Ms. Letitia N. Uyehara, Director
Office of Environmental Quality Control
State of Hawaii
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

Revised Supplemental Environmental Impact Statement (SEIS)
Heeia Kea Development Plan Amendment
Malama-Gentry Joint Venture
Heeia, Koolaupoko, Oahu, Hawaii

Tax Map Keys: 4-6-06: 1-3, 7-16, 22-51; 4-6-16: 32

We are notifying you of our acceptance of the above as an adequate fulfillment of Chapter 343, HRS.

Major issues considered to be controversial include:

1. Social Impacts of the proposed project.
2. Traffic Impact of the proposed project.
3. Increased usage of local recreational facilities.

Other concerns, which will be addressed by subsequent zoning, subdivision and other permit processes, include:

1. Water Commitment from the Board of Water Supply.
2. Sewage Disposal Facilities Plan approved by the Department of Public Works.
3. Drainage Plan approved by the Department of Public Works.
4. Grading Plan approved by the Department of Public Works.
5. Highway Improvement Plans, as required by the City Department of Transportation Services and the State Department of Transportation.

6. Allocation of Low and Moderate Income Housing to be coordinated with the Department of Housing and Community Development.

If there are any questions, please contact Keith Kurahashi of our staff at 527-6051.

Sincerely,

[Signature]

DONALD A. CLEGG
Chief Planning Officer
Department of General Planning

[Signature]

JOHN P. WHALEN, Director
Department of Land Utilization

Attach.

cc: Mr. Brian L. Gray
October 30, 1986

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Revised Supplemental Environmental Impact Statement (SEIS)
Heeia Kea Development Plan Amendment
Malama-Gentry Joint Venture
Heeia, Koolaupoko, Oahu, Hawaii

Tax Map Keys: 4-6-06: 1-3, 7-16, 22-51; 4-6-16: 32

We have determined that the above is an acceptable Supplemental Environmental Impact Statement document for the proposed project. This determination in no way implies a favorable recommendation on the applicant's request for any approvals or permits required by the Departments of General Planning and Land Utilization for this project.

There are a number of concerns that must be addressed by subsequent zoning, subdivision, and other permit processes. These concerns are included in the acceptance report which is attached.
Mr. Brian L. Gray
Page 2
October 30, 1986

If there are any questions, please contact Keith Kurahashi of our staff at 527-6051.

Sincerely,

Donald Clegg
DONALD A. CLEGG
Chief Planning Officer
Department of General Planning

John P. Whalen
JOHN P. WHALEN, Director
Department of Land Utilization

Attach.

/cc: OEQC
A. BACKGROUND

The Supplemental EIS was prepared for Malama-Gentry Joint Venture. Malama-Gentry Joint Venture proposes to develop 310 single-family residences and 50 low-density apartment units, 4 acres of industrial, 1 acre of commercial, and 5.2 acres of park land on 68.5± acres of land at Heeia Kea, Koolaupoko, Oahu. The project site is designated Residential, Public and Quasi-Public and Agriculture on the Koolaupoko Development Plan Land Use Map.

An Environmental Impact Statement (EIS) was accepted by the City and County of Honolulu Department of Land Utilization (DLU) on April 5, 1983 to have a 389 single-family lot residential subdivision constructed on 102± acres of land at Heeia Kea, Oahu, Hawaii. The EIS was prepared in conjunction with a Special Management Area permit and was expanded to meet Chapter 343 requirements in conjunction with other potential approval requirements.

This Supplemental Environmental Impact Statement (SEIS) has been prepared in conjunction with a current application for an amendment to the Koolaupoko Development Plan Land Use Map. The SEIS discusses the differences and similarities of the current proposal with respect to the residential development presented in 1983. Emphasis has been placed on the discussion of traffic, sewage collection and disposal, and social characteristics since the size and impacts of the two projects, in other respects, are essentially identical.

The proposed project will include grading, roadway improvements, drainage improvements, sewer system improvements, water system improvements, and underground electrical and telephone improvements.

About 50 acres of the project site will be graded, with 140,000 cubic yards of excavation and 220,000 cubic yards of embankment.

Approximately 11,000 linear feet of 32-foot, 44-foot, and 56-foot right-of-way roadways will be provided. These roadways will be constructed to City and County standards. Access into the proposed project site will be provided by two intersections along Kamehameha Highway, which will be improved by the installation of acceleration, deceleration, and storage lanes. Traffic signal duct lines will also be provided at the intersection adjacent to the Heeia Small Boat Harbor.
There are three (3) existing 7.8-feet by 4.6-feet box culverts and one (1) existing 48-inch reinforced concrete pipe, which drain the project site into Kaneohe Bay. No improvements to these systems are anticipated; however, this will be verified by a Department of Public Works (DPW) review of a Drainage Report for the proposed project.

The project site lies in Zone D, an area of undetermined, but possible, flood hazard, as shown on the Flood Insurance Rate Maps (FIRM). DPW will verify the flood hazard requirements for the proposed project.

An on-site water system, consisting of 8-inch and 12-inch water lines and fire hydrants will be installed in accordance with Board of Water Supply (BWS) standards. It is projected that the project will have an average daily demand of 195,000 gallons and a 582,000 gallon peak daily demand. The BWS has indicated that a 0.3 million gallon reservoir will be required for this project. Future capacity increases to the water supply system are not anticipated; however, this must be verified by the BWS.

The proposed project will be connected to the municipal sewer system. One permanent pump station on-site will be necessary to achieve this connection. The sewage from the project site will be treated at the Kaneohe Sewage Treatment Plant, and disposed via the Mokapu Outfall. The design average and peak sewage flows, for the proposed project are 0.14 million gallons per day (mgd) and 0.83 mgd, respectively.

The proposed project's site improvements will cost between $9 and $11 million, and require 6 to 9 years to implement over 5 phases.

B. PROCEDURES

1. A Supplemental EIS Preparation Notice, prepared by the applicant's engineering consultant appeared in the "Environmental Quality Commission (EQC) Bulletin" on July 23, 1986. This was distributed to all interested Federal, State, and City and County agencies, as well as community interest groups.

2. Comments from consulted parties were received until September 1, 1986, allowing all parties greater than the required 30-day minimum consultation period. Twenty-five (25) parties submitted written comments during this period, which were responded to in writing by the applicant.

3. The Draft SEIS was received and distributed by the OEQC on September 5, 1986. The deadline for public review was then set for October 8, 1986.
4. Twenty-six (26) parties made replies to the Draft SEIS. The applicant made point-by-point responses to all substantive comments, within the 14-day response period.

C. CONTROVERSIAL ISSUES

A number of issues regarding the proposed project were considered to be controversial because differing "expert" opinions pertaining to a specific issue were presented by the applicant and a commenting party.

1. Social Impacts of the Proposed Project

Several organizations and certain members of the surrounding community are concerned about the social impacts of the proposed project on the community. The applicant recognizes that social impacts cannot be totally resolved and has recommended mitigation measures to lessen the impact of the proposed project.

2. Traffic Impact of the Proposed Project

The State and City Transportation agencies had no objections to the proposed project except for a recommendation that traffic signal duct lines be installed at the intersection adjacent to the Heeia Small Boat Harbor. The developer agreed to this recommendation.

Other organizations and certain members of the surrounding community, however, were concerned about the increase of traffic from the project and its impact on downstream traffic on Likelike and Pali Highway.

3. Increased Usage of Local Recreational Facilities

Certain members of the surrounding community are concerned about the increased usage of the Heeia Kea Boat Harbor, by the residents of the proposed subdivision, as well as their impact on other local recreational resources.

D. UNRESOLVED ISSUES

In general we concur with the listing of unresolved issues found on pages 99-100 of the Revised Supplemental EIS: potable water commitment, offsite sewer system improvements, impacts to Kaneohe Bay water quality, and social impacts. Prior to acceptance of an application for rezoning, the following additional information shall be required:

1. A water master plan approved by the Board of Water Supply.

2. Specific plans for offsite sewer system improvements approved by the Department of Public Works.
E. RESPONSE

The applicant made adequate point-by-point responses to all comments which were included in the Revised EIS. The topics of disagreement have been reviewed in the previous section of this report.

F. DETERMINATION

The Revised EIS is determined to be acceptable under the procedures and requirements established in Chapter 343, HRS, and the State "EIS Rules." This determination in no way implies a favorable recommendation on the applicant's request for any approvals or permits required by the Departments of General Planning and Land Utilization for this project.

Approved

DONALD A. CLEGG
Chief Planning Officer
Department of General Planning

Approved

JOHN P. WHALEN
Director
Department of Land Utilization
REVISED
SUPPLEMENTAL
ENVIRONMENTAL IMPACT STATEMENT
FOR
HEEIA KEA VALLEY
HEEIA, Koolaupoko, Oahu
REVISED
SUPPLEMENTAL
ENVIRONMENTAL IMPACT STATEMENT
FOR
HEEIA KEA VALLEY
HEEIA, KOOLAUPOKO, OAHU

Prepared By:
GRAY, HONG & ASSOCIATES, INC.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

October 22, 1986
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I. SUMMARY

Malama-Gentry Joint Venture proposes to develop 310 single-family residences and 50 low-density apartment units, 4 acres of industrial and 1 acre of commercial land on 68.5 ± acres of land at Heeia Kea, Oahu, Hawaii.

An Environmental Impact Statement (EIS) was accepted by the City and County of Honolulu Department of Land Utilization (DLU) on April 5, 1983 to have a 389 single-family lot residential subdivision constructed on 102 ± acres of land at Heeia Kea, Oahu, Hawaii. The EIS was prepared in conjunction with a Special Management Area permit and was expanded to meet Chapter 343 requirements in conjunction with other potential approval requirements. A Supplemental Environmental Impact Statement (SUP EIS) has been prepared in conjunction with a current application to the City and County of Honolulu Department of General Planning for an amendment to the Koolaupoko Development Plan Land Use Map. This SUP EIS has been prepared to discuss the differences/similarities of the current proposed project with respect to the residential development presented in 1983. Emphasis has been placed on discussion of traffic, sewage collection and disposal, and social characteristics, since the size and impacts of the two projects, in all other respects, are essentially identical.
II. DESCRIPTION OF THE PROPOSED ACTION

A. Project Location

The Heeia Kea Valley development will be located within Windward Oahu at Heeia, Koolaupoko, Oahu (see Location Map - Figure 1). This is the same site which was proposed for the Heeia Kea Subdivision. Both projects are on land which is a portion of 219.06 acres, all of which are owned by Kamehameha Schools/Bishop Estate and controlled by Hawaiian Electric Company, Inc. under a lease and agreement-of-sale. The total 219.06 acres are described by TMK: 4-6-06: 1 through 3, 7 through 16, 22 through 51 and TMK: 4-6-16: 32.

B. Statement of Objectives

Hawaiian Electric Company, Inc. originally entered into a long term lease and agreement-of-sale to acquire the project area for the purpose of constructing a steam generating plant to supply electricity to Oahu. Since the time of Hawaiian Electric Company's original agreement with Bishop Estate, a Class AA water quality classification has been assigned to Kaneohe Bay. Based on the Class AA classification of Kaneohe Bay and other factors, the construction of a steam generating plant is no longer feasible. Hawaiian Electric Company, however, is still committed to purchase the land.

Since the originally intended use of the project site is no longer feasible, the Hawaiian Electric
Company has explored other uses of the property. Based on market investigations, it has been determined that creation of single-family residential housing which includes low and moderate cost units will be responsive to market demands and will create the greatest economic utility of the site. Studies indicate that the site is well suited for residential housing.

Hawaiian Electric Company's objectives for creating the proposed subdivision are to provide marketable residential housing, including some low and moderate cost units, to serve the needs of Windward Oahu and to receive a reasonable return on invested capital.

These objectives as stated in the 1983 EIS for Heeia Kea Subdivision have not changed. However, a small portion (5.0 acres) of commercial/industrial development has been added to the project. Currently, Hawaiian Electric Company, Inc. and Gentry Companies have formed a joint venture called "Malama-Gentry" to pursue development of the property.

C. General Description of the Action's, Technical, Economic, Social and Environmental Characteristics

1. Technical Characteristics

The 1983 EIS for Heeia Kea Subdivision described technical characteristics for a residential subdivision on 102 acres which would provide 418 + units (see Figure 2 - 1983 Proposal Heeia Kea Subdivision). The current development
proposal (see Figures 3 and 4) includes a mix of residential, low-density apartments, commercial and industrial land uses. The commercial and industrial areas are intended to support the Heelia Small Boat Harbor and its recreational resources. Possible tenants could include activities such as a small convenience store, bait and tackle shop, trailer storage, boat yard and warehouse space. The technical characteristics of both projects are essentially identical. Table 1 summarizes the technical characteristics of the 1983 proposal as well as the current proposal. The following sections describe the various technical characteristics in greater detail.

