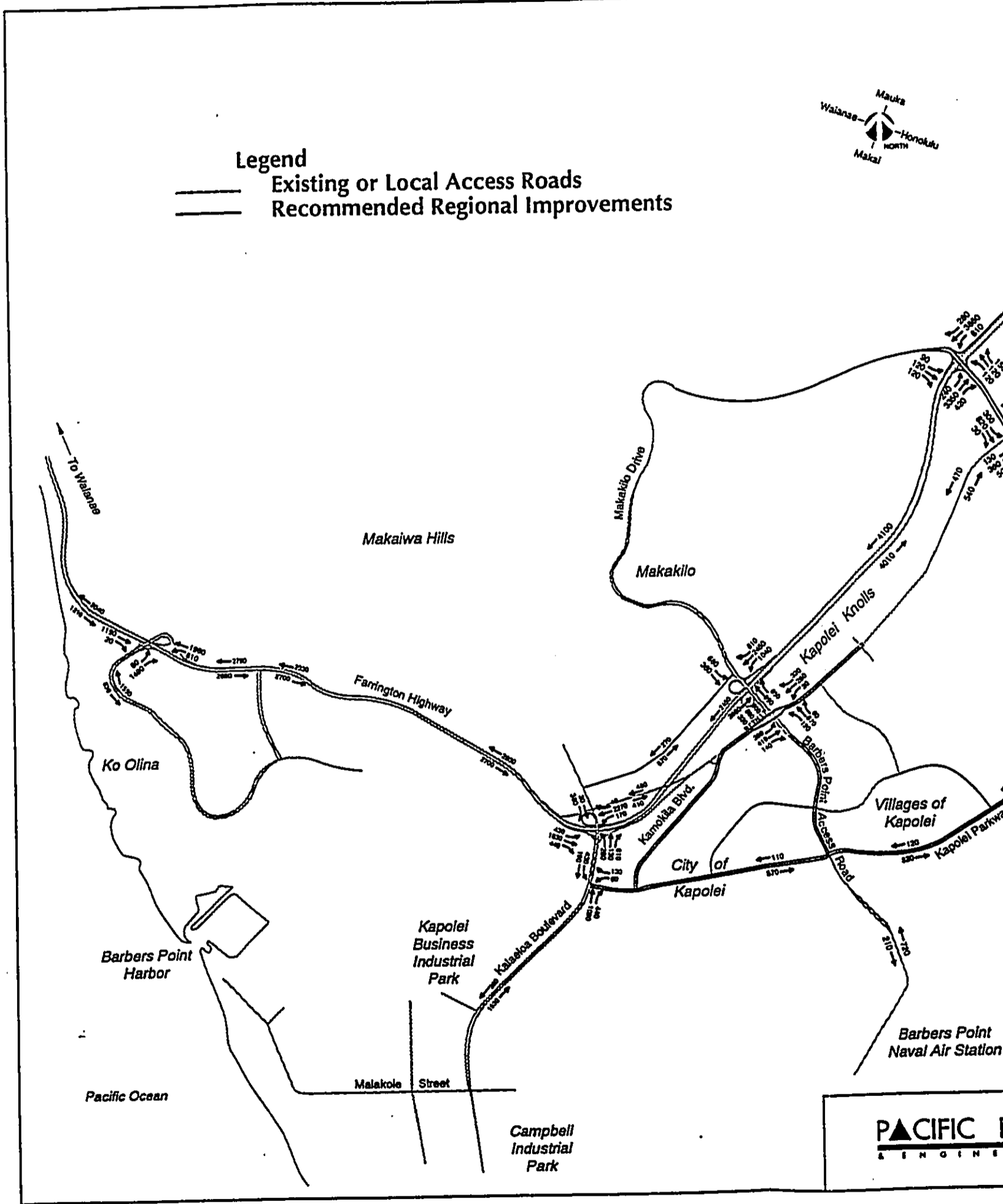






Legend

-  Existing or Local Access Roads
-  Recommended Regional Improvements



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1997 Roadway Improvements

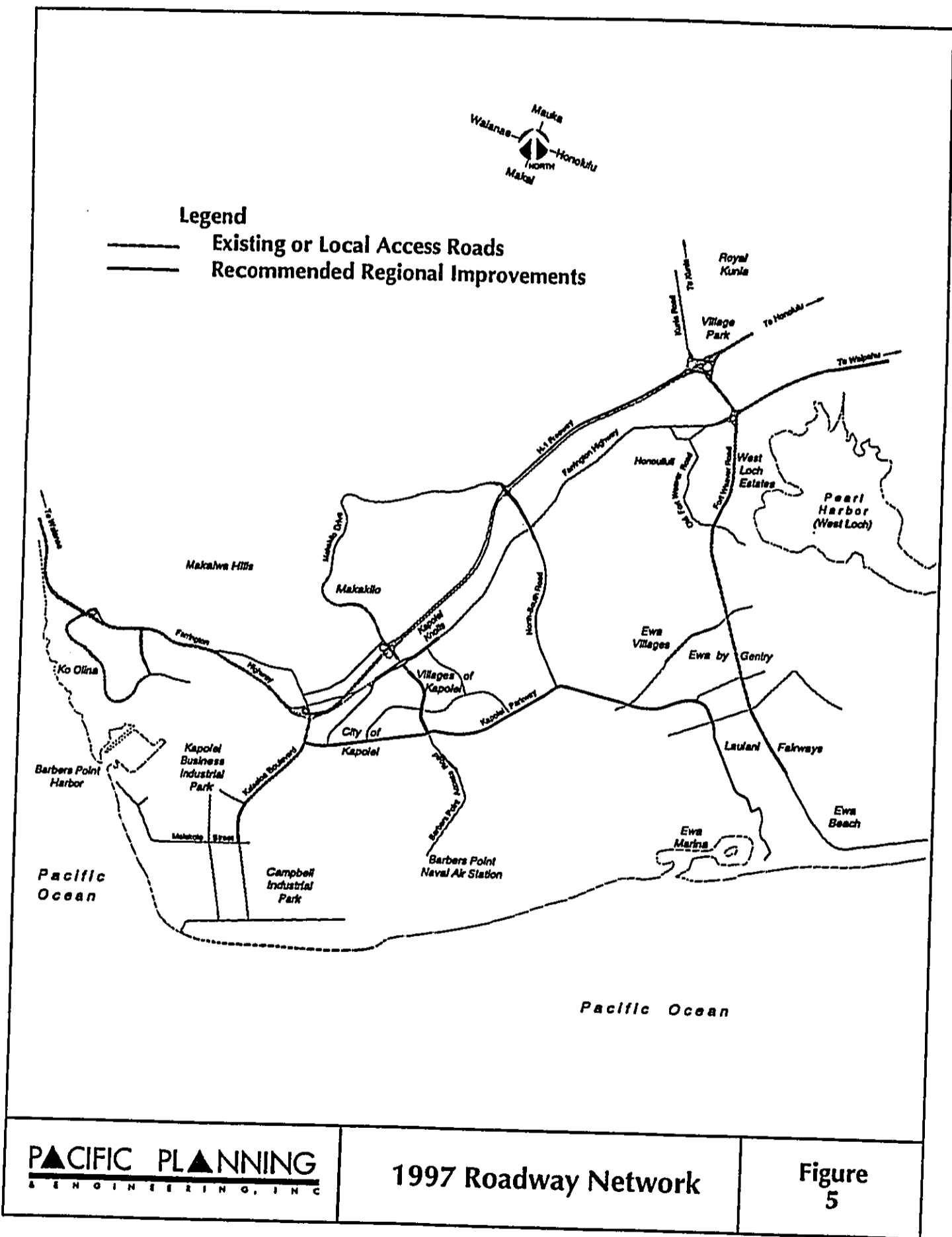
The improvements identified for the 1997 Ewa roadway network are listed in Table 4 and shown on Figure 5. In addition, a schematic diagram of the 1997 improvements is presented in Figure 6. These roadway improvements would accommodate the forecasted 1997 traffic volumes. Alternative improvements or layouts could be investigated during the subsequent planning or design stages for the specific roadway improvements.

TABLE 4. 1997 ROADWAY IMPROVEMENTS

Facility	Improvement Description
1. H-1 Freeway	a. Additional lane, Kunia Interchange to North-South Interchange, Waianae bound direction only.
2. Palilalai Interchange	<ul style="list-style-type: none"> a. Close off-ramp, H-1 Freeway Honolulu bound to Farrington Highway makai bound. b. Add second lane for loop off-ramp, H-1 Freeway Waianae bound to Campbell Industrial Park makai bound. c. Extend on-ramp, from Campbell Industrial Park mauka bound to H-1 Freeway Waianae bound. d. Extend off-ramp, from H-1 Freeway Honolulu-bound to Campbell Industrial Park makai bound.
3. Makakilo Interchange	<ul style="list-style-type: none"> a. Extend off-ramp, from H-1 Freeway Waianae bound to Makakilo Drive mauka bound. b. New loop off-ramp, from H-1 Freeway Waianae bound to Makakilo Drive makai bound. c. Extend on-ramp lane, from Makakilo Drive mauka bound to H-1 Freeway Honolulu bound .
4. North-South Interchange	a. New diamond interchange on H-1 Freeway between Makakilo Interchange and Kunia Interchange.

TABLE 4. 1997 ROADWAY IMPROVEMENTS (continued)

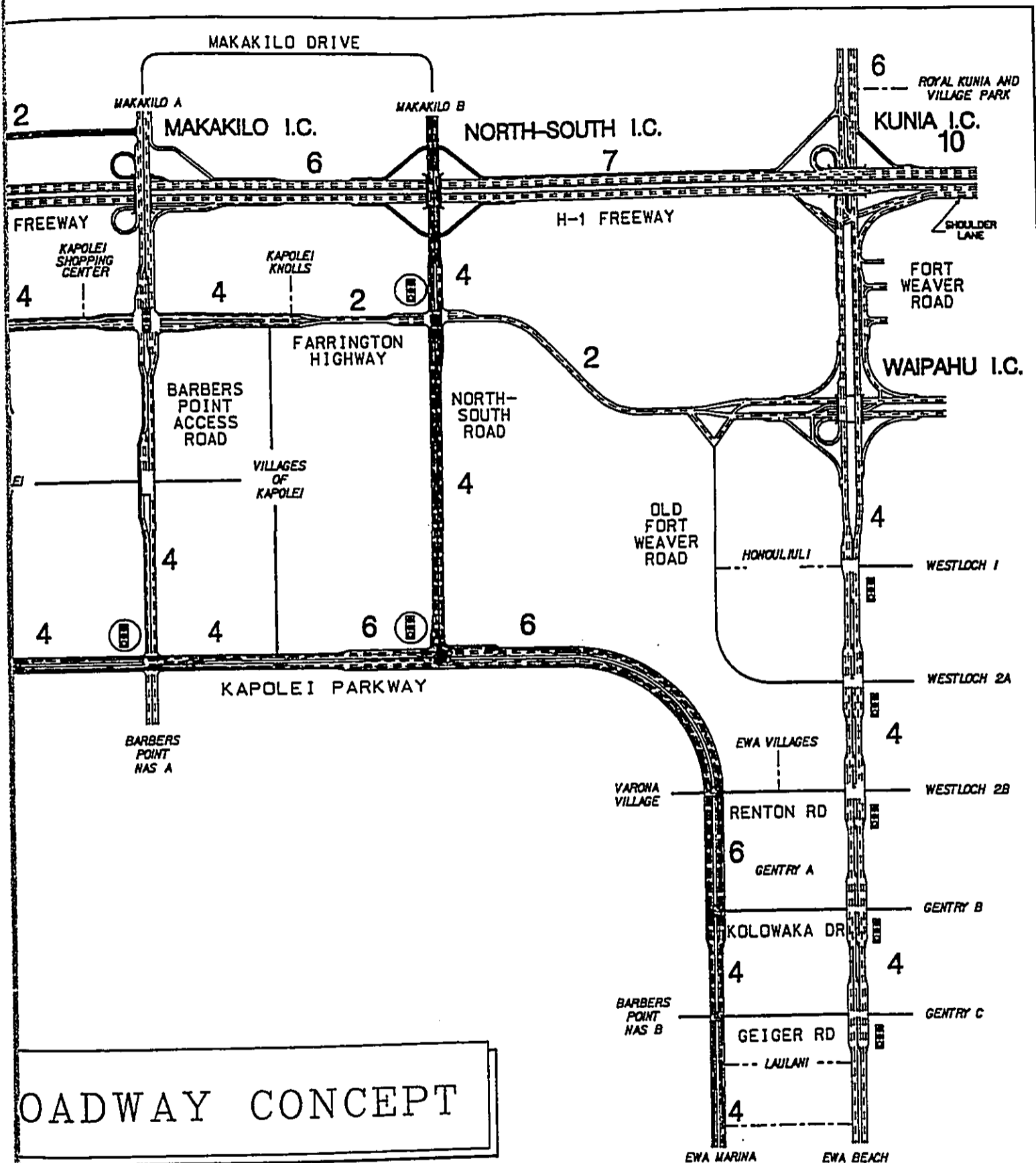
Facility	Improvement Description
5. Kunia Interchange	<ul style="list-style-type: none"> a. New fly-over ramp, from Kunia Road makai bound to H-1 Freeway Honolulu bound. b. New fly-over ramp, from Fort Weaver Road mauka bound to H-1 Freeway Waianae bound. c. New loop off-ramp, from H-1 Freeway Honolulu bound to Kunia Road mauka bound.
6. Mauka Frontage Road	<ul style="list-style-type: none"> a. New two-lane frontage road, between Palailai Interchange and Makakilo Interchange, mauka of H-1 Freeway.
7. Makakilo Drive	<ul style="list-style-type: none"> a. Extend Makakilo Drive towards Honolulu from the new Makakilo Golf Course to connect to the new North South Interchange.
8. Barbers Point Access Road	<ul style="list-style-type: none"> a. Additional lanes (expand from two to four lanes), Farrington Highway to Kapolei Parkway.
9. Kamokila Boulevard	<ul style="list-style-type: none"> a. New four-lane roadway from Farrington Highway to new Kapolei Parkway.
10. Farrington Highway	<ul style="list-style-type: none"> a. Additional lanes (expand from two to four lanes) from Kamokila Boulevard to Makakilo Drive. b. Widen and reconstruct four-lane roadway with median left turn lane between Barbers Point Access Road and access to Kapolei Knolls/ Villages of Kapolei.
11. North-South Road	<ul style="list-style-type: none"> a. New four-lane roadway, from H-1 Freeway to Farrington Highway. b. New two-lane roadway, from Farrington Highway to Kapolei Parkway. c. New six-lane roadway, from Kapolei Parkway to Kolowaka Drive. d. New four-lane roadway, from Kolowaka Drive to Ewa Marina project. e. New traffic signal, North-South Road at Farrington Highway.
12. Kapolei Parkway	<ul style="list-style-type: none"> a. New four-lane roadway, Kalaeloa Boulevard to Villages of Kapolei. b. New six-lane roadway, Villages of Kapolei to North-South Road. c. New traffic signal, Kapolei Parkway at Kalaeloa Boulevard. d. New traffic signal, Kapolei Parkway at Makakilo Drive. e. New traffic signal, Kapolei Parkway at North-South Road.