Table 1
COMPARISON OF CURRENT ACTION AND 1983 ACTION

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<th>1983</th>
<th>1986</th>
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<tr>
<td></td>
<td>Acres</td>
<td>Units</td>
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<tr>
<td>New Residential</td>
<td>82.2</td>
<td>389</td>
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<tr>
<td>Existing Residential</td>
<td>14.3</td>
<td>29</td>
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<tr>
<td>Low Density Apts</td>
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<td>--</td>
</tr>
<tr>
<td>Commercial</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Industrial</td>
<td>2.0</td>
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<tr>
<td>Park Site</td>
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<tr>
<td><strong>Subtotal</strong></td>
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<td>418</td>
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<tr>
<td>Agriculture</td>
<td>--</td>
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<tr>
<td>Preservation</td>
<td>116.1</td>
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<td><strong>Total</strong></td>
<td>218.9</td>
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2. Earthwork
   Embankment       250,000 C.Y.  220,000 C.Y.
   Excavation       150,000 C.Y.  140,000 C.Y.
3. **Roadway System**

   **On-site Improvements**
   - 12,500 L.F. at Kamehameha Highway with acceleration lanes, deceleration lanes and left-turn storage

   **Off-site Improvements**
   - 2-intersections at Kamehameha Highway with acceleration lanes, deceleration lanes and left-turn storage

4. **Drainage System**

   - mauka interceptor ditch
   - on-site undergnd pipe system
   - no off-site improvements

5. **Water System**

   - Average Daily Flow: 195,000 gpd
   - Peak Flow: 585,000 gpd
   - Storage Requirement: 0.3 million gals
   - Transmission main sizes (typical): 8-inch (typical)
   - Fire Flows: 1,000 gpm-res.

6. **Sewer System**

   - Average Daily Flow: 0.17 mgd
   - Peak Flow: 0.97 mgd
   - Summary of Impacts: -2 pump stations, -off-site force main to City & County system

7. **Park and Landscaping**

   - 3.5 acre City & County dedicated park
   - 1.7 acre landscape buffer with park adjacent to Kamehameha Highway

   **a. Grading.** The project site will be graded to assure roadways maintain proper horizontal and vertical alignment. Grading within pro-
posed lots will be required to insure proper lot drainage and to provide reasonably level lots for house construction. The average slope of the project area is approximately 10 percent. The total area to be graded is approximately 50 acres and the total amounts of excavation and embankment are 150,000 and 250,000 cubic yards, respectively.

A final grading plan and an accompanying erosion control plan will be submitted to the City and County of Honolulu Department of Public Works for approval. The erosion control plan will include temporary measures, such as incremental grading and use of filter berms and sediment traps, to minimize soil loss during construction. The major method of permanent erosion control is the re-establishment of vegetation (grassing) after grading.

The above description which was included in the 1983 EIS is also applicable to the proposed project. Grading quantities under the current action will be reduced by approximately 10 to 15 percent as a result of the decrease in developed area.

b. Roadway Improvements. Access to all subdivision lots will be provided by 12,500 linear feet of 56-foot, 44-foot and 32-foot
right-of-way roadways constructed to City and County standards. Improvements will be made to Kamehameha Highway where the two City and County right-of-ways intersect with Kamehameha Highway. The improvements will consist of installation of acceleration and deceleration lanes for the south-bound lane of Kamehameha Highway and the installation of left-hand turn storage and through lanes for north-bound traffic.

The above description of roadway improvements which was included in the 1983 EIS is essentially identical to the currently proposed action. A minor change to the currently proposed roadway system is the addition of a left-turn storage lane into the Heeia Small Boat Harbor. Further, the intersection across from Heeia Small Boat Harbor will require design coordination with the State of Hawaii Department of Transportation due to plans for Heeia Small Boat Harbor expansion. Figures 5 and 6 are conceptual presentations of the currently proposed intersections at Kamehameha Highway.

c. Drainage Improvements. The project site is within a drainage basin bounded by Kaneohe Bay and the ridge line mauka of the project.
FIGURE 5
CONCEPTUAL INTERSECTION PLAN
ACROSS FROM HEEIA PIER

To HEEIA KEA VALLEY DEVELOPMENT
40' wide midway surface

Traffic islands

Left turn deceleration and storage lane (1211 deceleration taper)

Through traffic

Left turn deceleration lane (1211 deceleration taper)

To Kaakulau

To HEEIA SMALL BOAT HARBOR

150' deceleration lane

Through traffic

Lane transition median (3 ft. taper)
There are four existing dry gullies (subbasins) within the drainage basin which discharge all storm runoff into Kaneohe Bay.

The previous EIS states that the three existing box culverts and the existing 48-inch RCP drain line passing under Kamehameha Highway and discharging into Kaneohe Bay appear to have sufficient capacity to handle storm runoff anticipated from the development. Based on the fact that no additional drain outlets into Kaneohe Bay will be necessary, drainage improvements will be made within the proposed subdivision and will be limited to catch basins, field inlets, underground pipe systems, and interceptor ditches. Drainage improvements below the Mean Higher Water Line (MHWL) are not anticipated.

The project site is within Zone D of the Flood Insurance Rate Map and is not subject to Ordinance 80-62 (Flood Hazard Districts) of the City and County of Honolulu. Zone D represents areas of undetermined but possible flood hazard.

The above description of drainage improvements which was included in the 1983 EIS is also applicable and essentially identical to that required under the current
development proposal. Figure 7 shows the preliminary runoff map contained in the 1983 EIS which is applicable to the current proposal.

d. Water System Improvements. The previous EIS stated that on-site water system improvements would consist of a 6-inch water lines and fire hydrants installed within the subdivision roadways, in accordance with the Board of Water Supply standards. The EIS also stated that the Board of Water Supply's 272' Funaluu System was adequate to serve the project's average daily demand of 195,000 gallons, a peak daily demand of 585,000 gallons, and residential fire flow requirement of 1,000 gallons per minute. A 0.3 million gallon reservoir was required for this project as indicated by the Board of Water Supply. The Board further indicated no water commitment will be granted until construction plans were prepared and approved.

On-site improvements for the proposed project as revised by this SUP EIS will consist of 12-inch and 8-inch water lines and fire hydrants installed within roadways. The project will have an average daily demand of 194,000 gallons and a 582,000 peak daily demand. A larger water line will be provided
in commercial and industrial areas to allow for fire flow requirements of 2,000 and 4,000 gallons per minute, respectively. A 1,500 gallon per minute fire flow will apply to the low-density apartment area.

As identified in the previous EIS, a water master plan will be prepared and submitted to the Board of Water Supply for approval.

The two proposals are essentially the same with the exception of the additional fire flow requirements for the low-density apartments, industrial and commercial areas.

e. Sanitary Sewer System Improvements. The previous EIS stated that the only viable method of sewer collection and treatment was through connection to the City and County sewer system. Two alternative schemes were developed. The first alternative involved connection to the existing sewage pumping station and force main to Kaneohe Sewage Treatment Plant. The second alternative tied into an 8-inch gravity line proposed for Kahaluu-East. The City and County indicated preference for the first alternative with an additional requirement for two sewage pumping stations.
Sewage from the subdivision was master-planned to be treated at the Kaneohe Sewage Treatment Plant prior to disposal via the Mokapu Outfall. The possibility of treating all sewage from the Kaneohe-Kailua area at one facility located in Kailua was also being considered at that time. The design average and peak flows for the total Heeia Kea Subdivision were 0.17 million gallons per day and 0.97 million gallons per day, respectively.

Under the current action, the project will generate an average daily sewage flow of 0.14 million gallons per day and a peak flow of 0.83 million gallons per day. Therefore, the sewage flows identified in the previous and current actions are essentially identical.

It is proposed to pump sewage to the existing City and County Kaneohe Treatment Plant via the Heeia-North Subarea routing. This routing follows Kamehameha Highway and was the preferred alternative of the 1983 EIS. One permanent pump station built to County standards will be located on-site and will transfer all sewage to the existing sewage pump station site adjacent to the "long bridge." The "long bridge" pump
station site will be the project's point of connection to the City system (see Figure 8). The City has already committed to upgrade the existing pump station at the "long bridge." Operation and maintenance of the permanent pump station on-site will be by the City & County of Honolulu.

f. Electric and Telephone System Improvements.
The Heeia Kea Subdivision will be provided with underground electric and telephone service. Connection to Hawaiian Electric Company and Hawaiian Telephone Company existing systems will be made at Kamehameha Highway. The previous EIS stated that the existing systems appeared adequate and that both utilities have long-range planning to accommodate this project.

The above description of electric and telephone system improvements which was included in the 1983 EIS is also applicable to the currently proposed project.

g. Landscaping. Landscaping described in the 1983 EIS included trees along the subdivision roadways and a 3.5 acre park planted with a combination of shade trees, grassed lawns and hedges.

The currently proposed project will include the 3.5 acre park, which will be
FIGURE 2

NOTE: SINCE ACTUAL DEVELOPMENT PLANS ARE UNKNOWN, LOCATIONS OF GRAVITY LINES ARE SCHEMATIC.

KAHALUU WASTEWATER TREATMENT AND DISPOSAL SYSTEM
PRELIMINARY ENGINEERING REPORT

HEEIA - NORTH SUBAREA
ALTERNATE #1

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PUBLIC WORKS

SCALE IN FEET

FORCE MAIN (PROPOSED)
--- GRAVITY LINE (PROPOSED)
----- TRIBUTARY AREA
• SEWAGE PUMPING STATION (PROPOSED)
dedicated to the City and County of Honolulu, in addition to a 1.7 acre landscaped buffer along Kamehameha Highway. The 3.5 acre park will fulfill the project's Park Dedication Ordinance requirements.

2. Economic Characteristics

The 1983 EIS stated that the Heeia Kea Subdivision would offer an additional supply of single-family lots to meet market demands and serve residents of Oahu. A marketing study was prepared by Cowell & Co., Inc. in January 1983 to support that claim. The study concluded that there will be a good to excellent demand for single-family residential units developed at Heeia Kea.

Cowell & Co., Inc. updated the previous marketing study in January 1985 (Appendix A). The study concluded that a strong demand for new single-family housing continues to exist in the Koolaupoko district. The location of the Heeia Kea property is also attractive for development since it provides excellent views to Kaneohe Bay and is within convenient driving distance to shopping facilities, schools, public facilities and establishments within the Kaneohe area. Proposed residential units will find excellent market acceptance and will satisfy a small portion of the demand for additional housing units in Kaneohe.
The study went on further to discuss commercial/industrial development. It was reported that there are only six acres of business-zoned land that are vacant and available for development, representing 5 percent of the total business-zoned land in Kaneohe to Kahaluu. In their opinion, the amount of business-zoned land available is inadequate to serve the area over the next 10 to 20 years.

3. Social Characteristics

No changes to the social characteristics of the area have occurred since completion of the 1983 EIS. The previous EIS stated that the residential nature of the development would create a suburban atmosphere typical to that of existing residential subdivisions located in the general area. No significant change in social characteristics of the area was anticipated.

In conjunction with this supplement, a social impact analysis has been prepared. This assessment is contained in Appendix C and identifies diverse views of the affected residents with respect to development of the site.

4. Environmental Characteristics

No changes to the environmental characteristics of the area have occurred since completion of the 1983 EIS. As presented in 1983, soils are typical of Windward Oahu. Further, there are no
sandy beaches, notable viewplanes or beach access which will be affected. Field surveys and literature review found no evidence of rare, endangered or unique flora and fauna.

Drainage from the area enters Kaneohe Bay and both the previous development proposal as well as the current proposal will maintain this pattern. Sewage disposal in the area is by use of cesspool which will cease upon development. Finally, existing substandard structures on the mauka side of Kamehameha Highway will be removed as reported in 1983.

D. Use of Public Funds or Land for the Action

The 1983 EIS stated that public funds or lands will not be used for the project. Left-turn storage lanes and acceleration and deceleration lanes on Kamehameha Highway will be constructed by the developer at the developer's cost. Roads will be created by the developer for public use and for Board of Water Supply access to the existing reservoir mauka of the site.

The above discussion of public funds and lands which was included in the 1983 EIS is also applicable to the proposed project.

E. Phasing and Timing of Action

Actual phasing and timing for construction of the project is dependent on the state of the economy, market conditions, approval of the proposed Koolaupoko
Development Plan amendment, and approval of a change of zone application. The previous EIS anticipated construction to be completed in five phases over a period of 6 to 9 years with a start not earlier than 1984. The proposed project is anticipated to have the same construction phasing with a projected start not earlier than 1988.

F. Summary Technical Data

A summary of technical data was listed in the 1983 EIS. There are no changes to the technical data and the listing has not been duplicated in this supplement.

G. Historic Perspective

As reported in the 1983 EIS, the site was used for pineapple cultivation until about 1930. During World War II, the site was occupied by the military for what appears to have been relatively intensive training for a Regimental Combat Team. Since World War II, the site has fallen into disuse and has become overgrown with weeds. A few substandard houses exist on the Heeia Kea residential lots along Kamehameha Highway. The lack of a permanent freshwater supply (ground or surface) has inhibited use of the land for agriculture.

Housing demand has stimulated the expansion of new housing into urban fringe areas such as Heeia, Ahuimanu, and Kahaluu. Existing land uses in the surrounding areas of the Windward coast include a mixture of residential, industrial, commercial and small-scale agricultural uses.
III. THE RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS, POLICIES, AND CONTROLS FOR THE AFFECTED AREA

The previous EIS discussed the relationship of the proposed project to the State Land Use Designation, Hawaii State Plan, City and County 1982 Oahu General Plan, City and County of Honolulu Zoning, Special Management Area, and Hawaii Coastal Zone Management (CZM) Program. Specific policies discussed were population, economy, physical environments, facilities systems, housing, leisure, physical development and urban design, culture, and recreation. The previous action generally complied with the intent of the policies and no significant adverse impacts were anticipated.

Under the current development proposal, the following considerations are included in the Development Plan Land Use amendment application:

A. City County Oahu General Plan Objectives

1. Population: The General Plan objectives for population are "to control growth...in order to avoid social, economic and environmental disruptions,...to plan for future population growth,...to establish a pattern of population distribution that will allow the people of Oahu to live and work in harmony."