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1997 Roadway Network

Figure
5



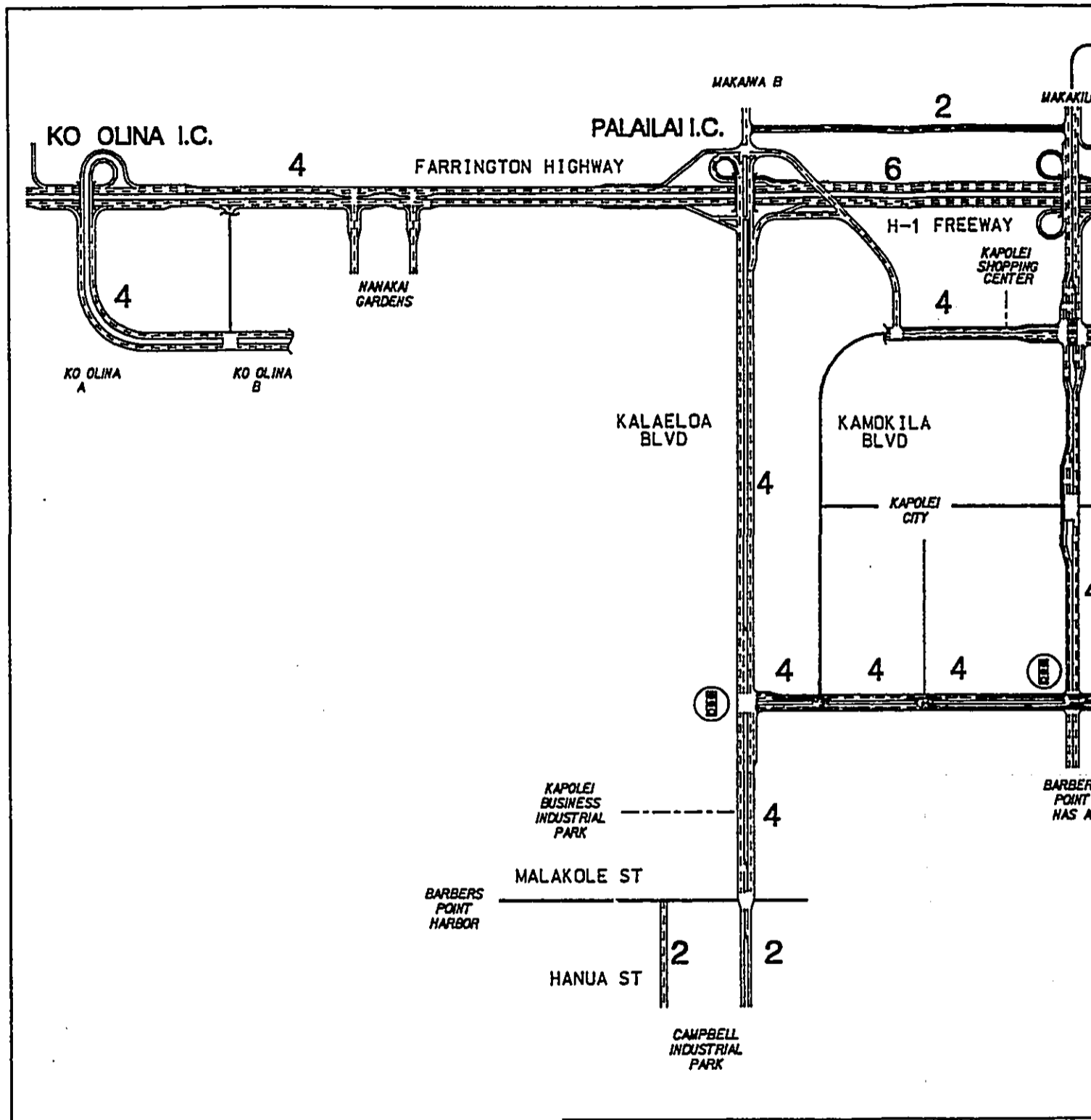
ROADWAY CONCEPT

REVISIONS	DATE	DESCRIPTION
0	2/12/92	RELEASED
1	6/29/92	REVISION PER DOT

PACIFIC PLANNING & ENGINEERING, INC.
 1221 Kapiolani Blvd., Suite 740, Honolulu, HI 96814

**EWA REGION HIGHWAY MASTER PLAN
 1987 ROADWAY CONCEPT**

DATE: FEBRUARY 12, 1992 NAME: NONE **FIGURE 6**



EWA 1997 ROADWAY

NOTES:

1. = IMPROVEMENTS TO THE EXISTING NETWORK.
2. 4 = TOTAL NUMBER OF THROUGH TRAVEL LANES.
3. = NEW TRAFFIC SIGNAL FOR REGIONAL ROADWAY INTERSECTION.
4. = EXISTING TRAFFIC SIGNAL.
5. INTERSECTIONS AND INTERCHANGES ARE SCHEMATICALLY REPRESENTED IN THIS PRESENTATION AND SHOULD NOT BE USED FOR DETERMINING DESIGN PARAMETERS.

Detailed descriptions of the 1997 roadway improvements are provided below. While the roadway improvements are discussed as separate projects, all of the roadway improvements in the 1997 roadway network are needed to serve the forecasted 1997 traffic volumes to maintain an acceptable level-of-service.

H-1 Freeway

In 1997, the H-1 Freeway requires an additional westbound lane to increase the capacity of the roadway between the new North-South Interchange and existing Kunia Interchange. The added lane would also improve the operations for Waianae bound traffic merging onto the freeway from Kunia Road, makai bound, and northbound along Fort Weaver Road, as well as the Waianae bound traffic exiting the freeway at the North-South Interchange.

Palailai Interchange

Ramp improvements in 1997 are needed to provide additional access to the industrial area and also to the City of Kapolei. A second lane for the existing loop off-ramp will provide increased capacity for the Waianae bound H-1 Freeway traffic exiting makai bound onto Kalaeloa Boulevard. Extending the Waianae bound on-ramp and the Honolulu bound off-ramp lanes allows for increased capacity for merging and diverging traffic to/from Waianae. Closing the existing Farrington Highway off-ramp will eliminate the existing weaving section and reduce traffic conflicts for traffic merging onto the freeway from Kalaeloa Boulevard.

Makakilo Interchange

In 1997 Makakilo Interchange and Palailai Interchange will serve as the primary access to the H-1 Freeway for City of Kapolei, which is expected to be the center of employment activity in the Ewa region. At the Makakilo Interchange, the new loop off-ramp provides direct access to City of Kapolei via Barbers Point Access Road. Extending the on- and off-ramp lanes on the Honolulu side of the interchange would increase the capacity for the merge and diverge movements on and off the freeway.

North-South Interchange

Along with the North-South Road, the new North-South Interchange will improve access to several areas within the Ewa region. The North-South Road will provide an alternative route to the Fort Weaver Road corridor and the H-1 Freeway. The North-South Interchange will also serve as a secondary access to the Makakilo development, the Villages of Kapolei, and the City of Kapolei.

Kunia Interchange

Traffic from Kunia Road, Fort Weaver Road, Kapolei, and the H-1 Freeway converge at the Kunia Interchange. In the 1997 land use scenario, Kunia Road and Fort Weaver Road link major residential developments along this corridor to the H-1 Freeway. The suggested ramp improvements at this interchange facilitate the movement of vehicles on and off the freeway. The loop off-ramp allows motorists on the freeway from Waianae direct access mauka bound onto Kunia Road. The provision of the fly-over ramps eliminates the need for the two signalized intersections on Fort Weaver Road at the existing on and off-ramp locations. The flyover ramps also avoid creating the weaving sections inherent in the configuration of a full cloverleaf interchange.

Mauka Frontage Road

A new frontage road between the Palailai and Makakilo Interchanges will divert some of the traffic that would otherwise pass through the intersection of Barbers Point Access Road and Farrington Highway. The frontage road, located mauka of the H-1 Freeway, provides access between the Makakilo development and the Palailai Interchange freeway ramps to/from the Waianae direction, and serves as a second access to the industrial areas.

Kamokila Boulevard

Kamokila Boulevard is the first major roadway within City of Kapolei and runs along the north-western side of the City. Kamokila Boulevard connects Kalaeloa Boulevard and the proposed Kapolei Parkway with Farrington Highway.

Makakilo Drive

Within the Makakilo development, Makakilo Drive terminates in the vicinity of the Makakilo Golf Course which is presently under construction. Makakilo Drive would need to be extended in a south-easterly direction from its existing terminus to connect to the new North-South Road Interchange.

Barbers Point Access Road

Makai of the H-1 Freeway, Barbers Point Access Road lies between the City of Kapolei and the Villages of Kapolei. Additional lanes are needed to increase the capacity of this roadway between Farrington Highway and Kapolei Parkway.

Farrington Highway

Farrington Highway, between Barbers Point Access Road and the access to Kapolei Knolls and the Villages of Kapolei, would need to be widened to provide two travel lanes in each direction with a median turning lane. The widening would increase the capacity of this roadway to accommodate the new developments in this area.

North-South Road

As discussed above, the North-South Road provides an alternative route to/from the H-1 Freeway for the projects along the Fort Weaver Road corridor. With its link to Farrington Highway and Kapolei Parkway, the North-South Road would also serve to connect Ewa Beach and new residential projects in this vicinity with the employment in the Kapolei area.