The Department of General Planning (DGP), in its August 1985 report on "Residential Development Implications of the Development Plans," projected that Koolauloko's population in 2005 would be 124,200, or 10,900 more than the 113,300 people estimated to be living in the area in 1984. DGP also projected that 4,900 additional housing units would be required to accommodate this
additional population. In contrast, vacant developable and underutilized lands were estimated to have a potential to accommodate only 4,400 additional housing units. The proposed Heeia Kea project could contribute 220 units toward meeting the need for 500 additional housing units.

Under the population distribution guidelines specified in the General Plan, Koolaupoko could accommodate up to 13.6% of Oahu's projected 2005 population, or a total of 129,800 people. This is 4,600 more people than projected by DGP for 2005. In other words, the actual population of Koolaupoko in 2005 could exceed the DGP projection by 5,600 and still be consistent with the GP population distribution guidelines. Using DGP's projected household size of 3.4 persons/unit for Koolaupoko, approximately 1,650 additional units would be required to house these people. To accommodate the full range of population growth permitted in Koolaupoko under the General Plan, sufficient additional land would have to be designated for residential development to permit the construction of a total of 2,150 new housing units. The 220 additional units which could be provided at Heeia Kea equal only 10% of this total increase.
The original 1977 and all subsequent revisions of the General Plan designate the Heeia Kea area as "urban-fringe" on the "Urbanized Areas" map of Oahu. Such areas generally have a suburban character, with a predominance of lower density residential development and supporting commercial and industrial districts. Ridgelines and other unbuildable lands are retained in open space to protect against unsuitable development and retain major natural areas within and between communities. The proposal for the project site mirrors this development character.

2. **Economic Activity:** The General Plan objectives for economic activity are "to promote employment opportunities,...to prevent the occurrence of large scale unemployment,...to bring about orderly economic growth on Oahu."

The currently proposed project includes the development of commercial/industrial facilities on a portion of the property adjacent to Kamehameha Highway near the existing Heeia Kea pier. The proposed commercial/industrial area will encourage the development of small businesses which will contribute to the economy of Oahu and provide employment opportunities.

Construction of the proposed project will provide short-term opportunities for construction employment. Also during construction, businesses
that supply construction material will be
positively affected by the project.

3. Natural Environment: The General Plan objectives
for the natural environment are "to protect and
preserve the natural environment of Oahu,...to
preserve and enhance the natural monuments and
scenic views of Oahu for the benefit of both
residents and visitors."

The proposed master plan for the project is
designed to minimize grading and alteration of
existing topography and drainage patterns, and to
retain nature trees on site for their integration
into the future landscaping. The proposed
development will not involve construction on the
nearby shoreline or the bordering ridgelines.
The project site is not a water recharge area nor
does it contain any distinctive land forms or
endangered plant species.

In addition to a 3.5 acre park, a 1.7 acre,
40-foot wide landscaped buffer strip will be pro-
vided along Kamehameha Highway between the project
roadway intersections with the highway. This will
be maintained as a private park. A trail easement
will be provided that will connect the landscaped
strip and the main interior roadway with an exis-
ting trail to mauka areas for hiking, gathering of
plant materials, or other recreational and educa-
tional activities. The location of the trail has
not yet been identified. Makai views from the
most travelled public roadway in the area,
Kamehameha Highway, will not be disturbed as the project site is not in the line of vision from the highway to the ocean.

4. Housing: The General Plan objectives for housing are "...to provide decent housing for all the people of Oahu at prices they can afford,...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."

A choice of living environments will be provided in the form of three different housing types: low-density apartments, single-family homes built under the zero lot line concept, and single-family homes on conventional lots. Prices will correspondingly vary, with at least 10% of the units for low to moderate income households. Lots will also be made available at nominal cost to families residing on the project site.

The project is located only two miles north of Kaneohe town, which is an employment, recreation and commercial center. Existing utilities are adequate with the exception of wastewater disposal. The proposed wastewater disposal system will be built to City and County standards and will connect to the existing City and County sewer system. These facilities will be dedicated to the City and County and its maintenance will be paid for by the collection of users' fees.
5. **Transportation and Utilities:** The General Plan objectives for transportation and utilities are "...to meet the needs of the people of Oahu for an adequate supply of water and for environmentally sound systems of waste disposal, ...to maintain a high level of service for all utilities, ...to maintain transportation and utility systems which will help Oahu continue to be a desirable place to live and visit."

Utilities and infrastructure necessary to support the proposed project as stipulated in the General Plan will be provided as a part of the project development. The proposed development will connect to the City and County sewer system. In addition, the project will involve improvements on Kamehameha Highway to facilitate entry/exit onto the highway from the proposed project.

6. **Energy:** The General Plan objectives for energy are "...to conserve energy through the more efficient management of its use, ...to fully utilize proven alternative sources of energy."

The residential and commercial/industrial structures on site will be designed to accommodate solar water heaters and/or energy efficient appliances.

7. **Physical Development and Urban Design:** The General Plan objectives for physical development and urban design are "...to ensure that all new developments are timely, well designed, and appropriate for the areas in which they will be located, ...to create and maintain attractive, meaningful and stimulating environments throughout Oahu."

The applicant will provide all necessary infrastructure improvements for the project,
coordinated with the phasing of construction. The project will be compatible with the suburban atmosphere and lifestyle of the area. This will be accomplished by maintaining low densities and by preserving much of the valley as open space. The proposed commercial/industrial area is well located to serve the nearby Heeia Kea Pier, residents on site and in the vicinity, and those traveling on Kamehameha Highway.

Design guidelines will be established to control the scale and character of all future buildings, and the project will be developed in phases to ensure a cohesive and harmonious development. The proposed project will be designed to be compatible with the DP Common Provisions and the Koolaupoko DP Special Provisions.

8. Culture and Recreation: The General Plan objectives for culture and recreation are "...to protect Oahu's cultural, historic, architectural, and archaeological resources...to provide a wide range of recreational facilities and services that are readily available to all residents of Oahu."

An archaeological reconnaissance survey was conducted at the Heeia Kea project site as part of the 1983 EIS. During the survey, six sites were found on the property. Excavation of these features could provide archaeological information on the area. It has been recommended that salvage excavations be conducted on all sites prior to
construction. Any other significant artifacts or sites encountered during development will be reported to the State Historic Preservation Office.

B. Development Plan Common and Special Provisions

1. General Urban Design Principles and Controls - Public Views: The DP urban design principles and controls for public views are: "public views shall be protected,...maintain and enhance available views of significant landmarks."

The project is mauka of Kamehameha Highway and will not affect views of the major visual feature in the vicinity, Kaneohe Bay.

The proposed project includes a 3.5 acre park fronting Kamehameha Highway. This provision of open space will provide public views from Kamehameha Highway toward mauka areas. Views along the project's Kamehameha Highway frontage will also be enhanced through the provision of a 1.7 acre, 40-foot wide landscaped buffer. The design and siting of all structures on site shall take into consideration appropriate building heights, setbacks, design and siting controls established in the Comprehensive Zoning Code, in order to enhance views of the ocean from the project site.

None of the views of major landmarks from public places identified in the Koolaupoko DP Special Provisions will be affected by the proposed project.
2. **General Urban Design Principles and Controls - Open Space:** The DP urban design principles and controls for open space are: "the City's mountains, hills, shoreline and streams shall be considered as major scenic, open space and recreational resources. Adequate public access to these resources shall be incorporated as part of developments adjacent to them."

The open space resources of the hills mauka of the project site will be available to the public via trails from roadways and the public park in the project site. The project area does not contain any mountains, shoreline or streams. Public access to Kaneohe Bay will not be affected by the project since the project is located mauka of Kamehameha Highway.

The proposed project will not adversely affect the visibility, preservation, enhancement and accessibility of open space areas identified in the Koolaupoko DP Special Provisions.

3. **General Urban Design Principles and Controls - Vehicular and Pedestrian Routes:** The DP urban design principles and controls for vehicular and pedestrian routes are: "Landscaping shall be provided along major vehicular arterials and collector streets...pedestrian corridors shall be provided in heavy traffic areas."

A 40-foot wide landscaped strip will be provided along Kamehameha Highway to provide a visual buffer. Landscaping will also be provided along collector streets within the project site. Streetscape elements along project roadways will include plantings, street lamps, sidewalk paving treatments, coordinated street sign design and
building facades, and building setbacks. All parking areas on site will be visually buffered with landscaping.

Pedestrian corridors will be provided in the proposed commercial area. These corridors will include plantings, street furniture, attractive building frontages and other pedestrian-oriented design elements. These corridors will also be designed to minimize contact with vehicular movements.

4. General Urban Design Principles and Controls -
   General Height Controls: The DP urban design principle and control for general height controls is as follows: "maximum allowable heights for structures in each land use classification and for designated special areas are specified in the special provisions of each development plan."

   The applicant will comply with the maximum allowable heights for structures which are specified in the Koolauapoko DP Special Provisions.

5. General Urban Design Principles and Controls -
   Energy Efficiency in Developments: The DP urban design principle and control for energy efficiency in developments is as follows: "efficient energy use shall be encouraged in all developments."

   All structures on site will be designed to accommodate solar water heaters and/or energy efficient appliances.

6. General Urban Design Principles and Controls -
   Existing Built-up, Single-Family Residential Areas: The DP urban design principle and control for existing built-up, single-family residential areas is as follows: "new development in existing communities shall generally be limited to that which is compatible with or enhances the desired physical and social character and lifestyle."
The project site is located in Heeia Kea, which Ordinance 83-8 describes as an area "where residential development of a low-density suburban character already exists". The proposed project will be designed to be compatible with the physical and social character and lifestyles of the existing neighborhood. The architectural design of all non-residential structures on site will be compatible in character with the surrounding residential uses.

7. General Principles and Controls for Parks, Recreation and Preservation Areas: The general principles and controls for parks, recreation and preservation areas are: "suburban and new development areas shall include land for open space and recreation purposes at a minimum of 2 acres per thousand persons."

Based on the above, the project would normally be required to include 2 acres of open space. The 3.5 acre park which will be dedicated to the City and County for active recreational purposes, and the 1.7 acre landscaped buffer along Kamehameha Highway which will be maintained as a private park, together provide more than 2-1/2 times this standard.

8. Identification of areas, sites and structures of historical significance: The objective of the identification of areas, sites and structures of historical significance is as follows: "the continued use, enhancement or preservation of such areas, sites and structures shall be incorporated or promoted in any applicable action by the City."
Salvage excavations on the six sites encountered during the archaeological survey will be conducted prior to construction. Any other significant artifacts or sites encountered during development will be reported to the State Historic Preservation Office.

9. **Social Impact Management System**: The objective of the social impact management system is: "to enable residents of an area who will be affected by a proposed development project to systematically examine the expected social impact of that development and...to identify alternative ways of managing or mitigating any expected negative social impacts."

According to the Department of General Planning, the Social Impact Management system presently consists of consultations with the appropriate Neighborhood Boards.

Previous efforts to develop the subject parcel were opposed by certain community groups. Between September 1984 and June 1985, the applicant met regularly with members of Heeia-Kea Community Association, Hul Malama Aina O' Koolau, and the Waiahole-Waikane Community Association and representatives of Neighborhood Boards Nos. 30 and 29 under the auspices of the Conflict Management Program (CMP) of the Neighborhood Justice Center of Honolulu in an attempt to plan a development proposal which was acceptable to all parties (hereinafter referred to as the Planning Group). The Planning Group concluded its efforts with a
statement of agreements which was submitted to DGF in June 1985. While much progress was made, some concerns with respect to the physical and social impacts of the proposed uses remain unresolved. Appendix C of this supplement contains a complete social impact analysis which further discusses social impacts on the community caused by the subject project.

C. Koolaupoko Development Plan Land Use Map

The existing DP Land Use Map designations for the project site are shown in Figure 9, and the proposed designations are shown in Figure 3. Nearby buildable areas—i.e., lands in Kaneohe, on the opposite side of the ridge in Ahuimanu, and further north along Kamehameha Highway—are all designated for development which is predominantly residential in character. The proposed land use pattern for this project is compatible with these surrounding uses.

D. Koolaupoko Development Plan Public Facilities Map

See Figure 10 for existing Public Facilities Map designations for the project site. The impact of the proposed uses on public facilities and utilities is essentially identical to that provided in the 1983 EIS.
IV. DESCRIPTION OF THE ENVIRONMENTAL SETTING AND THE PROBABLE IMPACT OF THE PROPOSED ACTION

A. Physical and Chemical Characteristics
   
1. Physical Geography

   The following discussion of physical geography summarizes that which was included in the 1983 EIS and is also applicable to the proposed project.

   Windward Oahu generally consists of the steep cliffs of the Ko'olau Mountain range which transitions to the coastal plains adjacent to Kaneohe Bay. The project site is located adjacent to Kaneohe Bay on coastal plains consisting of alluvial deposits. The average slope of the subdivision is approximately 10 percent. The slope increases mauka of the subdivision site to as much as 40 percent and rises to a ridgeline which varies in height between 500 and 600 feet.

   The entire property comprises a self-contained watershed with four subbasins. Drainage is by overland flow that ultimately discharges into Kaneohe Bay through four drainage structures beneath Kamehameha Highway. There are no permanent streams on the property.

   Approximately 250,000 cubic yards of earthwork will be required with approximately 50 acres being graded. The earthwork will have no direct adverse impact on the physical
characteristic of the site. The proposed drainage system consisting of catch basins and field inlets transporting runoff through existing drainage structures and into Kaneohe Bay will not have any adverse impact on the existing drainage patterns. Indirect impact on water quality will be discussed in a later section.

2. Soils

The following discussion of soil characteristics summarizes that which was included in the 1983 EIS and is also applicable to the proposed project.