Kapolei Parkway

The proposed Kapolei Parkway provides a new east-west link in the Ewa region between Kalaeloa Boulevard and the North-South Road; this roadway provides additional capacity for motorists travelling between the residential areas in the east and the employment areas in the west. The provision of Kapolei Parkway will divert traffic that would otherwise need to travel on Farrington Highway or the H-1 Freeway.

2005 EWA ROADWAY CONCEPT

2005 Traffic Forecasts

Forecasts of vehicular traffic are based on the 2005 land use scenario described in the following section. Forecasts of morning peak hour and afternoon peak hour traffic are estimated using the standard three step procedure of trip generation, distribution, and assignment.

2005 Land Use Scenario

For year 2005, the Developers' proposed dwelling unit total is 55 percent greater than the DGP forecast for the Ewa Development Plan area, while the Developers' employment estimate is 5 percent less than the forecast. The Developers Working Group and appropriate government agencies concur that the Developers' 2005 dwelling unit estimate should be decreased so that the Ewa Master Plan land uses are compatible with Ewa Development Plan land uses in the HALI 2005; this adjustment permits the Master Plan roadway improvements to maintain eligibility for federal funding.

The Developers' projections and adjusted land use scenario that is utilized in the transportation model are shown in Table 5. The number of individual project dwelling units is adjusted by considering the extent of land use and zoning approvals received for the project as well as the progress of construction to date. The proposed and adjusted land uses are compared in Table 6 to the DGP 2005 land use projections for the Ewa Development Plan area. Royal Kunia and Village Park are not included in the Developers' land use totals since these projects are in the Central Oahu Development Plan area. In addition, construction-related employment are deducted from the DGP projections since the Developers' forecasts omit the temporary and transitory construction jobs.

TABLE 5. 2005 PROJECT LAND USES

<u>Developer/Project Name</u>	<u>Employment</u>		<u>Population</u>		<u>Dwelling Units</u>	
	<u>Dev</u>	<u>Adj</u>	<u>Dev</u>	<u>Adj</u>	<u>Dev</u>	<u>Adj</u>
City and County of Honolulu, DHCD						
Ewa Villages	147	147	3,732	3,092	1,198	998
Honouliuli	0	0	1,386	666	433	208
Varona Village	0	0	224	224	70	70
West Loch Estates	243	243	4,937	4,937	1,599	1,599
Cook Inlet Region, Inc.						
Camp Malakole	210	210	0	0	0	0
Estate of James Campbell						
Campbell Industrial Park	3,500	3,500	0	0	0	0
City of Kapolei	6,134	6,134	7,360	2,390	2,300	747
Kapolei Business Ind Park	4,244	4,244	0	0	0	0
Kapolei Shopping Center	709	709	0	0	0	0
Laulani/Fairway Estates	0	0	3,840	2,179	1,200	681
Makaiwa Hills	1,490	1,490	5,760	3,322	1,800	1,038
Finance Realty Company, Ltd.						
Kapolei Knolls	0	0	1,472	1,472	460	460
Makakilo	333	333	18,733	16,778	5,854	5,243
Gentry-Pacific, Ltd.						
Ewa By Gentry	1,480	1,480	20,331	20,331	7,562	7,562
Halekua Development Company.						
Royal Kunia	2,975	2,975	15,581	15,581	4,869	4,869
Village Park	0	0	5,779	5,779	1,806	1,806
HASEKO (Hawaii), Inc.						
Ewa Marina	2,159	2,159	15,520	5,449	4,850	1,703
HFDC, State of Hawaii						
Villages of Kapolei	672	672	14,755	13,005	4,911	4,289
State DOT, Harbors Division						
Barbers Point Deep Draft Harbor	916	916	0	0	0	0
West Beach Estates						
Ko Olina resort	6,608	6,608	27,840	9,040	8,700	2,825
Military						
Barbers Point Naval Air Station	6,000	6,000	2,732	2,732	854	854
Other Developments						
Ewa Beach	2,950	2,950	19,708	19,708	4,865	4,865
Nanakai Gardens/Honokai Hale	0	0	928	928	290	290
TOTAL	40,770	40,770	170,618	127,613	53,621	40,107

TABLE 6. COMPARISON OF 2005 PROJECT LAND USES AND DGP FORECASTS
EWA DEVELOPMENT PLAN AREA

<u>Land Use Projection</u>	<u>Employment</u>		<u>Population</u>		<u>Dwelling Units</u>	
	<u>Dev</u>	<u>Adj</u>	<u>Dev</u>	<u>Adj</u>	<u>Dev</u>	<u>Adj</u>
Developers' Total *	37,795	37,795	149,258	106,253	46,946	33,432
DGP 2005 Forecast **	39,753	39,753	90,715	90,715	30,348	30,348
Percent Difference	-5%	-5%	+65%	+17%	+55%	+10%

* Excludes Royal Kunia and Village Park.

** Since the Developers did not include construction employment in their land use data, 11,532 construction jobs deducted from the DGP employment forecast for this comparison.

The adjusted land uses are part of the 2005 land use scenario in the Master Plan traffic forecasts. A detailed list of the Developers' adjusted land uses is given in Appendix B.

Trip Generation

As with the 1997 forecast, trips generated from the 2005 land uses are estimated using the ITE Trip Generation Report, or the best available information if the ITE report is not applicable to a particular land use. For commercial shopping areas and day care centers, pass-by trips are deducted from the shopping center and day care trip generation in the afternoon peak hour so that these trips would not be over estimated on the highway. Table 7 summarizes the ADT and peak hour trips generated for each project in the 2005 land use scenario.

TABLE 7. TRIP GENERATION -- 2005 LAND USE SCENARIO

<u>Project Name</u>	<u>Average Daily Traffic</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
		<u>Enter</u>	<u>Exit</u>	<u>Enter</u>	<u>Exit</u>
City and County of Honolulu, DHCD					
Ewa Villages	12,040	264	538	664	479
Honouliuli	1,218	15	78	78	39
Varona Village	704	14	39	44	26
West Loch Estates	18,162	449	896	1,041	717
Cook Inlet Region, Inc.					
Camp Malakole	830	95	27	14	57
Estate of James Campbell					
Campbell Industrial Park	13,840	1575	455	231	945
City of Kapolei	49,779	1,966	817	1,944	2,742
Kapolei Business Industrial Park	22,562	1,914	582	534	1,344
Kapolei Shopping Center	7,391	202	86	277	312
Laulani/Fairway Estates	6,852	139	375	431	253
Makaiwa Hills	25,136	547	709	1,193	1,047
Finance Realty Company, Ltd.					
Kapolei Knolls	4,629	94	253	291	171
Makakilo	51,643	1,108	2,703	3,039	1,884
Gentry-Pacific, Ltd.					
Ewa By Gentry	71,519	1,749	3,753	4,168	2,570
Halekua Development Co.					
Royal Kunia	54,436	2,226	2,565	2,668	2,681
Village Park	17,668	352	973	1,112	649
HASEKO (Hawaii), Inc.					
Ewa Marina	32,992	817	1,086	1,621	1,363
HFDC, State of Hawaii					
Villages of Kapolei	49,832	1,979	2,658	2,841	1,936
State DOT, Harbors Division					
Barbers Point Deep Draft Harbor	4,862	211	73	151	295
West Beach Estates					
Ko Olina resort	60,034	1,867	1,956	2,885	3,115
Military					
Barbers Point Naval Air Station	26,705	2,439	823	968	2,302
Other Developments					
Ewa Beach	44,390	1,152	2,247	2,541	1,845
Nanakai Gardens/Honokai Hale	2,918	59	160	184	108
TOTAL	580,142	21,233	23,852	28,720	27,070

2005 Traffic Volume Forecasts

Traffic forecasts are developed for the morning and afternoon peak hours; the forecasted traffic volumes are shown in Figures 7 and 8, respectively.

2005 Traffic Analysis

The forecast traffic volumes are analyzed in the same manner as the 1997 forecast using methods contained in the 1985 Highway Capacity Manual.

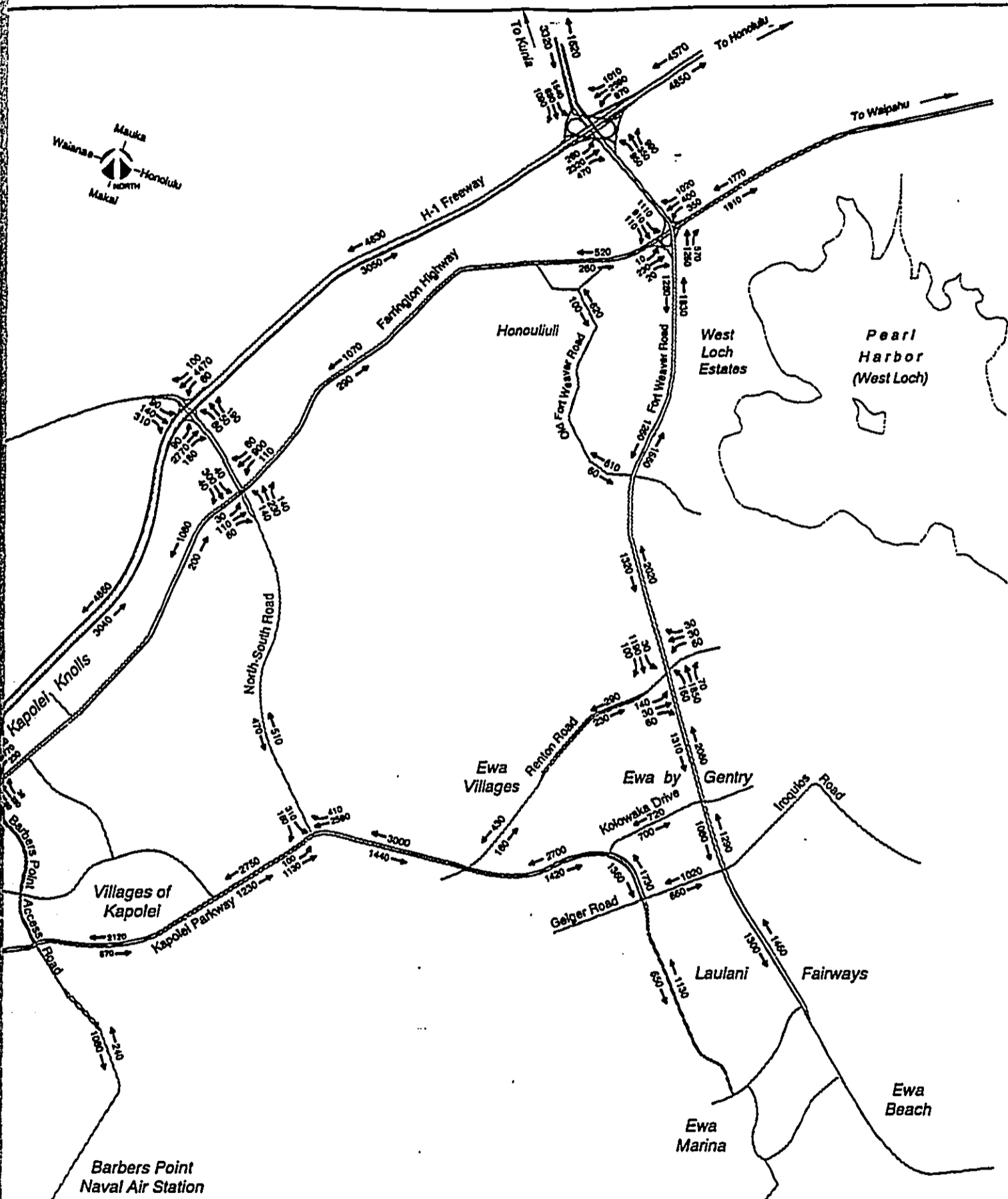
For the 2005 traffic conditions, the level-of-service criteria is set at Level-of-service E at two Kunia Interchange ramps and one Makakilo Interchange ramp, listed below. However, at these locations the H-1 freeway traffic will operate at Level-of-service D or better.

Kunia Interchange

- On-ramp, from Kunia Road to H-1 Freeway Waianae bound, morning peak hour.
- Off-ramp, H-1 Freeway Waianae-bound to Kunia Road northbound, afternoon peak hour.

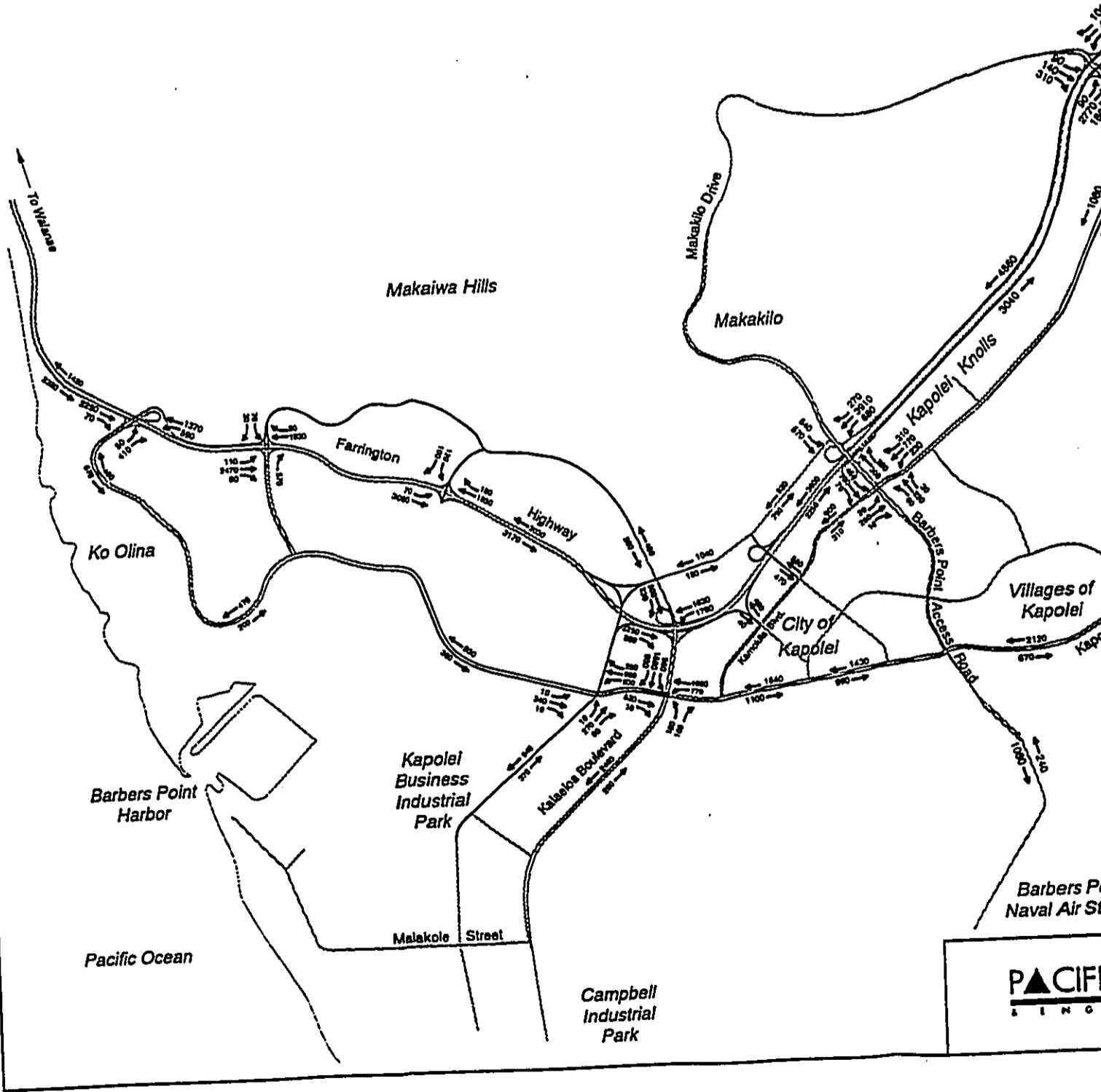
Makakilo Interchange

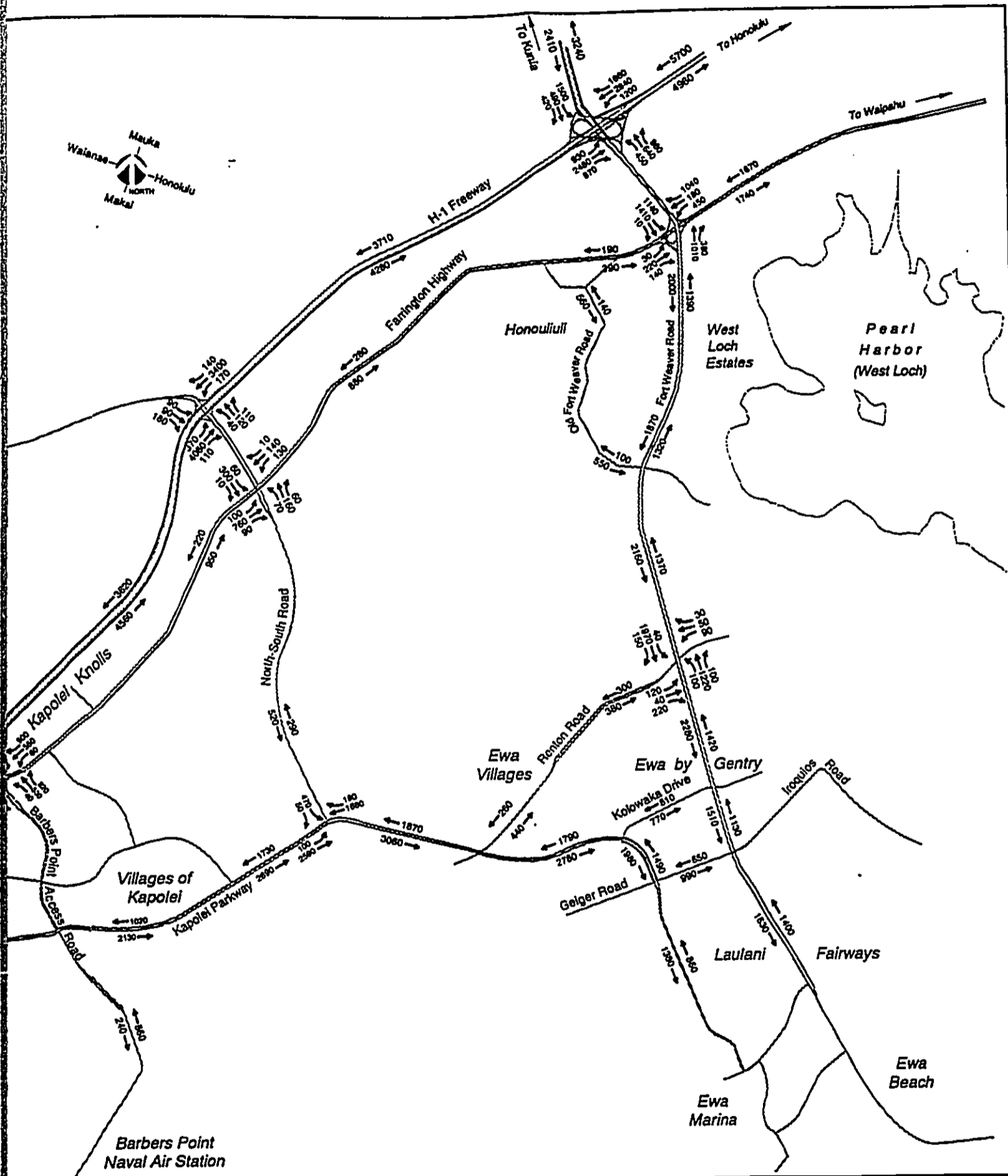
- Off-ramp, H-1 Freeway Waianae-bound to Kunia Road northbound, afternoon peak hour.





Legend
— Existing or Local Access Roads
= Recommended Regional Improvements





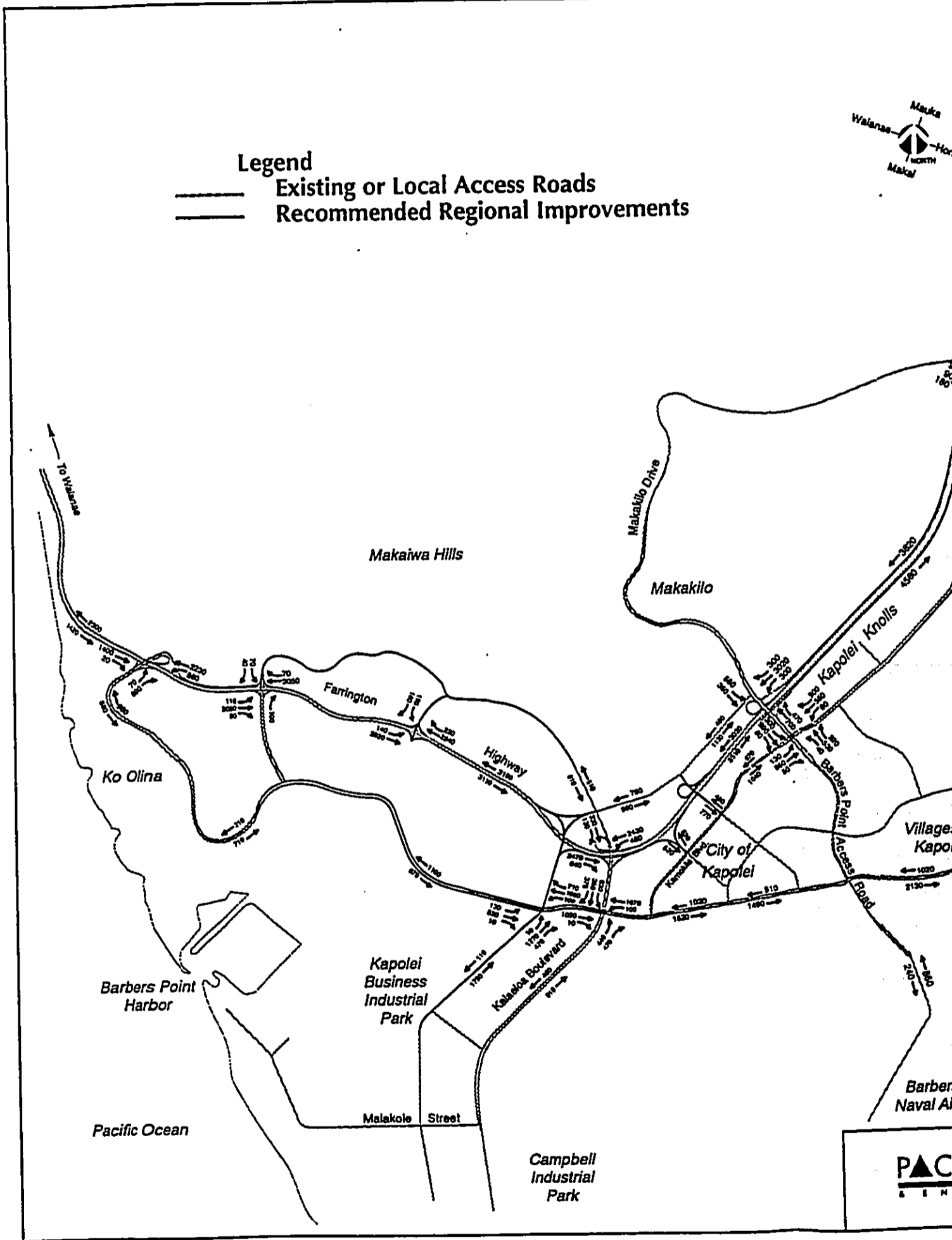
PACIFIC PLANNING
ENGINEERING, INC

2005 Forecasted
Afternoon Traffic Volumes

Figure
8

Legend

-  Existing or Local Access Roads
-  Recommended Regional Improvements



2005 Roadway Improvements

The improvements developed for the 2005 Ewa roadway network are listed in Table 8 and shown in Figure 9. In addition, a schematic diagram of the 2005 improvements is presented in Figure 10.