The soils of the Koolau coastal plains generally consist of the Kaena-Waialua and Lolekaa-Waikane soil associations. The soils on the project site belong to the Kaena-Waialua association. This association is described by Foote, et al (1972) as "Deep, mainly nearly level, and gently sloping, poorly drained to excessively drained soils that have a fine-textured to coarse-textured subsoil or underlying material; on coastal plains and talus slopes and in drainage ways".

From mauka to makai of the property the soils are Alaeloa silty clay (55%), Lahaina silty clay (35%), and Ewa silty clay (10%). The soils are suitable for a residential subdivision. The erosion hazard is moderate to low. A soils
engineering report will be prepared to specifically analyze the site conditions.

Proposed grading and installation of utilities and roadways will have no direct adverse affect on the soils of the area. Vegetation cover will be destroyed during the preliminary construction phase of the project and will be ultimately replaced by landscaping. Soil loss during the interim periods, when soil is exposed and can potentially be washed away by surface runoff, can create an adverse impact on water quality.

3. Surface Water Quality

The following discussion of surface water quality summarizes that which was included in the 1983 EIS and is also applicable to the proposed project.

Under existing conditions, the site affects the surface water quality of Kaneohe Bay when there is sufficient rainfall to produce stormwater runoff which discharges into the bay via existing drainage structures. During dry weather conditions when no runoff is produced, the site has little or no effect on Kaneohe Bay water quality.
The Heeia Kea Subdivision will not change the existing conditions, i.e., the only time the project site will affect Kaneohe Bay is during periods when runoff is produced. The urbanized portion of the project will increase the total runoff volume by 15 percent -- representing a 0.1 percent increase to the total Kaneohe Bay watershed runoff. The impact to Kaneohe Bay is considered negligible recognizing that during periods when runoff from the project area is produced, the bay will be under considerable stress from runoff of the total Kaneohe Bay watershed.

Runoff from residential areas as compared to unurbanized areas have equal or lower nitrogen and suspended solid loading and higher phosphorous loading. However, the combined impact of all urban pollutant discharges is expected to be proportional to the increase in runoff to Kaneohe Bay -- approximately 0.1 percent.

The project will also have beneficial effects to the water quality with the elimination of the use of cesspools in the area adjacent to Kaneohe Bay.

4. Groundwater Quality

As stated in the 1983 EIS, the project site is makai of the Board of Water Supply "no pass
zone" and groundwater below the site is not a source of potable water. There is no existing impact to groundwater quality and the proposed subdivision will not create any new impact.

5. Air Quality

The following discussion of air quality summarizes that which was included in the 1983 EIS and is also applicable to the currently proposed project.

The previous EIS identified the fact that there are no upwind activities generating pollutants for miles and it is reasonable to assume that present air pollution levels are low.

The previous EIS discussed results of a carbon monoxide study conducted for this project. Based on a worst case analysis and complete development of the project, the predicted carbon monoxide concentrations were well below the State of Hawaii Air Quality Standards (AQS). Therefore, no significant impact on air quality was predicted for the project and no direct mitigation measures were proposed with respect to auto emissions.

Temporary short-term air quality impacts were anticipated during construction earthwork activities by fugitive dust and engine exhaust, both of which are subject to City and County and State regulatory controls. The amount of short-term construction-related air quality impacts were
anticipated to be within regulatory limits.

6. **Noise**

The following discussion of noise impacts summarizes that which was included in the 1983 EIS and is also applicable to the proposed project. The discussion regarding aircraft noise has been updated to reflect current information but is essentially the same as that included in the 1983 EIS. Noise impacts relating specifically to the currently proposed project are discussed in the last paragraph of this section.

The previous EIS reported existing noise levels in and near the project site as being low for a majority of the time. Periodically, however, the project site is exposed to aircraft noise from the Kaneohe Marine Corps Air Station. According to information included in the 1983 Air Installation Compatibility Noise Zone (AICUZ) for Marine Corps Air Station Kaneohe Bay, approximately 1/3 to 1/2 of the project site is located within the Ldn 60-65 AICUZ contour. Chapter E, Current Noise Zones, of the AICUZ indicates that although an Ldn 65 dB is normally compatible with residential land use on the mainland, additional consideration of compatibility should be given to planned residential land use in the Ldn 60-65 decibel noise zone. This is consistent with the findings of the land use compatibility study for
the Honolulu International Airport which suggests that sound insulation may be needed to be incorporated in new housing construction in areas exposed to Ldn 60-65 dBA. It should be noted that these levels represent average noise levels and do not represent the short duration noise levels generated by passing aircraft that can be as high as 80 dBA.

The State of Hawaii noise regulation for residential areas in Chapter 43, Community Noise Control for Oahu indicates a 55 dBA level for daytime hours and 45 dBA for nighttime. These regulations, however, apply to stationary sources and do not apply to noise generated by aircraft.

Noise will be generated during construction and noise levels are regulated by State of Hawaii and OSHA standards. Certain activities such as earthmoving are not allowed during weekends nor non-working hours.

The project by itself should not substantially increase ambient noise levels. It was anticipated that the noise levels would be similar to other Windward urban areas.

The previous EIS addressed noise impacts in a project which only contained residential areas. The proposed project has been modified to include approximately five acres of commercial and
industrial area. A small portion of these areas will abut area zoned for residential use. Therefore, under the current proposal there is a possibility that noise from the commercial and industrial districts could have an impact on the adjoining residential districts. Noise could be generated from stationary equipment such as exhausts and air-conditioning, as well as traffic vehicles such as trucks associated with commercial activities.

7. Climate

The climate is typical of coastal Windward Oahu with temperatures varying between 73 and 80 degrees Fahrenheit and with rainfall averaging 44 inches per year.

8. Agriculture

The following discussion on agriculture summarizes that which was included in the 1983 EIS and is applicable to the currently proposed project.

In its existing condition, the site does not support agriculture. However, 46 acres within the valley have been designated by the Agricultural Lands of Importance to Hawaii (ALISH) as "other important agricultural land".

The previous EIS stated that of the 46 acres of land designated as ALISH, 25 acres were within the R-6 Residential District and 21 acres were
within the P-1 Preservation District. An agricultural feasibility study was prepared by Dr. Frank S. Scott, Jr., Ph.D, in conjunction with the previous EIS. The study listed six soil subseries existing on site with 40 to 45 acres of land near the makai portion of the project with soils suitable for agriculture. The study anticipated good orchid crop production and fair truck crop production based on ecological criteria. However, the subject land failed to meet criteria for market potential, profitability, comparative production advantage and production intensity. Production costs would be high due to steeper terrain and the requirement for City and County provided water. The study concluded that the project site is only marginally suitable for crop production.

Under the current City and County Zoning District Map, approximately 25 acres of ALISH land are now within AG-1 Restricted Agriculture District and 21 acres are within P-1 Preservation District. Under the proposed DP Land Use Map amendment, approximately 33.5 acres of land would be designated for agricultural use.

E. Biological Characteristics

1. Flora

The previous EIS included a Flora Report prepared by Mr. Charles H. Lamoreux which stated
that no unique, rare, or endangered plants were found on the subdivision site. Inventory of plants included hau, hala, tropical almond, coconut, haole koa, java plum, and Christmas berry. Cultivated species introduced by man exist along the highway.

2. Fauna

The previous EIS included a Fauna report prepared by Dr. Andrew J. Berger. The fauna on the project site was documented as consisting solely of introduced species, of which many are pests to man. No suitable habitat on the site for any endemic Hawaiian animals was identified.

As stated in the previous EIS, the proposed development will not have any adverse impact on native Hawaiian animals.

C. Cultural Factors

1. Land Use

The project site is currently used for a few house sites near Kamehameha Highway and for a waste depository. Agricultural use has been reported as only marginally viable. As stated in the previous EIS, the proposed development of the site will not jeopardize any significant uses of the land. The current proposal preserves 33.5 acres of land for agricultural use.
2. **Archaeological and Historical Resources**

The archaeological and historic resources information included in the previous EIS is summarized below and is applicable to the currently proposed project.

An Archaeological Report was prepared in 1982 by Archaeological Consultants of Hawaii in conjunction with the previous EIS. Six sites were located on or near the R-6 residential portion of the project area. Three of the sites were terraces which appeared to have been used for agricultural purposes, two of the sites were identified as religious structures, and one site was identified as a bottle dump. The EIS suggested that consideration could be given to restoration and/or preservation of two of the shrines. It was also recommended that an archaeologist be present to monitor landclearing and grubbing.

From a historical perspective, there is little or no written information available on Heeia Kea. An early Alexander and Baldwin map indicated that land was devoted to pineapple cultivation between early 1900 through the 1930's. Military records indicate that a camp was constructed for a Regimental Combat Team during World War II. After the war, small family-sized
dwellings appeared on the property along Kamehameha Highway.

3. Aesthetics and Viewplanes

The 1983 EIS reported there is presently no aesthetic value to the site. It is currently restated that the aesthetic value of the site is diminished. The site is choked with weed species and littered with car bodies and waste. A view of Kaneohe Bay is limited due to existing hau and hala trees along the shoreline. The subdivision will make a view of the bay possible to residents of the upper portions of the subdivision. Views of Kaneohe Bay presently available to the general public travelling on Kamehameha Highway will remain unchanged.

D. Traffic

The previous Environmental Impact Statement for the project site which was accepted in 1983 described development which would ultimately contain 418 residential units. The Environmental Impact Statement reported that the project would create two main intersections with Kamehameha Highway and each intersection would be equipped with acceleration lanes, deceleration lanes and left-turn storage lanes. One of these intersections was directly across from the existing Heiau Pier. It was reported that the project would create an additional 3,000 average daily vehicle trips and 300 peak hourly vehicle trips. Vehicle
distribution figures showing projected traffic were presented in the 1983 EIS and are still applicable today.

The previous Environmental Impact Statement further analyzed the intersection of Lilipuna Road/Kamehameha Highway which is approximately two miles south of the proposed project site and at the northerly edge of Kaneohe Town. This intersection is the closest signalized intersection to the project site. Analysis conducted consisted of a critical lane analysis which is a simple planning tool that allows general evaluation of the capacity/adequacy of an intersection. Conflicting movements are tabulated and the degree to which the conflicting movements approach 1500 provides an indication as to how the intersection is performing. The critical lane analysis performed in conjunction with the previous Environmental Impact Statement generated values of 1290 conflicting movements and 1430 conflicting movements for the A.M. and P.M. periods, respectively. Under existing conditions the A.M. and P.M. values were 1220 and 1350, respectively. It was concluded that conflicting movement values were less than the 1500 guideline value but that the conflicting movement counts were approaching the guideline capacity value. (Recent review of the 1982 existing traffic data has revealed erroneous data. As described later in this section, traffic volumes at Lilipuna Road/
Kamehameha Highway/ Haiku Road have remained relatively stable).

The 1983 Environmental Impact Statement also briefly commented on the project's effect on regional traffic, and particularly the Kahekili Highway and Likelike Highway intersection as well as trans-Koolau corridors. It was reported that the peak hour period would increase until improvements were implemented. The major project to improve trans-Koolau traffic congestion was implementation of the H-3 Freeway.

This Supplemental Environmental Impact Statement identifies differences between the previous proposal and that which is currently under consideration. The current development proposal identifies 360 residential units, 4 acres of industrial development, and 1 acre of commercial development. The following table (Table 2) identifies traffic projections resulting from the current development plans as compared to that described in 1983. As identified, peak hourly traffic and average daily traffic generated from the project site are essentially identical to that described in 1983.
<table>
<thead>
<tr>
<th>Land Use</th>
<th>1983 Proposal</th>
<th>1986 Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Daily Traffic Volume (ADT)</td>
<td>Peak Hour Traffic Volume (PHY)</td>
</tr>
<tr>
<td>Residential</td>
<td>3,000</td>
<td>300</td>
</tr>
<tr>
<td>Industrial¹</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Commercial¹</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Total</td>
<td>3,000</td>
<td>300</td>
</tr>
</tbody>
</table>


With respect to improvements, it is proposed to create two main intersections from the project connecting to Kamehameha Highway. The intersections will be provided with acceleration lanes, deceleration lanes, and left-turn storage. Figures 5 and 6 provide a conceptual plan of the proposed intersections. This conceptual plan is identical to that proposed in the 1983 Environmental Impact Statement, with the exception that the entrance to the Heeia Small Boat Harbor has been shown. The State of Hawaii Department of Transportation indicates that there are plans to expand the harbor complex and detailed coordination with this Department will be required during design. However, the proposed plan to provide acceleration, deceleration and storage lanes at the Heeia Small Boat Harbor...
coincide with recommendations identified by this Department during the consultation period of this Supplemental Environmental Impact Statement. In addition, traffic signal duct lines will be provided at the intersection adjacent to Heeia Small Boat Harbor.

With respect to analysis of the Lilipuna Roadway/Haiku Road/Kamehameha Highway, the following schedule summarizes peak hour approach volumes for surveys taken in years 1982 through 1985.

<table>
<thead>
<tr>
<th>Year</th>
<th>A.M. Peak</th>
<th>P.M. Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>1,869</td>
<td>2,091</td>
</tr>
<tr>
<td>1983</td>
<td>2,273</td>
<td>1,874</td>
</tr>
<tr>
<td>1984</td>
<td>2,079</td>
<td>1,873</td>
</tr>
<tr>
<td>1985</td>
<td>2,157</td>
<td>1,888</td>
</tr>
</tbody>
</table>

From the foregoing schedule, it is clear the level of peak hour traffic at this intersection has remained relatively stable and that the significantly higher volumes reported in the 1983 EIS (1982 data) were in error.