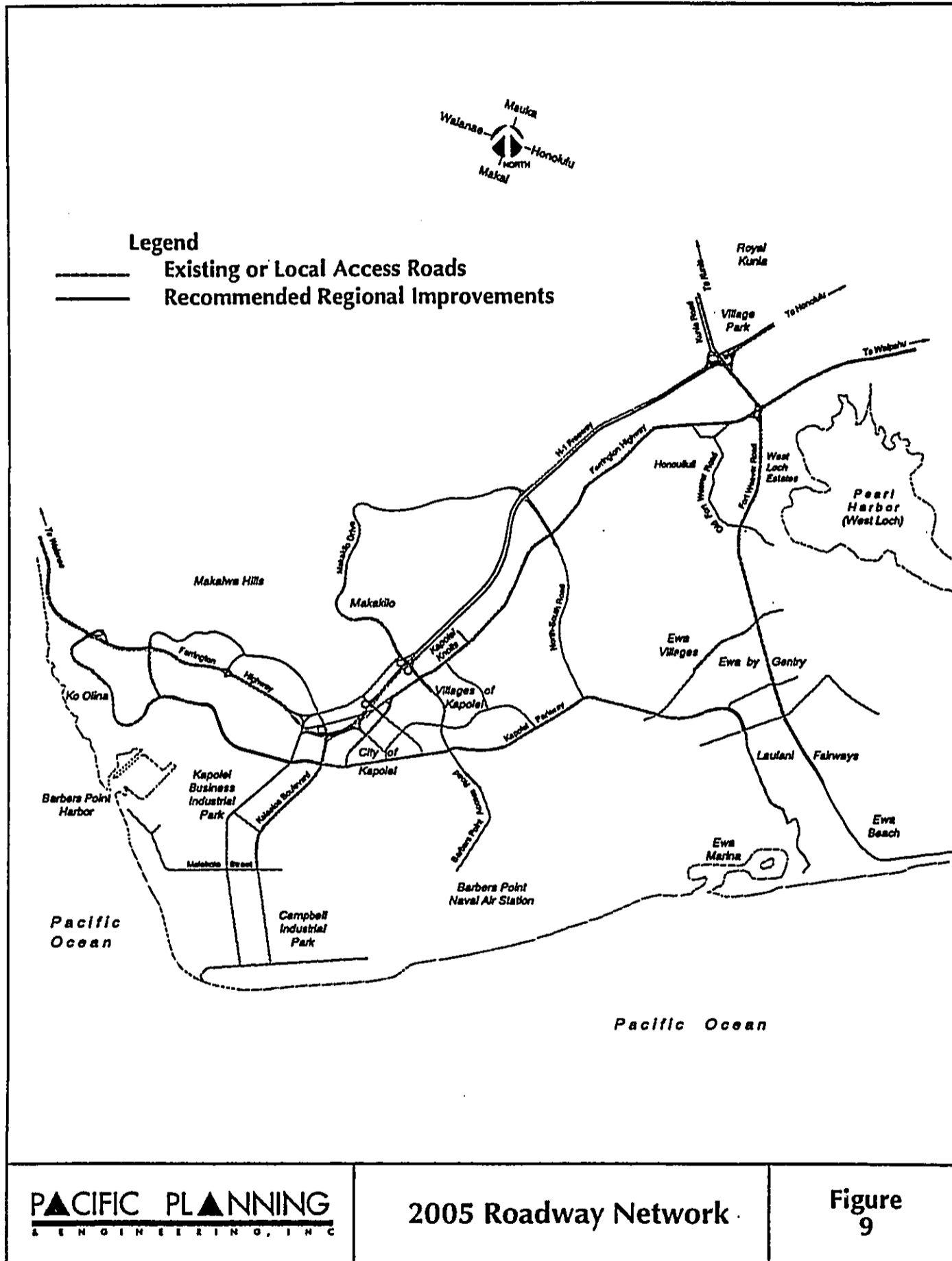
The improvements identified for 2005 are in addition to the improvements identified for the 1997 phase, and would accommodate the forecasted 2005 traffic volumes. Alternative improvements or layouts could be investigated during the subsequent planning or design stages for the specific roadway improvements.

TABLE 8. 2005 ROADWAY IMPROVEMENTS

Facility	Improvement Description
1. H-1 Freeway	a. Additional lanes (expand from 6 to 8 lanes) from Makakilo Interchange to North-South Interchange. b. Additional lane, Kunia Interchange to North-South Interchange, Honolulu bound direction only.
2. Makaiwa Hills (West) Interchange	a. New interchange on Farrington Highway between Ko Olina Interchange and Nanakai Gardens.
3. Makaiwa Hills (East) Interchange	a. New diamond interchange on Farrington Highway between Nanakai Gardens and Palailai Interchange.
4. Hanua Street Overpass	a. New overpass, couplet with Palailai Interchange, providing a bridge to span Farrington Highway. b. Fly-over on-ramp from Hanua Street to Farrington Highway Honolulu bound. c. On-ramp from Hanua Street to Farrington Highway Waianae bound, with link to proposed Mauka Frontage Road between Palailai and Makakilo Interchanges.

TABLE 8. 2005 ROADWAY IMPROVEMENTS
(continued)

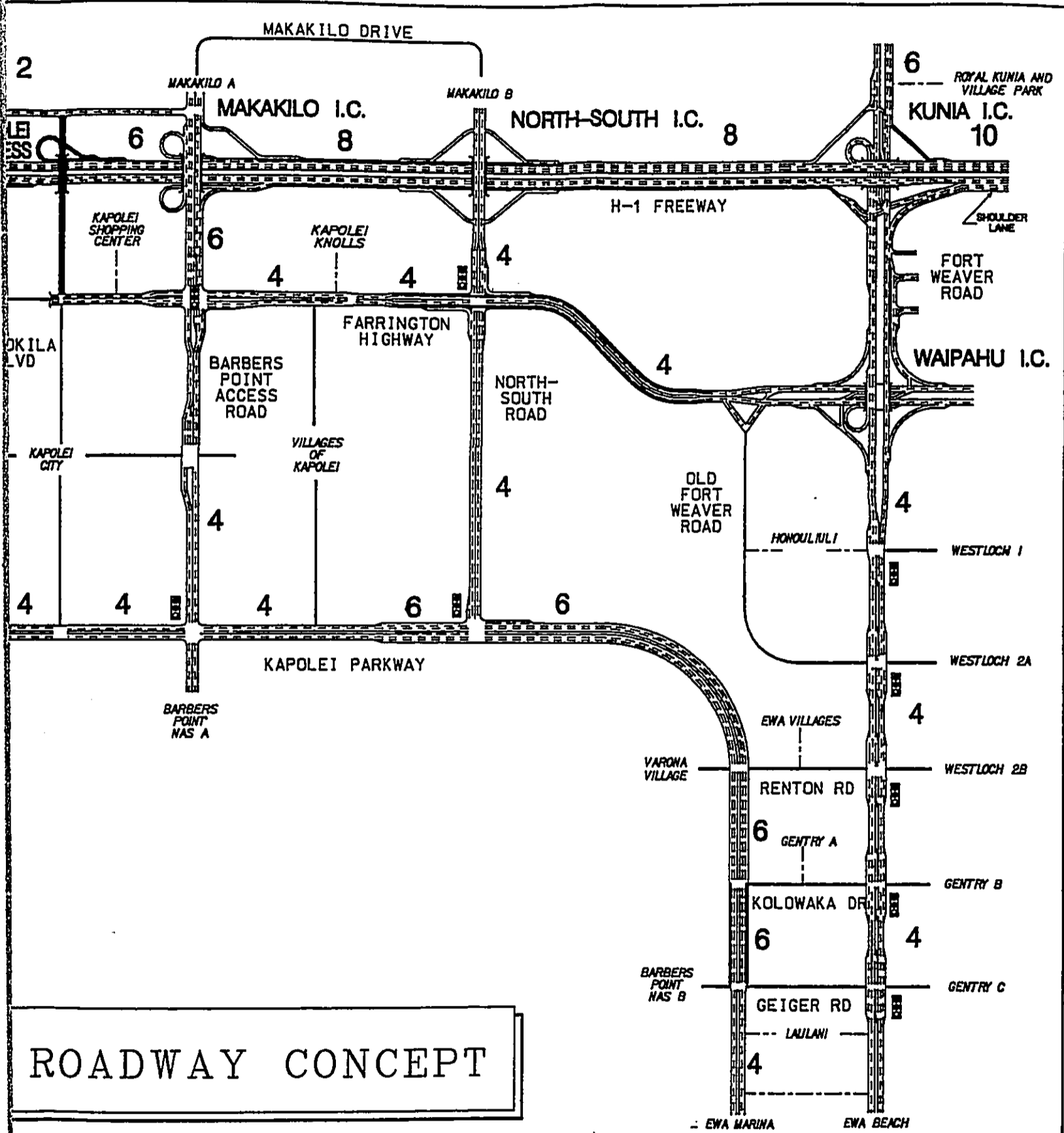
- | | |
|--------------------------------|--|
| 5. Palailai Interchange | <p>Modify interchange to create couplet with new Hanua Street Interchange:</p> <ul style="list-style-type: none"> a. Remove on-ramp, Kalaeloa Boulevard to H-1 Freeway Honolulu bound b. Remove Farrington Highway link to Kalaeloa Boulevard. c. Relocate Waianae bound on-ramp. d. Change Kalaeloa Boulevard to one-way roadway south bound, from Palailai Interchange to Kapolei Parkway. |
| 6. City of Kapolei West Access | <ul style="list-style-type: none"> a. New off-ramp, H-1 Freeway Honolulu bound to City of Kapolei. b. New on-ramp, City of Kapolei to H-1 Freeway Honolulu bound. |
| 7. City of Kapolei East Access | <ul style="list-style-type: none"> a. New bridge to span H-1 Freeway, replacing the existing Farrington Highway link which would be removed (Item 5b. above). b. New off-ramp, H-1 Freeway Waianae bound to new Frontage Road. c. New loop off-ramp, H-1 Freeway Waianae bound to City of Kapolei. |
| 8. Kunia Interchange | <ul style="list-style-type: none"> a. Add second off-ramp lane, H-1 Freeway Waianae bound to Kunia Road. |
| 9. Kunia Road | <ul style="list-style-type: none"> a. Additional lanes (expand from two to four lanes) mauka of the Kunia Interchange. |
| 10. Farrington Highway | <ul style="list-style-type: none"> a. Additional lane, Ko Olina Interchange to new Makaiwa Hills (West) Interchange, Waianae bound direction only. b. Additional lanes (expand from 4 to 6 lanes) from new Makaiwa Hills (East) Interchange to Palailai Interchange. c. Additional lanes (expand from two to four lanes) from Kapolei Knolls/ Village of Kapolei entrance to Old Fort Weaver Road. |
| 11. North-South Road | <ul style="list-style-type: none"> a. Additional lanes (expand form 4 to 6 lanes) between Kolowaka Drive and Geiger Road. |
| 12. Kapolei Parkway | <ul style="list-style-type: none"> a. New four-lane roadway, Ko Olina Resort to Kalaeloa Boulevard. b. Additional lanes (expand from 4 to 6 lanes), Hanua Street to Kamokila Boulevard. |
| 13. Hanua Street | <ul style="list-style-type: none"> a. New one-way three-lane roadway north bound, Kapolei Parkway to H-1 Freeway. b. New four-lane roadway from Malakole Street to Kapolei Parkway. |



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2005 Roadway Network

Figure 9



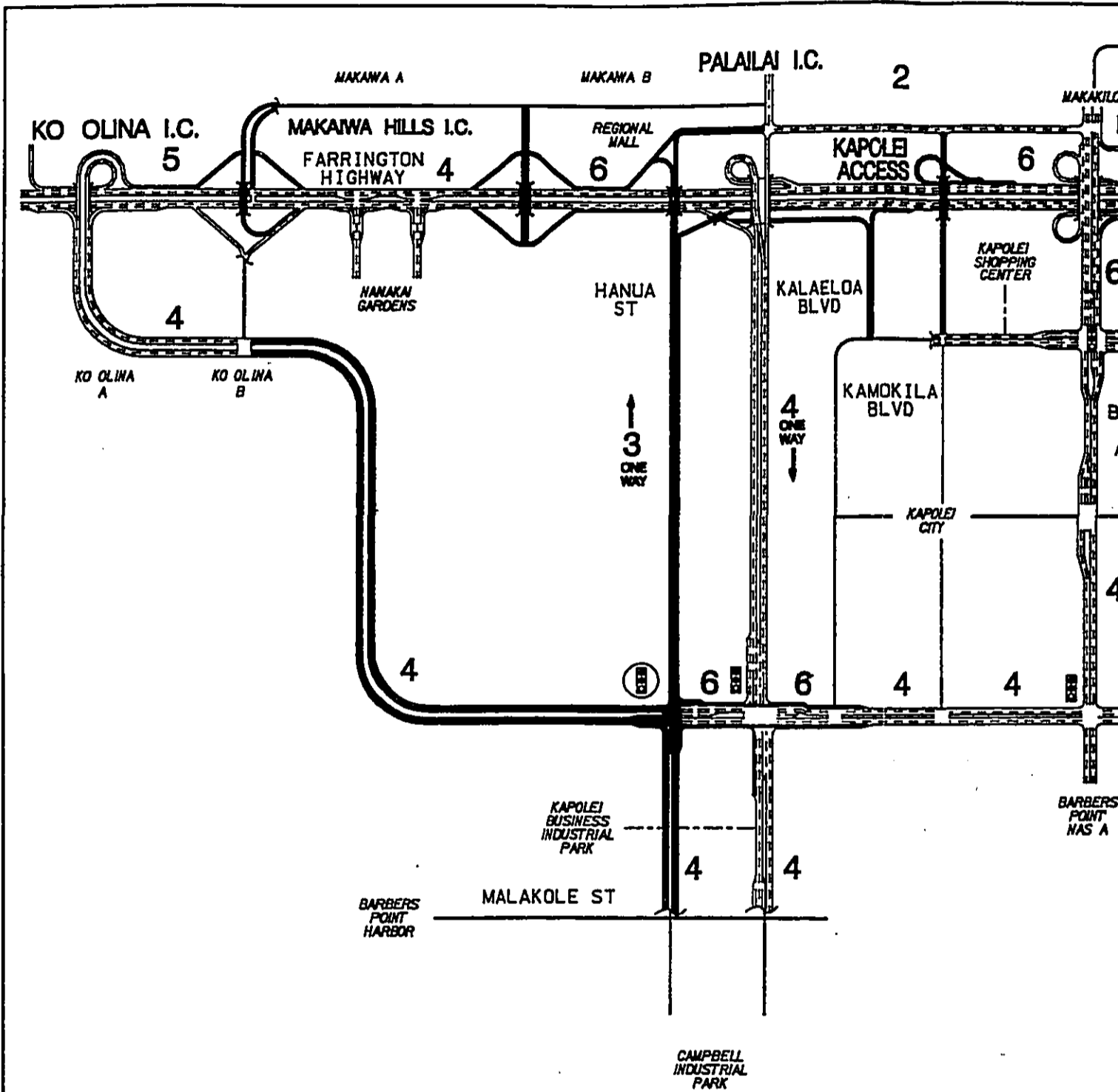
ROADWAY CONCEPT

REVISION	DATE
0 RELEASED	2/12/92
1 REVISION PER DOT	6/29/92




PACIFIC PLANNING & ENGINEERING, INC.
 1221 Kapolei Blvd., Suite 740, Honolulu, HI 96814

**EWA REGION HIGHWAY MASTER PLAN
 2005 ROADWAY CONCEPT**

DATE: FEBRUARY 12, 1992 FILED: NONE **FIGURE 10**



NOTES:

1.  = IMPROVEMENTS TO THE 1997 NETWORK.
2. **4** = TOTAL NUMBER OF THROUGH TRAVEL LANES.
3.  = NEW TRAFFIC SIGNAL FOR REGIONAL ROADWAY INTERSECTION.
4.  = EXISTING & 1997 TRAFFIC SIGNALS.
5. INTERSECTIONS AND INTERCHANGES ARE SCHEMATICALLY REPRESENTED IN THIS PRESENTATION AND SHOULD NOT BE USED FOR DETERMINING DESIGN PARAMETERS.

EWA 2005 ROADWAY NETWORK

Detailed descriptions of the 2005 roadway improvements are provided below. While the roadway improvements are discussed as separate projects, all of the roadway improvements in the 2005 roadway network are needed to serve the forecasted 2005 traffic volumes to maintain an acceptable level-of-service throughout the region during the peak hours.

H-1 Freeway

In 2005, additional lanes are needed on H-1 Freeway between the Makakilo and North-South Interchanges and between the North-South and Kunia Interchanges (Honolulu bound only) for increased roadway capacity as well as improving merging movements at the respective on and off-ramps.

Makaiwa Hills Interchanges

Approximately 300 feet west of the Palailai Interchange, the H-1 Freeway becomes Farrington Highway. Two new interchanges (referred to as Makaiwa Hills West and East) would be needed along this section of Farrington Highway to provide access to the Makaiwa Hills residential development and the regional mall. The West interchange would be constructed directly across the Koio Drive, the secondary access to Ko Olina resort. The East interchange is currently being planned as a diamond interchange.

Hanua Street Overpass

A new overpass formed by the extension of Hanua Street to Farrington Highway, together with the improvements to the Palailai Interchange, will increase the roadway capacity to the industrial park area and City of

Kapolei by increasing the laneage and decreasing delays created by conflicting movements. Between the Farrington Highway and Kapolei Parkway, Hanua Street would require three lanes with one-way traffic in the mauka bound direction. Hanua Street would form a couplet with Kalaeloa Boulevard, which would be converted to carry one-way, makai bound traffic.

Palailai Interchange

For the 2005 phase, the Palailai Interchange would be modified to operate in conjunction with a new overpass formed by extending Hanua Street north to the H-1 Freeway. The Hanua Street extension and Kalaeloa Boulevard would be one-way streets and form a mauka-makai couplet between the freeway and Kapolei Parkway. The four-lane Kalaeloa Boulevard would need to be converted to carry one-way traffic in the makai bound direction. The Palailai Interchange would provide one-way access into the industrial park area and to City of Kapolei via Kalaeloa Boulevard. The existing Honolulu bound off-ramp, which presently links to Farrington Highway near the Kapolei Shopping Center would need to be removed. The existing Waianae bound on-ramp from Farrington Highway would be relocated to form a four-way intersection with the proposed 1997 Mauka Frontage Road between the Palailai and Makakilo Interchanges.

City of Kapolei Access

As the City of Kapolei grows, access to and from this major employment center becomes critical. Direct access to and from City of Kapolei would be provided by introducing two new links to the H-1 Freeway, between the Palailai and Makakilo Interchanges. These new links are referred to herein as the City of Kapolei West Access and East Access and would alleviate future traffic congestion at the Palailai and Makakilo Interchanges.

The West Access would allow Honolulu bound vehicles direct access onto the H-1 freeway from the City of Kapolei. Traffic from Waianae would be able to enter the City of Kapolei via an off-ramp which begins west of the Palailai Interchange and extends to the West Access.

The second access to the City of Kapolei would be provided by a new off-ramp, located just west of the Makakilo Interchange and referred to as the City of Kapolei East Access in this report. This new off-ramp would allow direct access to the City of Kapolei for Waianae bound traffic on the H-1 Freeway and traffic on the proposed mauka frontage road between the Palailai and Makakilo Interchanges. The new overpass across H-1 Freeway would replace the existing Farrington Highway overpass which would need to be removed for the construction of these improvements.

Kunia Interchange

An additional off-ramp lane from H-1 Freeway to Kunia Road, mauka bound, will increase the capacity of the off-ramp to accommodate increased traffic volumes as developments along Kunia Road progress.

Kunia Road

Kunia Road would need to be widened from four to six lanes, mauka of the Kunia Interchange to accommodate the growth in traffic volumes from the Royal Kunia and Village Park projects along Kunia Road.

Farrington Highway

West of the existing Palailai Interchange, the H-1 Freeway becomes Farrington Highway. As the City of Kapolei and Makaiwa Hills develop,

the increase in traffic volumes on Farrington Highway near Ko Olina require that the roadway capacity be increased between the Ko Olina and Makaiwa Hills (West) Interchanges, Waianae bound only. Two additional lanes would also be required on Farrington Highway between the Makaiwa Hills (East) and Palailai Interchanges.

For the section of Farrington Highway between the access to Kapolei Knolls/Villages of Kapolei and Old Fort Weaver Road, two additional lanes would be needed to expand this highway from two to four lanes.

North-South Road

Two additional lanes on the North-South Road will be needed between Kolowaka Drive and Geiger Road to provide increased capacity as the Ewa Marina development progresses. The laneage of the North-South Road will increase from four to six travel lanes.

Kapolei Parkway

As the Ko Olina Resort near completion, the extension of the Kapolei Parkway will allow direct access to the City of Kapolei. The Parkway would also need to have two additional lanes between Kamokila Boulevard and Hanua Street for increased capacity.

Hanua Street

Hanua Street will be extended from the new interchange at Farrington Highway to the industrial area. Between Farrington Highway and Kapolei Boulevard, this three-lane roadway would be designated for one-way mauka bound traffic. South of Kapolei Parkway, Hanua Street requires four travel lanes for two-way traffic.

COST ESTIMATE

Historically, Federal, State and County funds have funded the regional roadway improvements. However, with the decreasing levels of funding from governmental sources, it has become difficult to implement the timely construction of regional roadway improvements to serve new developments. The Developers Working Group has agreed to participate with the governmental agencies in the funding of the 1997 roadway improvements to assist with the construction of the needed roadway improvements.

Cost Estimate of 1997 Improvements

The estimated cost of the 1997 improvements is \$148.7 million. This estimate is for planning purposes only and is subject to change; more accurate construction costs will be determined during the subsequent design/bidding stage of the individual projects. The following guidelines and assumptions are used in development of the cost estimate.

The cost estimate is in 1991 dollars. Construction costs are generally based on cost estimates for recent State Department of Transportation projects. Detailed cost estimates or bid prices from other sources are used when available for a particular project. Appendix C contains a breakdown of the cost estimate by project.

Construction costs for each highway facility are based on appropriate type of facility, according to the adjacent land uses. For instance, Kapolei Parkway is assumed to have curb and gutters in the vicinity of the Villages of Kapolei, an urban area. The North-South Road would have paved shoulders, but no curb and gutter, between the North-South Interchange and Kapolei Parkway, where the neighboring land uses are designated for agricultural uses, or rural facilities. The cost estimate is based on the lowest cost alternative for the adjacent land use.

The improvements are sized to meet minimum State and County standards. Wherever possible, the use of existing facilities or rights-of-way is maximized, such as the use of the median area along the H-1 Freeway for an additional lane.

Level-of-service D as a minimum for roadway facilities is used, except where conditions permitted; the Level-of-service D is relaxed to Level-of-service E, where reasonable. For 1997 improvements, only the Makakilo Interchange ramps to/from Honolulu are at Level-of-service E, however, the H-1 Freeway lanes are at Level-of-service D or better.

A factor of 7.5 percent for planning and 10 percent for design and a contingency factor of 35 percent are added to the construction costs. Planning includes corridor studies, environmental impact assessments, public hearings, etc. Engineering design costs include review by appropriate government agencies, including the State Department of Transportation or Federal Highway Administration. Inflation is not included in the cost estimate.

The cost estimate does not include the following items, but could be updated when such information becomes available:

- Right-of-way acquisition costs.
- Drainage and flood control structures, such as bridges, cast-in-place concrete box culverts, or structural plate culverts, other than to drain the road itself.
- Relocation of existing utilities such as sewers, water, power, telephone, etc.
- Rock excavation, in excess of DOT average roadway projects.
- Construction management costs.
- Costs associated with temporary traffic detours during construction.
- Backbone infrastructure.

SUMMARY

The *Ewa Region Highway Master Plan* identifies the needed 1997 and 2005 roadway improvements to support the planned development for the secondary urban center in Ewa. This Master Plan describes the long-range regional highway needs of the Ewa Region and conforms to HALI 2005, the current Oahu Metropolitan Planning Organization long-range regional transportation plan for Oahu. Currently, efforts to develop an implementation plan of specific 1997 roadway projects in the Master Plan are being undertaken. In addition, the Developers Working Group is assessing different methods to share the costs of constructing the proposed 1997 roadway improvements.

APPENDIX A

LEVEL - OF - SERVICE DEFINITIONS

BASIC FREEWAY SEGMENTS

FREEWAY ON - RAMPS AND OFF - RAMPS

MULTI - LANE HIGHWAYS

TWO - LANE HIGHWAYS

SIGNALIZED INTERSECTIONS, PLANNING ANALYSIS

: UNSIGNALIZED INTERSECTIONS

DEFINITION OF LEVEL-OF-SERVICE
FOR
BASIC FREEWAY SEGMENTS

Level of service for basic freeway segments is defined in terms of *average travel speed, density, and flow rate.*

Level-of-service A: Level A describes primarily free flow operations. Average travel speeds near 60 mph generally prevail on 70 mph freeway elements. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. This affords the motorist a high level of physical and psychological comfort. The effects of minor incidents or breakdowns are easily absorbed at this level. Although they may cause a deterioration in LOS in the vicinity of the incident, standing queues will not form, and traffic quickly returns to LOS A on passing the disruption.