A critical lane analysis was performed using 1983 data since this is the highest peak hour occurring over the last four years. Figures 11 through 14 show the critical lane movement analysis for existing and proposed conditions. Under both A.M. and P.M. peak hour conditions the proposed development will generate
( ) = PROJECTED TRAFFIC, ALL OTHER VALUES EXISTING OR ASSUMED EXISTING BASED ON 12/83 TRAFFIC COUNT BY CITY AND COUNTY OF HONOLULU (ALL VALUES ROUNDED OFF)
FIGURE 13

CRITICAL LANE MOVEMENT CALCULATIONS

A.M. Critical Lane Volume - Lilipuna/Haiku

2 Phase Operation

\[ 146 + 133 = 279 \text{ Use is greater than} \]
\[ 136 + 89 = 225 \]

A.M. Critical Lane Volume - Kamehameha Highway

\[ 76 \text{ (95)} \rightarrow \leftarrow 200 \]
\[ 347 \text{ (425)} \rightarrow \leftarrow 200 \]
\[ 347 \text{ (425)} \rightarrow \leftarrow 425 \text{ + 172 = 696 Use is greater than} \]
\[ 200 \text{ + 95 = 295} \]

\[ \Rightarrow \text{Projected A.M. Critical Lane Volume} = 279 \text{ + 696} = 975 \text{ Vehicles} \]
\[ \text{Existing Critical Lane Volume} = 279 \text{ + 519} = 798 \text{ Vehicles} \]

\[ 975 \leq 1,500 \text{ Allowable \Rightarrow} \]

( ) = Projected Volume,
All others existing or assumed existing conditions
FIGURE 14

P.M. Critical Lane Volume - Lili'puna/Haiku

2 Phase Operation

\[ 187 + 127 = 314 \] Use
is greater than
\[ 115 + 54 = 199 \]

P.M. Critical Lane Volume - Kamehameha Highway

\[ 352 + 126 = 478 \] Use
is greater than
\[ 412 + 28 = 440 \]

\[ \text{Projected P.M. Critical Lane Volume} = 314 + 478 = 792 \text{ Vehicles} \]
\[ \text{Existing Critical Lane Volume} = 279 + 476 = 755 \text{ Vehicles} \]

\[ 796 < 1,500 \text{ Allowable} \] Below but close to recommended maximum.

( ) = Projected Volume,
All others existing or assumed existing conditions
critical lane movement values of 975 and 796, respectively, which is less than the guideline value (1,500). It should be recognized that after complete development of the proposed project, there will be increased congestion at the Lilipuna Road/Kamehameha Highway intersection. However, as identified later in this section, there are current proposals for regional traffic improvements which will offset the increased traffic congestion at this intersection.

While it is not possible to propose specific improvements in conjunction with this development proposal which will improve the regional traffic pattern, it is possible to report the current status of regional traffic improvements which are being considered by appropriate governmental agencies which have jurisdiction over regional traffic. At the present time there are two agencies which have provided comments and/or recommendations and/or proposed improvement plans which address regional traffic considerations. These agencies are the State of Hawaii Department of Transportation and the City and County Department of Transportation Services. Both agencies recognize the need for regional traffic projects to improve traffic flow within Windward Oahu as well as improve traffic flow across the trans-Koolau corridor. The State of Hawaii Department of Transportation has specifically proposed and has been actively pursuing implementation of the H-3 Freeway system since the early 1970's.
Recently, the City and County of Honolulu has also suggested improvements which are specifically aimed at increasing the capacity of the trans-Koolau traffic system. Therefore, both government agencies have similar policies which acknowledge that additional capacity is required for the trans-Koolau corridor in conjunction with population growth on the Windward side of Oahu.

With respect to regional traffic improvements on the Windward side of Oahu, the State of Hawaii Department of Transportation and the City and County of Honolulu Department of Transportation Services have identified projects which will improve traffic flow in concert with trans-Koolau corridor improvements. The projects which are identified are: improvements to the Castle Junction interchange, improvements to the Likelike Highway/Kahekili Highway interchange and improvements to Kahekili Highway consisting of widening from Likelike Highway to Kanehameha Highway. The latter two projects will specifically improve regional traffic flow in the Hecia/Ahuimanu/Kahaluu area. These regional traffic improvements are based on an analysis of existing conditions as well as population projections for growth in the Windward area.

With respect to timing considerations, it is anticipated that the currently proposed project will be developed in phases. The planning process, including
completion of the development plan amendment and change of zone will take approximately 18 months. The proposed project will be implemented in phases of approximately equal size over a period of 6 to 9 years. Regional traffic improvements, including improvements to the trans-Koolau corridor, as well as those identified within Windward Oahu, are partially related to the disposition of the H-3 Freeway. For example, improvements to the Castle Junction intersection and the Kahekili/Likelike Highways intersection are subject to modification depending on the final design of the H-3 Freeway or other trans-Koolau traffic improvements. However, the foregoing Windward traffic intersection improvements and widening of Kahekili Highway will be implemented regardless of the outcome of the H-3 Freeway issue.

In addition to these foregoing, there are other factors which have been researched regarding both local and regional traffic. Appendix B contains a traffic analysis for the Heeia Kea project site based on development of 500 residential units. In conjunction with this analysis, census data and traffic data were compared. The following observations were reported:

1. The population within Windward Oahu grew from approximately 16,000 to 23,000 between census years 1970 and 1980.

2. The peak traffic flow using all trans-Koolau corridors has remained relatively constant
over the same period of time and up through 1983. This statement was true based on using 1-hour peak period as well as 3-hour peak period.

3. The average daily traffic utilizing the trans-Koolau corridor has remained relatively constant over a period starting in 1978 through 1983.

The foregoing observations indicate the trans-Koolau corridors are carrying what is considered to be the maximum volume during the peak hour period. However, it is surprising that the average daily traffic has not increased somewhat proportionately to the population growth within Windward Oahu.

Review of census data indicates there are definite trends in driver habits which provide an explanation why average daily traffic has not increased proportionately to population growth. These trends are identified below:

1. The amount of jobs within Windward Oahu has increased significantly faster than the population growth. Therefore, fewer Windward residents are dependent on Leeward Oahu for employment. One example of this factor is the opening of Windward Mall.

2. Significantly more people were using carpools in 1980 as compared to 1970. There was an
average of 1.17 persons per car utilizing the trans-Koolau corridor in 1970 as compared to 1.45 persons per car in 1980.

3. Use of public transportation has significantly increased between 1970 and 1980. In 1970, 0.7 persons per 100 households used public transportation to commute to work. In 1980, 6.9 persons per 100 households were using public transportation.

E. Public Utilities and Services

1. Water

The 1983 EIS reported water will be made available to the site by connection to the Board of Water Supply's existing 272' Punalu'u transmission system consisting of a 30-inch transmission main. The previous EIS determined that the project will have an impact on the capability of the Board of Water Supply's system, although not considered significant. The project's average daily flow of 0.2 million gallons per day and peak flow of 0.6 million gallons per day water consumption rates are part of the island's growth which has been master-planned. Additional storage capacity of 0.3 million gallons per day will be required by the project. The developer will be required to pay the Board of Water Supply's prevailing water system facilities charges for source-transmission.
Under the current development plan, the project will require approximately an identical amount of water to meet average and peak demands. Current plans indicate water can be made available by connection to the 272' system. However, the exact hook-up point for the development's water system is dependent on the timing of the project in relation to the Board of Water Supply water development plans and will be determined when the Water Master Plan is submitted to the Board of Water Supply for review and approval. Small segments of 12-inch distribution main will be required to meet higher fire flows in the commercial and industrial districts, but the primary component of on-site transmission system will be a 6-inch main within the project's roadway system. The requirement for 0.3 million gallon storage capacity is still applicable. For the single-family residential units of this development, the present facilities charges range from $523 for a 5/8-inch meter to $4,184 for a 2-inch meter. The developer will be required to pay the prevailing charges when water meters are installed for the development.

2. Sewage Treatment and Disposal

The project site under its existing conditions is served by cesspools. There is no
existing centralized sewage collection system for the area.

The Heeia Kea Valley project will be connected to the City and County master-planned sewer system for the area. The project will have a beneficial impact on the existing conditions by eliminating the need for sewage disposal utilizing cesspools.

The previous EIS stated that the project will have an impact on the existing City and County sewage treatment facilities. The average and peak flows anticipated for the subdivision were 0.17 mgd and 0.97 mgd, respectively. The 1983 EIS reported the additional load should not be significant since connections will not be made until all components of the sewer system have been reviewed and determined to be adequate or upgraded.

Under the current development plan the project will generate an average sewage flow of 0.14 mgd and peak flow of 0.83 mgd. The sewage flows are essentially identical to the 1983 proposal. The description of the existing conditions and probable impacts are also identical.

3. Telephone and Electrical Service

An existing telephone and electrical system is located within the Kamehameha Highway right-of-
way fronting the project site. The existing system is adequate for the area and has the capacity to serve the project. As stated in the previous EIS, no significant impact is anticipated with respect to telephone and electric service.

4. **Solid Waste Collection**

The City and County of Honolulu refuse collection vehicles presently pick up refuse in the area and will continue to do so for the Heeia Kea subdivision. Although no direct impact is anticipated regarding the method of collection, an impact will be caused by an increased demand on the island refuse collection system.

5. **Police and Fire Protection**

The Heeia area presently has adequate police and fire protection. With respect to fire protection, the present site is halfway between the Kaneohe and Kahaluu stations. Response time and distance factors are 6 minutes and 3.2 miles, respectively. The previous as well as current actions will increase the workload for police patrols as well as increase the demand on the Fire Department. The previous EIS stated that increased demand on the Police Department and on the Fire Department will not be significantly adverse since both departments have current patrol responsibilities in the area. Property taxes from
the residential units will be partially used to increase necessary services.

The proposed project includes low-density apartment units. No structures are over 3-stories and additional fire support equipment such as ladder trucks will not be required based on consultation comments received from the Fire Department.

6. Schools

A comparison of Department of Education estimates for total enrollment generated by the previously proposed subdivision and current action is as follows:

<table>
<thead>
<tr>
<th>School</th>
<th>1983</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heeia Elementary</td>
<td>40-100</td>
<td>40-80</td>
</tr>
<tr>
<td>King Intermediate</td>
<td>10-25</td>
<td>10-20</td>
</tr>
<tr>
<td>Castle High</td>
<td>15-40</td>
<td>15-35</td>
</tr>
</tbody>
</table>

In 1983 the Department of Education indicated that the three schools were capable of accommodating the increased enrollment. The Department of Education has now indicated that Castle High is operating at capacity and may require funding for additional classrooms. The tax base created by the proposed housing will contribute to this expansion.
7. Recreation

There are no existing recreational facilities on the project site. Within the Heeia area, sites available for recreational activities include Heeia Small Boat Harbor and Heeia State Park. The previous and current actions both include a 3.5 acre park which will be dedicated to the City and County and developed in accordance with City and County standards. The park plans will be coordinated with the Department of Parks and Recreation. The proposed project will also include a 1.7 acre landscape buffer which will be maintained as a private park.

As stated in the previous EIS, the proposed subdivision will potentially increase usage of existing facilities. However, no significant adverse impacts on recreational activities in the area are anticipated provided the 3.5 acre park is appropriately planned and developed.

8. Mass Transit

City and County bus service exists on Kamehameha Highway fronting the project and this bus service will serve the proposed project. Based on average values of 4.1 persons per household and a 25 percent bus use factor, the project could generate between 360 and 440 mass transit users on a daily basis.
Additional buses for routes serving the Heeia area will be provided as necessary based on an evaluation of the whole bus system's demand. If the bus system's capabilities do not suit the user needs, alternative modes of transportation (normally automobiles) will be found. As stated in the previous EIS, the proposed project's impact on the bus system is not anticipated to be significant.

9. Ambulance Service

Availability of ambulance service was not discussed in the 1983 EIS. However, based on consultation comments received for this Supplemental EIS from the City and County of Honolulu, Department of Health, the ambulance fleet is adequate to handle emergency pre-hospital medical care and emergency ambulance services for the proposed development.

F. Social Characteristics

A study was prepared in August 1986 by Earthplan (Appendix C) which examined the project's potential social impacts, particularly as related to the character and culture of Kahaluu. The assessment's Study Area included the communities of Ahuimanu, Kahaluu, Heeia and Kaneohe. A summary of the study's findings are as follows:

The communities of the regional "neighborhood" share some similar characteristics.
Compared to Oahu as a whole, both communities tend to have larger households, be more family-oriented and less mobile, and their median incomes are higher. Kahaluu and Kaneohe have relatively higher labor force participation and less unemployment than the islandwide community. The housing vacancy rate is very low in these communities and both experience a very high proportion of owner-occupied units.

In many cases, however, the population of these communities are different. Kaneohe has a lower educational level, and Kahaluu has proportionally more professional, administrative, and other white-collar workers. The median value of Kahaluu's owner-occupied units are much higher than those in Kaneohe and its median rent is lower than that of Kaneohe.

This information indicates that Kahaluu tends to have a more diverse population than Kaneohe, or Oahu as a whole.

While Kahaluu has more people who have attended college, it also has more people who did not attend high school. Its proportion of families below poverty level resembled the island's proportion, even though its median income exceeded the island median. Further, some of Kahaluu's residents have higher-than-average mortgage
payments, and the community's renters must allocate a higher percentage of their incomes to rent, even though their median rent is lower than that of Kaneohe or Oahu.

Another major difference between these communities is their growth patterns. While Kahaluu and Kaneohe share agricultural roots, the pace of urbanization in Kaneohe was much quicker than Kahaluu. Today, Kaneohe's suburban nature, with its shopping malls and planned communities, is a sharp contrast to the slower-paced changes in Kahaluu.