Level-of-service B: Level B also represents a reasonably free-flow conditions, and speeds of over 57 mph are maintained on 70-mph freeway elements. The ability to maneuver within the traffic stream is only slightly restricted and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents and breakdowns are still easily absorbed, though local deterioration in service would be more severe than for LOS A.

Level-of-service C : Level C provides for stable operations, but flows approach the range in which small increases in flow will cause substantial deterioration in service. Average travel speeds are still over 54 mph. Freedom to maneuver within the traffic stream is noticeably restricted at LOS C, and lane changes require additional care and vigilance by the driver. Minor incidents may still be absorbed, but the local deterioration in service will be substantial. Queues may be expected to form behind any significant blockage. The driver now experiences a noticeable increase in tension due to the additional vigilance required for safe operation.

Level-of-service D: Level D borders on unstable flow. In this range, small increases in flow cause substantial deterioration in service. Average travel speeds of 46 mph or more can still be maintained on 70 mph freeway

elements. Freedom to maneuver within the traffic stream is severely limited, and the driver experiences drastically reduced physical and psychological comfort levels. Even minor incidents can be expected to create substantial queuing, because the traffic stream has little space to absorb disruptions.

Level-of-service E: The boundary between LOS D and LOS E describes operating at capacity. Operations in this level are extremely unstable, because there are virtually no usable gaps in the traffic stream. This, however, represents the minimum spacing at which stable flow can be accommodated. Any disruption to the traffic stream, such as a vehicle entering from a ramp, or a vehicle changing lanes, causes following vehicles to give way to admit the vehicle. This condition establishes a disruption wave which propagates through the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate even the most minor disruptions. Any incident can be expected to produce a serious breakdown with extensive queuing. The range of flows encompassed by LOS E is relatively small compared to other levels, but reflects a substantial deterioration in service. Maneuverability within the traffic stream is extremely limited, and the level of physical and psychological comfort afforded to the driver is extremely poor. Average travel speeds at capacity are approximately 30 mph.

Level-of-service F: Level F describes forced or breakdown flow. Such conditions generally exist within queues forming behind breakdown points. Such breakdowns occur for a number of reasons:

- a. Traffic incidents cause a temporary reduction in the capacity of short segment, such that the number of vehicles arriving at the point is greater than the number of vehicles that can traverse it.
- b. Recurring points of congestion exist, such as merge or weaving areas and lane drops, where the number of vehicles arriving is greater than the number of vehicles traversing the point.

REFERENCE: Highway Capacity Manual (Special Report 209, 1985)

DEFINITION OF LEVEL-OF-SERVICE
FOR
ON-RAMPS and OFF-RAMPS

Level of service for signalized intersections is defined in terms of *flow rates*.

Level-of-service A: Represents unrestricted operation. Merging and diverging vehicles have little effect on other freeway flows.

Level-of-service B: Merging vehicles have to adjust their speed slightly to fill lane 1 gaps; diverging vehicles still do not experience any significant turbulence. Flow may be described generally as smooth and stable.

Level-of-service C: Both lane 1 and on-ramp vehicles must adjust their speed to accomplish smooth merging, and under heavy on-ramp flows, minor ramp queuing may occur. Some slowing may also occur in diverge areas. Overall speed and density of freeway vehicles are not expected to be seriously deteriorated.

Level-of-service D: Smooth merging becomes difficult to achieve. Both lane 1 and on-ramp vehicles must frequently adjust their speed to avoid conflicts in the merge area. Slowing in the vicinity of diverge areas is also significant. At heavily used on-ramps, ramp queues may become a disruptive factor.

Level-of-service E: Represents capacity operation. On-ramp queues may be significant. Diverge movements are significantly slowed, and some queuing may occur in the diverge area. All vehicles are affected by turbulence on freeway.

Level-of-service F: All merging is on a stop-and-go basis, and ramp queues and lane 1 breakdowns are extensive. Much turbulence is created as vehicles attempt to change lanes to avoid merge and diverge areas. Considerable delay is encountered in the vicinity of the ramp terminal, and conditions may vary widely, from minute to minute, as unstable conditions create "waves" of alternatively good and forced flow.

REFERENCE: Highway Capacity Manual (Special Report 209, 1985)

DEFINITION OF LEVEL-OF-SERVICE
FOR
MULTI-LANE HIGHWAYS

Level of service for multi-lane highways is defined in terms of *density*.

Level-of-service A describes completely free-flow conditions. Maximum density is 12 passenger cars per mile per lane (pcpmpl) and the ability to maneuver within the traffic stream is high.

Level-of-service B is also indicative of free flow. The maximum density is 20 pcpmpl. Minor disruptions to flow are still easily absorbed at this level.

Level-of-service C represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream, and to select an operating speed, is now clearly affected by the presence of other vehicles. The maximum density is 30 pcpmpl.

Level-of-service D borders on unstable flow. Speeds and ability to maneuver are severely restricted because of traffic congestion. The maximum density is 42 pcpmpl.

Level-of-service E represents operations at or near capacity, and is quite unstable. The maximum density is 67 pcpmpl. This is the minimum spacing at which uniform flow can be maintained, and effectively defined a traffic stream with no usable gaps.

Level-of-service F represents forced or breakdown flow. It occurs at a point where vehicles arrive either at a rate greater than that at which they are discharged or at a point on a planned facility where forecasted demand exceeds the computed capacity. Densities are higher than 67 pcpmpl. Queues form behind the breakdowns and are highly unstable.

REFERENCE: Highway Capacity Manual (Special Report 209, 1985)

DEFINITION OF LEVEL-OF-SERVICE
FOR
TWO-LANE HIGHWAYS

Level of service for two-lane highways is defined in terms of *percent time delay*.

Level-of-service A describes completely free-flow conditions. Motorists are able to drive at their desired speed. Driver would be delayed no more than 30 percent of the time by slow-moving vehicles. A maximum flow rate of 420 pcph, total in both directions, may be achieved under ideal conditions.

Level-of-service B characterizes the region of traffic flow wherein speeds of 55 mph or slightly higher are expected on level terrain. Drivers are delayed up to 45 percent of the time on the average. Service flow rates of 750 pcph, total in both directions, can be achieved under ideal conditions.

Level-of-service C characterizes the region of traffic flow wherein speeds of 52 mph or slightly higher are expected on level terrain even though unrestricted passing demand exceeds passing capacity. Traffic flow is still stable. Drivers are delayed up to 60 percent of the time on the average. Service flow rates of 1200 pcph, total in both directions, can be achieved under ideal conditions.

Level-of-service D borders on unstable flow. Speeds of 50 mph or slightly higher can still be achieved on level terrain under ideal conditions. Passing demand is very high while passing capacity approaches zero. Traffic flow is still stable. Drivers are delayed up to 75 percent of the time on the average. Service flow rates of 1800 pcph, total in both directions, can be achieved under ideal conditions.

Level-of-service E is defined as traffic flow conditions on two-lane highways having a percent time delay of greater than 75 percent. Under ideal conditions, speeds will drop below 50 mph. Average travel speeds on highways with less than ideal conditions will be slower, as low as 25 mph on sustained upgrades. Under ideal conditions, capacity is 2800 pcph, total in both directions.

Level-of-service F represents heavily congested flow with traffic demand exceeding capacity. volumes are lower than capacity, and speeds are below capacity speed.

REFERENCE: Highway Capacity Manual (Special Report 209, 1985)

**DEFINITION OF PLANNING ANALYSIS
FOR
SIGNALIZED INTERSECTIONS**

Planning analysis of intersections is a broad evaluation of the capacity of an intersection without considering the details of signalization. It provides a basic assessment of whether or not capacity is likely to be exceeded for a given set of demand volumes and geometrics. At this level, only capacity is addressed because the detailed information needed to estimate delay is not available.

Planning Analysis measures a signalized intersection's capacity level using the sum of its critical movements. The total critical volume for the intersection is the sum of the critical volumes for the north-south and east-west streets. The critical volume for the intersection is compared to the criteria in the table below. The analysis determines whether an intersection is under, near, or over capacity.

Critical Volume for Intersection, VPH	Relationship to Probable Capacity
0 to 1,200	Under Capacity
1,200 to 1,400	Near Capacity
≥1,400	Over Capacity

REFERENCE: Highway Capacity Manual (Special Report 209, 1985)

DEFINITION OF LEVEL-OF-SERVICE
FOR
UNSIGNALIZED INTERSECTIONS

The concept of levels of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level of service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with Level-of-Service A representing the best operating conditions and Level-of-Service F the worst.

Level-of-Service definitions--In general, the various levels of service are defined as follows for uninterrupted flow facilities:

Level-of-Service A represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.

Level-of-Service B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.

Level-of-Service C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.

Level-of-Service D represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.

Level-of-Service E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such a maneuver. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

Level-of-Service F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go wave, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level-of-Service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of the vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and Level-of-Service F is an appropriate designation for such points.

These definitions are general and conceptual in nature, and they apply primarily to uninterrupted flow. Levels of service for interrupted flow facilities vary widely in terms of both the user's perception of service quality and the operational variables used to describe them.

REFERENCE: Highway Capacity Manual (Special Report 209, 1985)

APPENDIX B

DETAILED LAND USES

1997 AND 2005

Table B. 1997 AND 2005 DETAILED LAND USES

<u>Developer/Project Name/Land Uses</u>	<u>Quantity</u>			<u>Parameter</u>
	<u>1997</u> <u>Dev*</u>	<u>2005</u>		
	<u>Dev</u>	<u>Dev</u>	<u>Adj*</u>	
<i>Dept. of Housing and Community Devt.</i>				
Ewa Villages				
Single family	1,002	1,002	802	Dwelling units
Multi-family	112	112	112	Dwelling units
Commercial	15,000	15,000	15,000	Square feet
Golf Course (18-hole)	185	185	185	Acres
District park	25	25	25	Acres
Low-rise elderly	84	84	84	Units
Honouliuli				
Multi-family	433	433	208	Dwelling units
West Loch				
Single-family	1,185	1,185	1,185	Dwelling units
Multi-family	264	264	264	Dwelling units
Golf Course (18-hole)	187	187	187	Acres
Shoreline Park	39	39	39	Acres
Park	14	14	14	Acres
Elderly housing	150	150	150	Dwelling units
Commercial	38,000	38,000	38,000	Square feet
Day Care Center	12,000	12,000	12,000	Square feet
Church	3,500	3,500	3,500	Square feet
Varona Village				
Single-family	70	70	70	Dwelling units
<i>Cook Inlet Region, Inc.</i>				
Camp Malakole				
Industrial subdivision	210	210	210	Employees

* Scenario utilized for transportation computer model.

**Table B. 1997 AND 2005 DETAILED LAND USES
(continued)**

<u>Developer/Project Name/Land Uses</u>	<u>Quantity</u>			<u>Parameter</u>
	<u>1997</u> <u>Dev*</u>	<u>2005</u>		
	<u>Dev</u>	<u>Adj*</u>		
<i>Estate of James Campbell</i>				
James Campbell Industrial Park Industrial park	3,500	3,500	3,500	Employees
Kapolei Business-Industrial Industrial park	894	3,794	3,794	Employees
Commercial	58,080	261,360	261,360	Square feet
Kapolei City				
Local retail	285,654	685,570	685,570	Square feet
Office	310,248	744,596	744,596	Square feet
Power Center	143,229	343,750	343,750	Square feet
Multi-family	0	2,300	747	Dwelling Units
Kapolei Shopping Center				
Commercial	255,000	255,000	255,000	Square feet
Laulani/Fairways				
Single-family	600	900	681	Dwelling Units
Multi-family	300	300	0	Dwelling Units
Makaiwa Hills				
Single-family	200	1,800	1,038	Dwelling Units
Golf course (18-hole)	180	180	180	Acres
Open space/park	0	33	33	Acres
Commercial	0	500,000	500,000	Square Feet

* Scenario utilized for transportation computer model.