Given these differences in histories and residential makeup, Kahaluu and Kaneohe seem to have different goals and concerns. The community pools and Neighborhood Board minutes indicate that Kahaluu wishes to retain this rural pace and enhance their agricultural activities, while improving public services to a level typical of larger population bases. Kaneohe's concerns center around their ability to accommodate their already growing population.

The Study Area reactions to the development of Heeia Hea are rooted in these differences in community directions and concerns. While no Study Area organizations have yet responded to the Preparation Notice of the Supplemental EIS, some have provided comments on previous proposals and
these are identified in this assessment. Most of their concerns were similar to those of Study Area people interviewed.

To further identify community feelings and concerns, interviews with seventeen Study Area residents were held. An effort was made to select individuals who collectively represented a diversity of interests. A summary of concerns raised by those interviewed is as follows:

- All those interviewed believed there is a strong need for housing in the area, and most felt that housing is appropriate for Heeia Kea. People differed, however, as to the type of housing the valley should accommodate. Some felt that Heeia Kea should have homes priced for average and higher income families. Others felt that Heeia Kea should address the need for low-priced homes.

- The project's traffic impacts on the immediately surrounding areas, as well as the regional trans-Koolau system, was raised by all those interviewed. Some indicated that they would be satisfied if the developer made necessary improvements to accommodate this particular project. While the others acknowledged that the regional problem "was not the applicant's problem", they also felt that the
applicant should either participate in solving the regional problem, or that the project should not proceed until the regional problem is solved.

- All of those interviewed expressed appreciation for the site's existing beauty and a desire to retain it. Some felt that, with proper planning, the proposed project could maintain and enhance this beauty. Others felt that any change to the existing character would be a negative one, although some of these people also felt that the trade-off would be worthwhile if the project were primarily affordable housing.

- Some people felt that Heeia Kea's most important value was that it serves as a transition, or buffer area, between suburban Kaneohe and rural/agricultural Kahaluu. This concern was expressed even though the proposed density would be lower than that of the abutting community on the Kahaluu side. These people were primarily Kahaluu residents and they wanted to retain this quality, either with a very low density residential project, or by establishing agricultural activities, or by planning for both uses through "whole valley planning".

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Other concerns raised, though not as frequently, were the need to continue to stimulate the construction activities in Windward Oahu which would, in turn, provide jobs; the noise impact of KHCAS aircraft on future Heeia Kea residents; the project's compatibility with the Heeia Kea pier and Kaneohe's Bay's ocean resources, particularly as related to Coastal Zone Management regulations; the future of the current residents; runoff into Kaneohe Bay; and the type of on-site industrial activities.

The bulk of concerns raised on the development of Heeia Kea center around quality of life issues which generally revolve around a personal and collective sense of well-being.

Such issues range from people's perception of how a project may affect an individual's daily activities and routine to how a project may ultimately impact a particular community's social fabric and goals for the future.

The social issues previously discussed generally fall into three categories of how people see this proposal affecting their quality of life: need for housing, inconveniences of inadequate public systems and infrastructure, and the creation or maintenance of a community identity.
Need for housing

While this need ultimately boils down to a personal need for housing, it is usually expressed by a community which feels that such a need exists in their midst.

Some people felt that more housing will allow young families to remain on the Windward side, as well as stimulate the economy, particularly the construction industry. Heivia Kea will improve this situation for those who believe that more market housing units are needed, or for those who are looking for a house at market rate.

For those that feel that the project should address the need of those who cannot afford to participate in the current housing market, most of whom are renters or are doubling up with their families, the project will allocate a portion of the proposed units for families with low and moderate incomes. These people were not satisfied with this level because they feel that Heivia Kea should house primarily families who cannot qualify for conventional housing.

Inconveniences of Inadequate Public Systems and Infrastructure

The best example of this quality of life issue is traffic, which was the most common
concern on the Heeia Kea project.

The kinds of solutions recommended by the Study Area individuals depended largely upon their "acceptance" of the traffic problems. Those who were satisfied by the applicant making improvements for this project seem to feel that traffic is and will be a perennial problem and people must learn to live with it. Those who do not want to allow any new projects until the problem is solved seem to feel that the situation will eventually change for the better.

The medium of these two extremes is the position that the applicant should make improvements as necessary, but also participate in community efforts to solve traffic problems.

The extent to which Heeia Kea will affect this quality of life issue largely depends upon the timing of the project relative to regional roadway improvements. The applicant has indicated that the project will require a couple of years to obtain approvals and permits, and a couple of years beyond that for project build out. It is believed that some of the roadway improvements will
already be completed and this will minimize the impacts.

Maintenance or Creation of Community Identity

For some, the intangible transition quality of Heeia Kea signals the arrival at "country", even though there are suburban-type developments on both the Kahanu and Kaneohe sides of Heeia Kea.

The question of impacting the regional identity therefore goes beyond the project's visual or residential compatibility with the surrounding area. It deals with whether or not this project will contribute to the desired direction and identities of the Kahanu and Kaneohe communities.

Some of the Kahanu residents interviewed reflected a two-fold desire to retain the rural and agricultural qualities of the area, and, at the same time, to have an equally strong desire to have more of the facilities, amenities and public services associated with the larger population base. These people may feel that the current proposal will "threaten" the rural identity they wish to retain.

Others, however, felt that the community need for more facilities and amenities
outweighed the need to retain the area's rural nature, and they felt that more market developments will help "upgrade" Kahaluu by adding diversity. To them, the current proposal is an asset.

For the Kaneohe residents interviewed, most did not discuss the project's value as a transition area. Rather, they centered on the project's infrastructure impacts. They did not seem to feel that the proposal would threaten their community identity.

Thus, in terms of community identity, some Kahaluu residents may feel that their rural identity would be threatened, even though the project site is abutted by single family residential development on the Kahaluu side and despite the distance between the project site and the actual agricultural activities. Other Kahaluu residents, and most Kaneohe residents, may not feel this identity impact either because they are accustomed to this type of project, or because the project is a step in the direction they wish for Kahaluu.

It is noted that the project's future residents will most likely have some consistent demographic characteristics as the existing Study population. Their incomes would probably be
similar to those already in the Study Area, and the family-orientation characteristic would probably be consistent with existing situations.

Further, the project site itself has a mixed identity. Because of the valley's proximity to both Kaneohe and Kahaluu, Heeia Kea is aligned with both communities, depending on the various boundary designations. Whereas it shares the same City Council member as Kaneohe and Kahaluu, its residents vote with Kaneohe residents for its State House Representative, and with Kahaluu residents for its State Senator.

Although it shares much history with Kaneohe and the overall Heeia ahupua'a, it is outside of the Heeia Census Designated Place (CDP). The project site lies in the Kahaluu CDP, and is in the jurisdiction of the Kahaluu Neighborhood Board.

It is estimated that Koolaupoko's 1984 population was 172,260 persons, which is 10,931 persons less than the project 2005 population of 124,200 persons. The estimated 1,200 persons resulting from the proposed housing units (based on 3.4 persons per household) would be well within the projected target population.

The City Department of General Planning estimated that the 4,900 additional housing units would be needed to accommodate the projected 2005
Koolaupoko population and that the vacant developable and under-utilized lands have a potential to accommodate 4,400 units. This implies that to fully accommodate the 2005 population, 500 housing units are needed, in addition to the existing and potential housing supply.

Of the proposed 360 units, 120 could be built under the existing Development Plan designations, and these units are already accounted for in the housing supply identified by DGP. The net increased of proposed units is 240, and these would contribute to the estimated housing deficit of 500 units.

The tangible quality of life issues, such as the need for housing and traffic inconveniences, can be partially mitigated by the proposed project. However, the extent of the intangible quality of life impact, namely the impact on community identity, will depend largely on how the community perceives this project relative to their needs and desires.
V. ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The 1983 EIS discussed the following unavoidable adverse environmental effects which are also applicable to the currently proposed project:

1. Construction activities will cause minor and temporary increases in noise levels and air quality deterioration. Surface water quality deterioration related to construction will be proportional to the effectiveness of temporary erosion control measures.

2. There will be a minor but adverse long term impact on the surface water quality of Kaneohe Bay resulting from an increased quantity of stormwater runoff.

3. The Heeia Kea development will produce a permanent demand on the Island's utilities, i.e. water, sewer, electric and telephone systems.

4. The project will increase the amount of traffic on Kamehameha Highway and other Windward roadways. The result of increased traffic will be increased congestion and vehicle emissions. The level of service of traffic on Kamehameha Highway will be reduced as compared to ideal conditions but is anticipated that the level of service will be tolerable.

5. The noise level in the area resulting from Kaneohe Marine Corps Air Station will approach the maximum permissible for residential areas.
6. There will be an increased demand on public facilities, i.e. schools, police protection, fire protection, libraries and recreational facilities.

In light of the foregoing adverse environmental effects, the rationale for proceeding with the proposed project is as follows:

1. None of the above adverse effects either singularly or cumulatively is expected to create any significant impact to the area. The proposed subdivision is not out of character with the environment and in fact is very similar in nature to almost all of the residentially developed areas north of Kaneohe town along Kanehameha Highway. The availability of infrastructure and potential views for homeowners make the site ideal for a residential area.

2. There is a strong demand for residential housing on Oahu in the median-income group. The proposed subdivision will provide for this market by creating lots of a size which are affordable to a median-income family. The subdivision is not geared toward mainland investment nor is it geared toward estate-type living. Some low and moderate cost units will be included in the project.

3. The economic viability of other types of development and in particular, diversified agriculture, are not realistic. Of the crops previously grown on the site, only pineapple achieved any success. This economic success terminated concurrently with the advent of
field mechanization requiring flatter and larger areas for crop production.

4. There is a concern among some within Windward Oahu that each new project that receives approval represents the project that opens the gate to transform the rural character of parts of Windward Oahu into a suburban area. However, neither the location or character of the project site represent such a threat to the community.
VI. ALTERNATIVES TO THE PROPOSED ACTION

The previous EIS discussed the following alternatives to the proposed action:

1) no action
2) agricultural development
3) reduced density development (190 unit cluster arrangement)
4) alternative type housing (planned development and cluster).

These alternatives are also applicable to the revised project.

The additional alternative of mariculture was explored as part of this supplement. Appendix D contains the complete feasibility analysis as prepared by Mr. Mark Yanagihara Brooks. Limiting factors for successful mariculture are fresh water costs, brackish water discharge limitations and high production yield requirements. The report concludes that neither aquaculture or mariculture are appropriate potential uses for land in the project area. The likelihood of sustaining viable mariculture on the site is minimal.
VII. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S
ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF
LONG-TERM PRODUCTIVITY

As discussed in the previous EIS, development of the site
will establish a long-term productivity as a source of median-
income housing for Oahu residents. No short-term uses are
proposed and no long-term losses concerning agriculture, fauna,
water or scenic views are anticipated.
VIII. MITIGATIVE MEASURES TO MINIMIZE IMPACT

The 1983 EIS proposed the following mitigative measures to minimize the impact of unavoidable probable adverse environmental effects:

1. The adverse effects of construction noise will be mitigated by performing work utilizing heavy equipment during daytime hours and during weekdays. No grading activities or activities which produce high noise levels will be allowed during holidays, weekends or before 7:00 a.m. and after 4:00 p.m. In addition, the Contractor is responsible for obtaining a noise permit. Conditions of the noise permit are identification of activities which will exceed 55 decibels, as well as a description of the methods, i.e., mufflers and enclosures, which will be utilized to reduce higher noise levels.

The adverse effects of air quality deterioration during construction will be mitigated by wetting down loose soils when earthwork activities occur or when earth surfaces are exposed. Vehicle emissions from internal combustion engines of construction vehicles will be minimized by ensuring that engines are in proper operating condition.

Surface water quality deterioration will be mitigated by using an erosion control plan during grading. The plan will be reviewed and approved by the City and County of Honolulu. Erosion control will be in the form of performing work during drier periods of
the year and utilizing effective filter berms and sediment traps and sediment ponds. The maximum size grading increment which can be opened at any one time is 20 acres. Every grading increment must be completed and grassed prior to opening of additional increments.

2. The long-term adverse effects of surface water quality deterioration to Kaneohe Bay resulting from increase surface runoff are not anticipated to be significant. Permanent landscaping will be used to mitigate increased surface runoff. Landscaped areas will have a greater tendency to retain rainfall and runoff.

3. The adverse effects of permanent demands placed on the Island's utilities and facilities cannot be mitigated directly. However, the planning process, construction plan approval process and ultimate subdivision approval process will provide sufficient review to ensure that the project's demands will not significantly affect utilities and facilities. Any utilities and facilities which are inadequate will be upgraded in accordance with the requirements of the appropriate agency.

4. The adverse effect of increased traffic will be mitigated by providing channelized intersections within Kane'ohi Highway to facilitate turning motions and through traffic. The adverse effect of increased traffic within the Kaneohe area during peak traffic hours will be alleviated once projects, such as the State's H-3 project is completed. The level of traffic
on Kamehameha Highway will be reduced as compared to ideal conditions, however, it will be tolerable.

5. The effect of an increased noise level in the Heia Kea area resulting from the project is not considered significant. No mitigation measures are proposed other than landscaping around the park area to provide a buffer for neighboring residents. The potential adverse effect of aircraft noise affecting those residential units within the Ldn 60-65 decibel noise zone can be addressed by proper disclosure to prospective buyers during sales and mitigated by the use of appropriate sound insulation/attenuation materials in house construction. It is proposed to utilize insulation and attenuation materials as described by FHA and HUD to meet mortgage requirements.

6. It is expected that the additional archaeological work will be completed prior to construction to provide reasonable satisfaction that all significant archaeological value of the site has been appropriately evaluated. The following work will specifically be proposed in conjunction with six previously identified sites:

1. Salvage excavations at all sites.
2. Monitoring of all ground disturbing activities.
3. Preservation of two shrine sites (HK-IV and HK-V).
4. Implement a program of subsurface testing to assess the possibility of subsurface remains.
5. Provide additional historic literature review.

The mitigation measures discussed in the 1983 EIS are applicable to the currently proposed project. In addition, the following mitigation measures are proposed:

1. Greater setbacks requirements and landscaping buffers are required by the City and County of Honolulu's Comprehensive Zoning Code and Land Use Ordinance where abutting lots have different zoning. These requirements will help mitigate potential adverse impacts relating to noise generated by commercial and industrial areas which affect adjacent residential lots.

2. Measures to minimize impact of noise generated by construction activities are identified in State of Hawaii Title II, Administrative Rules, Chapter 43, Community Noise Control for Oahu and Chapter 42, Vehicular Noise Control for Oahu. Included are requirements for mufflers for construction equipment and vehicles requiring gas or exhaust discharge; requirement that traffic noise from heavy vehicles traveling to and from the construction site must be minimized near existing residential areas.

3. Additional regional traffic improvements have been identified which will help mitigate traffic congestion. These projects are Kahekili Highway/Likelike Highway intersection improvements and widening of Kahekili Highway. Reduced traffic congestion at Kahekili Highway will, in turn, reduce traffic congestion on Kamehameha Highway.
IX. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The following discussion concerning commitment of resources was included in the 1983 EIS and is also applicable to the currently proposed project.

The 1983 EIS stated that the implementation of the Heeia Kea Subdivision will represent an irreversible and irretrievable commitment on the land. Project implementation will also represent an irreversible and irretrievable commitment on all utilities and facilities which would normally serve the area. These utilities and facilities are roadways, water, sewer, solid waste, schools, fire protection, police protection and recreational facilities. However, a major portion of the utility and facility commitments are the utilization of manpower and materials.

With respect to resources, only the commitment on the land and degradation to Kaneohe Bay will be nonrenewable for all practical purposes. The water commitment for the project involves a renewable resource which is generally observed to be in adequate supply and therefore, ample to serve this project as well as future growth.

The above statement concerning commitment of resources included in the 1983 EIS is applicable to the currently proposed project.
X. AN INDICATION OF WHAT OTHER INTERESTS AND CONSIDERATIONS OF GOVERNMENT POLICIES ARE THOUGHT TO OFFSET THE ADVERSE ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

The 1983 EIS indicated that government policy normally directs growth and development in areas suitable for growth with an underlying concern for the environment. The adverse environmental impacts of the proposed project were reported as not significant as compared with the countervailing benefit of housing.

The statements above, included in the 1983 EIS, are applicable to the currently proposed project. However, the project's zoning district and land use designation are currently agricultural.

The SUP EIS identifies three considerations that offset the adverse environmental effects identified in this document. The Koolaupoko DP Land Use Map amendment has been proposed to address three problems facing the City and County:

1. The strong demand for new single-family and multi-family housing in the Koolaupoko District.
2. The equally strong demand for affordable housing.
3. The shortage of vacant industrial and commercial-designated land in the Koolaupoko District.

The currently proposed project will assist the City and County in meeting the needs caused by the inadequate housing supply and the lack of industrial and commercial land in Koolaupoko.
XI. ORGANIZATIONS AND PERSONS CONSULTED

A Supplemental Environmental Impact Statement Preparation notice was published in the EQC Bulletin on July 23, 1986 for the Heeia Kea Valley, Koolaupoko District, Oahu. Concurrently with publication of the foregoing bulletin, 46 copies of the preparation notice and requests for consultation comments were sent to the agencies and groups identified in the table on the following page. Twenty-five groups or agencies responded with comments and all responses were answered. Appendix E contains a copy of the Supplemental EIS Preparation Notice. All consultation comments and responses are included within this section following the table of agencies and groups contacted for comments.

In addition to the foregoing comments, various consultants and experts were utilized to help prepare portions of the Draft Supplemental EIS. Persons and firms responsible for the preparation of this Draft Supplemental EIS include: Gray, Hong & Associates, Inc., Civil and Sanitary Engineers; Cowell & Co., Inc., Real Estate Consultants; Barry D. Root, Air Quality Consultant; Dr. Frank S. Scott, Jr., Ph.D., Agricultural Economist; Dr. Charles Lamoureux, Botanist; Dr. Andrew J. Berger, Zoologist; Joseph Kennedy, Archaeological Consultants of Hawaii; Mark Yamagihara Brooks, Aquaculture Consultant; Berna Cabaungan, Earthplan, Social Consultant.
### XIII. AGENCIES AND ORGANIZATIONS INVOLVED IN THE CONSULTATION PERIOD

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<td>Hawaiian Electric Company, Inc.</td>
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August 18, 1986
Post Office Box 992
Kaneohe, Hawaii 96744

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

Re: Supplemental Environmental Impact Statement for Proposed Development at Heiau Kea Valley, Oahu

Dear Mr. Gray:

We are residents of the area near the proposed development in Heiau Kea and will be directly and personally affected by the proposed development. Accordingly, we wish to be consulted parties in the preparation of the above-referenced EIS. We are particularly concerned that the EIS address problems of traffic, noise, pollution and increased recreational competition in Kaneohe Bay, increased demands on public facilities and services, and impacts upon schools and overcrowding. Another important factor is the cumulative impact of this project in connection with other projects and areas already approved for development in the existing development plans and under current zoning for the windward side.

You may contact us at the above address. Thank you for this opportunity to have our concerns addressed.

Sincerely,

Ronald and Kathryn Albu

---

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL L. HONG, PE
DANIEL B. MILLE, PE
REBECCA W. NISHIDA, PE
Beverly G. Inc, PE
ROBERT JONES

September 2, 1986

Mr. and Mrs. Ronald Albu
P. O. Box 992
Kaneohe, Hawaii 96744

SUBJECT: Heiau Kea Valley
Preparation Notice for Supplemental Environmental Impact Statement (EIS)

Dear Mr. and Mrs. Albu:

Thank you for your letter dated August 18, 1986 requesting that you be a consulted party of the Supplemental EIS. You will be notified when the Draft Supplemental Impact Statement is available for review.

Your concerns regarding noise, pollution, recreation, education and public facilities were addressed in the Revised EIS prepared in 1985. The Supplemental EIS will summarize the previous findings. However, the Supplemental EIS will address traffic and social impacts which may differ from those reported in the previous EIS.

The previous EIS described development consisting of 418 units on 102 acres in Heiau Kea Valley. As identified in the Supplemental EIS Preparation Notice, the current proposal is for 260 units on 69.5 acres. Impacts with respect to noise, pollution, recreation, education and public facilities are no greater and were probably reduced than reported in 1985; and detailed discussion is not being devoted to these factors in the Supplemental EIS.

Your comments as well as our response will be incorporated into the Draft Supplemental EIS in accordance with Chapter 343, Hawaii Revised Statutes, EIS Regulations.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

BRIAN L. GRAY, PE

---

119 MERCHANT STREET SUITE 607, HONOLULU, MAUI 96813
TELEPHONE: 808-521-0300

XI. A-1

---

XI. B-1
Mr. Brian L. Gray  
Gray, Hong and Associates, Inc.  
115 Merchant Street, Suite 607  
Honolulu, Hawaii 96813

Re: Supplemental EIS for Heeia  
Kee Subdivision, Heeia, Oahu

Dear Mr. Gray:

In response to your letter of July 22, 1986, the Service has reviewed the Preparation Notice for a Supplemental EIS concerning the proposed Heeia Kee subdivision, Heeia Valley, Oahu. We have no further comments to offer at this time. Thank you for providing this opportunity to evaluate the project’s consequences upon fish and wildlife resources within our Jurisdiction.

Sincerely,

Ernest Kosaka  
Project Leader  
Office of Environmental Services

Mr. Ernest Kosaka, Project Leader  
Office of Environmental Services  
United States Department of the Interior  
Fish & Wildlife Service  
300 Ala Moana Boulevard  
P. O. Box 30168  
Honolulu, Hawaii 96850

September 2, 1986

Mr. Brian L. Gray  
Gray, Hong & Associates, Inc.

Save Energy and You Serve America!
Mr. Brian L. Gray  
Gray, Hong and Associates, Inc.  
119 Merchant Street, Suite 607  
Honolulu, Hawaii 96813  

Subject: Supplemental Environmental Impact Statement (SEIS)  
Preparation Notice for Proposed Development at Heiau  
Kaa Valley, Oahu  
TRM: 4-6-86 5, 7 through 16, 22 through 55  
4-6-86: 22  

Dear Mr. Gray:  

Pursuant to the subject notice as printed in the OGC  
Bulletin (Volume II, No. 14, July 23, 1986), please be apprised  
that the Department of Agriculture would like to be a consulted  
party.  

Please send pertinent correspondence to:  

Mr. Jack K. Suwa  
Chairman, Board of Agriculture  
P.O. Box 22159  
Honolulu, Hawaii 96822  

Thank you very much.  

Sincerely,  

Earl J. Yamamoto  
Agricultural Planner  

GRAY, HONG & ASSOCIATES, INC.  
CONSULTING ENGINEERS  

Mr. Earl J. Yamamoto  
Department of Agriculture  
State of Hawaii  
P.O. Box 22159  
Honolulu, Hawaii 96822-0159  

SUBJECT: Heiau Kaa Valley  
Preparation Notice for Supplemental  
Environmental Impact Statement (SEIS)  

Dear Mr. Yamamoto:  

We have received your letter dated August 5, 1986 requesting to be a  
consulted party for the subject Supplemental Environmental Impact Statement.  
The Department of Agriculture is currently on the list of consulted parties and  
Mr. Suwa has provided us with consultation comments regarding the subject  
Preparation Notice.  

Should you have any questions please contact our office.  

Very truly yours,  

Gray, Hong & Associates, Inc.  

Brian L. Gray  

BB:14  
1301-1  

190 MERCHANT STREET SUITE 607, HONOLULU, HAWAII 96813 - TELEPHONE: 848-6300  

XL  A-3
Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
319 Merchant Street
Honolulu, HI 96813

Dear Mr. Gray:

Thank you for your letter of July 27, which contained the Preparation Notice Supplemental Environmental Impact Statement for Kea‘au Valley.

Although the Kea‘au Bay Community Association no longer exists, we would appreciate continuing to receive information such as this. Please delete the Kea‘au Bay Community Association from the address and send it to the Public Affairs Officer, Marine Corps Air Station, Kaneohe Bay, 96744.

If you have any questions, please call me at 257-3189.

Sincerely,

[Signature]

STANTON R. GOULD
Captain, U.S. Marine Corps
Public Affairs Officer

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

Brian L. Gray, PE
David A. Hong, PE
David M. Miller, PE
Beverly Y. Imai, PE
Robert J. Jones

September 2, 1986

Captain Stanton R. Gould
Public Affairs Officer
United States Marine Corps
Marine Corps Air Station
Kaneohe Bay, Hawaii 96744

SUBJECT: Kea‘au Valley
Preparation Notice for Supplemental
Environmental Impact Statement (EIS)

Dear Captain Gould:

We have received your letter dated July 29, 1986 regarding the subject Preparation Notice for the Supplemental Environmental Impact Statement (EIS). As requested, we have deleted Kea‘au Bay Community Association from our list of organizations involved in the consultation period. We will continue to send information to you.

Should you have any questions please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

[Signature]

BRILE
1981-1

1895 WAIKUHOU STREET, SUITE 615, HONOLULU, HAWAII 96815. TELEPHONE: 808-547-0393

XI. A-4
Dear Mr. Hayashida:

Subject: Your Letter of July 22, 1986 on the Preparation of the Draft Supplemental Environmental Impact Statement for Neina Kea Subdivision, TNI: 4-4-98; 3, 2, 4, 7-16; 22-51 and 4-4-16: 32

Thank you for consulting with us on your proposed development. We offer the following comments for your consideration:

1. A Water Master Plan must be submitted for our review and approval.

2. The proposed amendment may result in the developer upgrading those improvements required for the Koolau Pau Development Plan. This potential upgrading would be due to the higher fire flow required for the Industrial and Commercial areas.

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

Very truly yours,

[Signature]

KAZU HAYASHIDA
Manager and Chief Engineer

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 2, 1986

Mr. Brian L. Gray
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96813

SUBJECT: Neina Kea Valley
Preparation Notice for Supplemental Environmental Impact Statement (EIS)

Dear Mr. Hayashida:

We have received your letter dated August 11, 1986 regarding the subject Supplemental Environmental Impact Statement (EIS). The following responses are provided to address your comments:

1. The Supplemental EIS will state that the water master plan will be prepared and submitted to the Board during the development process.

2. The complete water system, including any necessary upgrading required due to higher fire flows required for the Industrial and Commercial areas, will be analyzed and submitted to the Board in the project's water master plan.

The Supplemental EIS will identify the current project's average daily flow, peak flow and fire flows by district. The Supplemental EIS will also identify the project's storage requirement of 0.2 R or 0.5 R. It will further be identified that portions of the project's on-site transmission system will be 12-inch to provide adequate fire flow to the higher use districts. All of these preliminary engineering calculations are, of course, subject to your review.