Table B. 1997 AND 2005 DETAILED LAND USES
(continued)

<u>Developer/Project Name/Land Uses</u>	<u>Quantity</u>			<u>Parameter</u>
	<u>1997</u> <u>Dev*</u>	<u>2005</u>		
	<u>Dev</u>	<u>Dev</u>	<u>Adj*</u>	
<i>Finance Realty Company, Ltd.</i>				
Kapolei Knolls				
Single-family	460	460	460	Dwelling units
Park	3.5	3.5	3.5	Acres
Makakilo				
Single-family	3,409	3,674	3,409	Dwelling Units
Multi-family	1,834	2,180	1,834	Dwelling Units
Park	32.3	32.3	32.3	Acres
Golf course (18-hole)	230	230	230	Acres
Makakilo Elementary School	500	500	500	Students
Mauka Lani Elementary School	384	384	384	Students
Service station	1,344	1,344	1,344	Square Feet
Mini shopping center	6,277	6,277	6,277	Square Feet
Sales office	1,926	1,926	1,926	Square Feet
Commercial	0	54,540	54,540	Square Feet
<i>Gentry-Pacific, Ltd.</i>				
Ewa by Gentry				
Single-family	3,870	3,870	3,870	Dwelling units
Low-rise residential condominium	3,692	3,692	3,692	Dwelling units
Neighborhood shopping center	119,790	119,790	119,790	Square feet
Light industrial	1,000	1,000	1,000	Employees
Park (3)	28	28	28	Acres
Golf course (18-hole)	188	188	24	Acres
Public facility	5	5	5	Acres
Elementary school	1,000	1,000	1,000	Students

* Scenario utilized for transportation computer model.

Table B. 1997 AND 2005 DETAILED LAND USES
(continued)

<u>Developer/Project Name/Land Uses</u>	<u>Quantity</u>			<u>Parameter</u>
	<u>1997</u>	<u>2005</u>		
	<u>Dev*</u>	<u>Dev</u>	<u>Adj*</u>	
<i>Halekua Development Corporation</i>				
Royal Kunia, Phases I & II				
Single-family	1,299	2,499	2,499	Dwelling units
Low-density apartments	1,120	2,370	2,370	Dwelling units
Parks	9.5	25.5	25.5	Acres
Industrial	300	2,650	2,650	Employees
Community center	12.1	12.1	12.1	Acres
Park and ride lot/child care center	500	500	500	Parking stalls
Elementary school	0	500	500	Students
Golf course (3) (18-hole)	332.2	503.9	503.9	Acres
Village Park				
Single-family	1,686	1,686	1,686	Dwelling units
Multi-family	120	120	120	Dwelling units
<i>HASEKO (Hawaii), Inc.</i>				
Ewa Marina				
Single-family	609	737	737	Dwelling units
Multi-family	966	4,113	966	Dwelling units
Marina	1,300	1,600	1,600	Slips
Four hotels	650	1,300	1,300	Rooms
Retail shops	40,000	40,000	40,000	Square feet
Restaurants (5)	18,000	42,000	42,000	Square feet
Exhibition cntr/conference facilities	0	8,000	8,000	Square feet
International fitness center	0	60,000	60,000	Square feet
Yacht club	18,000	18,000	18,000	Square feet
Tennis complex	19	19	19	Courts
Golf course (27-hole)	299	299	299	Acres
Oneula Beach Park	30	30	30	Acres
District Park	17	17	17	Acres

* Scenario utilized for transportation computer model.

Table B. 1997 AND 2005 DETAILED LAND USES
(continued)

<u>Developer/Project Name/Land Uses</u>	<u>Quantity</u>			<u>Parameter</u>
	<u>1997</u>	<u>2005</u>		
	<u>Dev*</u>	<u>Dev.</u>	<u>Adj*</u>	
<i>Housing Finance and Development Corporation</i>				
Villages of Kapolei				
Single-family	2,734	3,106	2,734	Dwelling units
Multi-family condominium	855	855	855	Dwelling units
Park and ride	500	500	500	Parking stalls
Golf course	180	180	180	Acres
Rental units (3-story building)	100	150	100	Dwelling units
Elderly housing (7-story building)	600	800	600	Dwelling units
Elementary school	650	1,300	1,300	Students
High school	0	1,825	1,825	Students
Intermediate school	925	925	925	Students
Park (2)	19.7	19.7	19.7	Acres
Recreation center (2)	5.7	5.7	5.7	Acres
Church	4.7	4.7	4.7	Acres
Commercial (two shopping centers)	141,570	141,570	141,570	Square feet
<i>State Department of Transportation, Harbors Division</i>				
Barbers Point Deep Draft Harbor				
Harbor basin	92	92	92	Acres
Maritime industrial	75	187	187	Acres

* Scenario utilized for transportation computer model.

Table B. 1997 AND 2005 DETAILED LAND USES
(continued)

<u>Developer/Project Name/Land Uses</u>	<u>Quantity</u>			<u>Parameter</u>
	<u>1997</u>	<u>2005</u>		
	<u>Dev*</u>	<u>Dev</u>	<u>Adj*</u>	
<i>West Beach Estates</i>				
Ko Olina Resort				
Resort hotel/condominium	4,000	4,000	4,000	Units
Multi-family	300	8,700	2,825	Dwelling units
Commercial	0	771,780	771,780	Square Feet
Transit Station	0	2.8	2.8	Acres
Day Care Center/Fire Station	0	2	2	Acres
Marina	350	350	350	Slips
Hawaiian cultural center	22	22	22	Acres
Golf course (2) (18-hole)	342.9	342.9	342.9	Acres
Parks	13.5	46.5	46.5	Acres
Elementary School	0	760	760	Students
<i>Military</i>				
Barbers Point Naval Air Station				
Single-family	854	854	854	Dwelling units
Employment	6,000	6,000	6,000	Employees
<i>Other Developments</i>				
Ewa Beach				
Single-family	1,693	1,693	1,693	Dwelling units
Multi-family	3,172	3,172	3,172	Dwelling units
Employment	2,950	2,950	2,950	Employees
Nanakai Gardens/Honokai Hale				
Single-family	290	290	290	Dwelling units

* Scenario utilized for transportation computer model.

APPENDIX C

COST ESTIMATE

1997 ROADWAY IMPROVEMENTS

APPENDIX C: DESCRIPTION AND ESTIMATED COST OF 1997 IMPROVEMENTS

IMPROVEMENT DESCRIPTION	LOCATION	QUANTITY	ESTIMATED CONST COST (\$million) (a)	CONTINGENCY COST (\$million) (b) = a x 35%	ESTIMATED PLANNING COST (\$million) (c) = a x 7.5%	ESTIMATED DESIGN COST (\$million) (d) = a x 10%	TOTAL COST (\$million) a + b + c + d
1. H-1 Freeway							
a. Additional Laneage	• Kunia IC to North-South IC (westbound only)	12,000 feet	\$1.85	\$0.65	\$0.14	\$0.19	\$2.82
2. Palilai Interchange							
a. Close off-ramp to Farrington Highway							
b. Add second loop off-ramp from Honolulu to CIP		2,200 feet	\$0.68	\$0.24	\$0.05	\$0.07	\$1.04
c. Extend Waianae bound on-ramp		2,600 feet	\$0.80	\$0.28	\$0.06	\$0.08	\$1.22
d. Extend Honolulu bound off-ramp		2,600 feet	\$0.80	\$0.28	\$0.06	\$0.08	\$1.22
3. Makakilo Interchange							
a. Extend Waianae bound off-ramp to Makakilo		2,600 feet	\$0.80	\$0.28	\$0.06	\$0.08	\$1.22
b. New loop off-ramp from Honolulu to Kapolei City		2,300 feet	\$0.71	\$0.25	\$0.05	\$0.07	\$1.08
c. Extend Honolulu bound on-ramp from Kapolei City		2,600 feet	\$0.80	\$0.28	\$0.06	\$0.08	\$1.22
4. North-South Interchanges							
a. New diamond interchange			\$6.95	\$2.43	\$0.52	\$0.69	\$10.60
- Bridge to span H-1		130 feet					
- Total ramp length (4 ramps)		5,600 feet					
5. Kunia Interchanges							
a. Modification of ramps			\$6.00	\$2.10	\$0.45	\$0.60	\$9.15
- Widen Honolulu bound on-ramp to 3 lanes							
- Widen southbound loop off-ramp to 2 lanes and add a southbound lane under H-1 Freeway							
- Add auxiliary lane to Kunia Road northbound							
6. Mauka Frontage Road							
a. New 2-lane Roadway	• Between Palilal and Makakilo Interchanges	5,300 feet	\$3.06	\$1.07	\$0.23	\$0.31	\$4.67
7. Makakilo Drive							
a. Extension towards Honolulu	• From Golf Course to North-South Interchange	Local Roadway	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
8. Barber's Point Access Road							
a. Additional Laneage (2 to 4 lanes)	• Between Farrington Highway and Kapolei Parkway	4,400 feet	\$2.42	\$0.85	\$0.18	\$0.24	\$3.69
9. Kamokila Boulevard							
a. New 4-lane Roadway	• Farrington Highway to Kapolei Parkway	Local Roadway	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

APPENDIX C: DESCRIPTION AND ESTIMATED COST OF 1997 IMPROVEMENTS

IMPROVEMENT DESCRIPTION	LOCATION	QUANTITY	ESTIMATED CONST COST * (\$million)	CONTINGENCY COST * (\$million)	ESTIMATED PLANNING COST * (\$million)	ESTIMATED DESIGN COST * (\$million)	TOTAL COST * (\$million)
			(a)	(b) = a x 35%	(c) = a x 7.5%	(d) = a x 10%	a + b + c + d
10. Farrington Highway							
a. Widen/Reconstruct (4 lanes)	• Kapolei Knolls Entrance to Makakilo Drive	4,000 feet	\$5.56	\$1.94	\$0.42	\$0.56	\$8.47
b. Additional Laneage (2 to 4 lanes)	• Barbers Point Access Road to Kamokila Boulevard	1,800 feet	\$1.00	\$0.35	\$0.08	\$0.10	\$1.53
11. North-South Road (H-1 to Ewa Marina)							
a. New 4-lane Roadway (See Note 5)	• Between H-1 Freeway and Farrington Highway	2,300 feet	\$3.53	\$1.23	\$0.26	\$0.35	\$5.38
b. New 4-lane Roadway	• Between Farrington Highway and Kapolei Parkway	9,000 feet	\$8.60	\$3.01	\$0.65	\$0.86	\$13.12
c. New 6-lane Roadway	• Between Kapolei Parkway and Kolowaka Drive	6,900 feet	\$7.37	\$2.58	\$0.55	\$0.74	\$11.24
d. New 4-lane Roadway (See Note 6)	• Between Kolowaka Drive and Ewa Marina	7,500 feet	\$8.01	\$2.80	\$0.60	\$0.80	\$12.22
e. New Traffic Signal	• North-South Road at Farrington Highway	1 unit	\$0.15	\$0.05	\$0.01	\$0.02	\$0.23
12. Kapolei Parkway (Kalaheoa Blvd to North-South Road)							
a. New 4-lane Roadway (See Note 6)	• Between Kalaheoa Blvd and Villages of Kapolei	10,800 feet	\$11.54	\$4.04	\$0.87	\$1.15	\$17.60
b. New 6-lane Roadway	• Between Villages of Kapolei and North-South Road	3,400 feet	\$3.63	\$1.27	\$0.27	\$0.36	\$5.54
c. New Traffic Signals	• Kapolei Parkway at Kalaheoa Boulevard	1 unit	\$0.15	\$0.05	\$0.01	\$0.02	\$0.23
d. New Traffic Signals	• Kapolei Parkway at Makakilo Drive	1 unit	\$0.15	\$0.05	\$0.01	\$0.02	\$0.23
e. New Traffic Signals	• Kapolei Parkway at North-South Road	1 unit	\$0.15	\$0.05	\$0.01	\$0.02	\$0.23
TOTAL (in millions)			\$74.73	\$26.15	\$5.60	\$7.47	\$114.0

NOTES:

1. Construction estimates based on comparable state projects or projects under construction or design that have detailed cost estimates or bid prices available.
2. Costs in 1991 dollars.
3. Inflation is not included.
4. Estimates do not include rights-of-way acquisition.
5. Includes costs for relocation of cane haul road.
6. Cost for four-lane roadways is based on six-lane estimate, since some developers are planning to build six lanes by 1997, but stripe the pavement for four lanes until additional laneage is needed.