Your comments as well as our response will be incorporated into the Draft Supplemental EIS in accordance with Chapter 345, Hawaii Revised Statutes, EIS Regulations.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.
GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

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

Dear Mr. Gray:

SUBJECT: Request for Consultation Comments Supplemental Environmental Impact Statement for Heili Kea Valley, Haiku, Maui, Hawaii

We have received your report on subject request. Our ambulance fleet should be able to handle the 911 calls for emergency prehospital medical care and emergency ambulance services generated by this project.

Sincerely,

ALMA C. CORN, M.D.
Director and City Physician

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

Alma C. Corn, M.D.
Director and City Physician
Department of Health
City and County of Honolulu
1455 South Beretania Street
Honolulu, Hawaii 96814

SUBJECT: Heili Kea Valley
Preparation Notice for Supplemental Environmental Impact Statement (SEIS)

Dear Dr. Corn:

Thank you for your letter dated August 11, 1986 regarding the Preparation Notice for the Supplemental EIS. The information you have provided will be incorporated into the Draft Supplemental EIS in accordance with Chapter 343, Hawaii Revised Statutes, EIS Regulations.

Should you have any questions please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

DEPARTMENT OF HEALTH
CITY AND COUNTY OF HONOLULU
1455 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96814

AUG 12 1986

FRANK TAP

ACTION:

AUG 11, 1986

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL B. HONG, PE
DAVID B. HILL, PE
MICHAEL W. NOEPA, PE
BEVERLY L. MARC, PE
ROBERT M. JONES
August 1, 1986

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Request for Consultation Comments
Supplemental Environmental Impact Statement for Heeia Kea Valley
Heeia, Koolapoho, Oahu

We believe that the scope of the additional studies as proposed in your preparation notice will provide the necessary information for us to assess the traffic impact of the project.

Sincerely,

John F. Birten

September 2, 1986

Mr. John E. Birten, Director
Department of Transportation Services
City and County of Honolulu
630 South King Street, 3rd Floor
Honolulu, Hawaii 96813

SUBJECT: Heeia Kea Valley
Preparation Notice for Supplemental Environmental Impact Statement (EIS)

Dear Mr. Birten:

Thank you for your letter dated August 1, 1986 regarding the Preparation Notice for the Supplemental EIS. Your letter will be incorporated into the Draft Supplemental EIS in accordance with Chapter 363, Hawaii Revised Statutes, EIS Regulations.

Should you have any questions please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

[Signature]

[Stamp]
Gray, Hong and Associates, Inc.
119 Merchant Street, Suite 807
Honolulu, Hawaii 96813

Gentlemen:

Subject: Request for Consultation Comments
Supplemental Environmental Impact Statement for Maile Sea Valley

We have reviewed the copy of the Supplemental Environmental Impact Statement Preparation Notice that you had forwarded.

The area will be serviced by police officers from the Kamehameha District Station.

Our concerns center around the dust and noise that will inevitably be generated during the construction phase of the proposed project and the impact it may have on public safety. We have no further comment to offer at this time.

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

Sincerely,

DOUGLAS G. GIBB
Chief of Police

By: David Nakakura
Assistant Chief of Police Administrative Bureau

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

Mr. Douglas G. Gibb, Chief
Honolulu Police Department
City and County of Honolulu
1555 South Beretania Street
Honolulu, Hawaii 96814

S U B J E C T: Maile Sea Valley
Preparation Notice for Supplemental Environmental Impact Statement (EIS)

Dear Mr. Gibb:

Thank you for your letter dated July 20, 1986 regarding the subject Preparation Notice for the Supplemental EIS. Responses to your concerns are provided as follows:

1. We agree that the project will generate noise during construction. However, public safety should not be significantly compromised since noise levels must meet state and OSHA standards. Certain activities, such as earth-moving, will not be allowed during weekends or during non-working hours.

2. Temporary short-term air quality impact can result from fugitive dust created during construction activities. However, the air quality impact is subject to City and County, as well as state regulatory controls, and is expected to be within regulatory limits.

The information you have provided will be included in the Draft Supplemental EIS. Should you have any questions, please contact our office.

Very truly yours,

BRAD L. GRAY

18 WASHINGTON STREET, 300 HONOLULU, HAWAII 96813
TELEPHONE: (808) 536-3306
XI. A-8
Mr. Brian L. Gray  
Gray, Hopp & Associates, Inc.  
119 Merchant Street, Suite 607  
Honolulu, Hawaii 96813  

Dear Mr. Gray:

SUBJECT: Comments on Supplemental EIS  
For Heeia Kea Valley  
Heeia, Koolau, Oahu

Our review of the proposed 300 single family and 50 multi-family units indicates that it may generate the following student enrollment:

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>GRADE</th>
<th>APPROXIMATE ENROLLMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heeia Elementary</td>
<td>K-6</td>
<td>40 - 80</td>
</tr>
<tr>
<td>King Intermediate</td>
<td>7-8</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Castle High School</td>
<td>9-12</td>
<td>15 - 35</td>
</tr>
</tbody>
</table>

Heeia Elementary and King Intermediate schools have adequate classrooms to accommodate the projected enrollments. Castle High School, on the other hand, is operating at capacity and may require funding for additional classrooms.

Please keep us informed of any developmental changes so that we may be able to respond to classroom needs in a timely manner.

Should you require any clarification, please call Mr. Richard Inouye at 737-4743.

Sincerely,

Francis M. Hataoka  
Superintendent

FM: J1  
cc: DOS  
K. Takata, Windward Dist.

GRAY, HONG & ASSOCIATES, INC.  
CONSULTING ENGINEERS

Mr. Francis Hataoka  
Superintendent  
State of Hawaii  
Department of Education  
Queen Kilihuehui Building  
P.O. Box 2360  
Honolulu, Hawaii 96804

SUBJECT: Heeia Kea Valley  
Preparation Notice for Supplemental  
Environmental Impact Statement (EIS)

Dear Mr. Hataoka:

Thank you for your letter dated July 29, 1986 regarding the Preparation Notice for the Supplemental EIS. The student enrollment figures you have provided will be incorporated into the Draft Supplemental EIS.

Your comments as well as our response will be incorporated into the Draft Supplemental EIS in accordance with Chapter 343, Hawaii Revised Statutes, EIS Regulations.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray  
Director  
1301-1
Mr. Brian L. Gray
116 South King Street, Room 508
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Recreational Assessment
Supplemental Environmental Impact Statement
Heeia Kea Subdivision
TRC: 4-6-06 and 4-6-16

We have reviewed the Supplemental Environmental Impact Statement for the proposed Heeia Kea Subdivision and the following comments and recommendations.

We did not have the opportunity to comment on the revised proposal for the Heeia Kea Subdivision. Our previous comments of the project EIS review were sent to you on December 10, 1982. We have, however, determined that our recreational concerns for the revised proposal remain the same.

Although a 3.5-acre urban site has been designated on the proposed Development Plan Land Use Map, the supplemental report has not addressed the recreational impact that the project will have on our public park facilities in the Heeia District.

We would once more like to emphasize that the proposed park must meet City standards and park dedication requirements. The determination of the park site as public or private must also be made at this time so that we may further assess the recreational needs of the project.

Please contact Mr. Jason Yuen of our Advance Planning section to discuss the project’s recreational requirements to avoid delays in obtaining City approvals for the proposed project.

Sincerely yours,

TOM T. NUKAIA, Director

TIME:

ATTACH.

XI, A-10

December 10, 1982

Mr. Brian L. Gray
116 South King Street, Room 508
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: RECREATIONAL ASSESSMENT
ENVIRONMENTAL IMPACT STATEMENT PREPARATION REPORT
TRC: 4-6-06: 1, ET AL. & 4-6-16: 32

We have reviewed the Environmental Impact Statement Preparation Notice for the Heeia Kea Subdivision and make the following comments and recommendations.

The proposed project, which includes more than 400 lots, will have a significant impact on our public parks in this area. The nearest public parks, Heeia Playfield and Kahanu Field, are located over two miles away and could not effectively serve the future residents of this project. The designation of 3.5 acres for a park site is commendable and it could fulfill the recreational requirements if properly planned.

The report does not indicate whether the proposed 3.5-acre park will be developed as a public or private park. This determination should be made and included in the Draft EIS. In either case, the park could satisfy the requirements of the City’s Park Dedication Ordinance No. 4071. It will be necessary to coordinate with our Department to establish the configuration, location and suitability of the park site to meet the park dedication and City standards and requirements. This should be done in advance of any permit applications in order to avoid a delay in our Department approval.

Since the lands surrounding the project are designated conservation, we recommend that the preparation notice be referred to the State Department of Land and Natural Resources for their comments also.

Please contact Mr. Jason Yuen of our Advance Planning Section at 523-4695 to discuss the project’s park dedication and City’s requirements.

Sincerely yours,

EIKO I. KUO, Director

(Rev. 0)

ATTACH.

FILE COPY
GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 2, 1986

Mr. Tom T. Nakata, Director
Department of Parks and Recreation
City and County of Honolulu
600 South King Street, 9th Floor
Honolulu, Hawaii 96814

SUBJECT: Kailua Valley
Preparation Notice for Supplemental
Environmental Impact Statement (EIS)

Dear Mr. Nakata:

Thank you for your comments dated August 7, 1986 regarding the Preparation Notice for the Supplemental EIS. We concur that the proposed project will create a demand on existing public park facilities in the Kailua District. However, it is our intent to develop a park area to meet the subdivision's needs as well as comply with the City's Park Dedication Ordinance.

The 3.5 acre park site is intended to be dedicated to the City and to satisfy the project's Park Dedication Ordinance requirements. You will be coordinated with to ensure that the park meets City standards and park dedication requirements. The 1985 EIS, as well as this Supplemental EIS, will state that the proposed 3.5 acre park will help offset the additional recreational demand created by new residential units in the Kailua area.

Your letter as well as our response will be incorporated into the Supplemental EIS.

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

Sincerely,
Brian L. Gray

GR-1-3
3301-1

150 MERCHANT STREET, SUITE 400, HONOLULU, HAWAII 96814 - TELEPHONE (808) 521-6390
X1. D-10
Mr. Brian L. Gray
Gray, Hongs & Associates, Inc.
315 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Thank you for the opportunity to review and comment on the Supplemental EIS Preparatory Notice for Kea Kea Valley, Heiau, Koolau, Oahu. The following comments are offered:

a. Suggest coordination with Operations Branch (telephone: 438-9258) for potential need of a Department of the Army permit for the box culvert improvements.

b. According to the Flood Insurance Rate Map prepared by the Federal Insurance Administration for the City and County of Honolulu, the area is in Zone B designation which are areas of undetermined, but possible flood hazards (enclosure).

Sincerely,

[Signature]

Enclosure

Mr. Kim C. Cheung
Chief, Engineering Division
Department of the Army
U.S. Army Engineer District, Honolulu
P.O. Drawer, Hawaii 96816-3440

SUBJECT: Kea Kea Valley
Preparation Notice for Supplemental Environmental Impact Statement (EIS)

Dear Mr. Cheung:

Thank you for your letter dated August 4, 1986 regarding the Preparation Notice for the Supplemental EIS. We are providing the following responses to your comments:

1. The Supplemental EIS will detail the scope of the project sufficiently to determine the need for Department of the Army permits. Based on our preliminary work, we do not foresee any need for Department of the Army permits. The existing box culverts under Kamehameha Highway appear adequate and will not be improved by this project.

2. The project site is within Zone D and there is no requirement to comply with the City and County's Flood Ordinance (No. 80-52). However, a drainage report will be prepared and submitted to the City and County Department of Public Works during the development process.

Your comments and our responses will be incorporated into the Supplemental EIS.

Very truly yours,

Gray, Hongs & Associates, Inc.

[Signature]
Mr. Brian L. Gray  
Gray, Hong & Associates, Inc.  
119 Merchant Street, Suite 607  
Honolulu, Hawaii 96813  

Dear Mr. Gray:

Subject: Supplemental Environmental Impact Statement  
Heeia Kea Valley  
Heeia, Koolau, Oahu

We have no comments on the proposed Heeia Kea Valley project.

Thank you for the opportunity to review the Supplemental Environmental Impact Statement Preparation Notice for the project.

Very truly yours,

HERBERT K. MURAKA  
Director and Building Superintendent

cc: J. Harada
GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 7, 1986

Mr. Russell L. Smith, Jr.
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
500 South King Street
Honolulu, Hawaii 96813

SUBJECT: Heeia Kea Valley
Preparation Notice for Supplemental
Environmental Impact Statement (EIS)

Dear Mr. Smith:

Thank you for your letter dated August 1, 1986 regarding the Preparation Notice for the Supplemental EIS. We are providing the following responses to your comments:

1. The EIS prepared in 1983 contained a runoff map for the Heeia Kea watershed passing through the project. Off-site and on-site runoff criteria were developed and the existing drainage structures were identified. We are enclosing a copy of the drainage exhibit which was included in the previous EIS. A smaller map as well as all calculations will be submitted to the Department of Public Works in the form of a drainage report during the development process.

   It should be noted that the development area of the previous section (1983) was 102 acres, while the current development area is 48.5 acres. The runoff quantities generated by the current development will be slightly less than those shown on the attached exhibit.

2. Regarding the wastewater pump station near Heeia "Long" bridge, the requirement for coordination with the Division of Wastewater Management and your office will be identified in the Supplemental EIS.

Should you have any questions please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray, PE
199 WAIKIKI STREET, SUITE 607 HONOLULU, HAWAII 96815
TELEPHONE (808) 589-0505

August 1, 1986

Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 507
Honolulu, Hawaii 96813

Gentlemen:

Re: Supplemental EIS for Heeia Kea Valley
Heeia, Kualoa, Hawaii
(Tax Map Key: 4-8-006; parcel 4-8-016: 32)

We are responding to your request dated July 22, 1986, concerning the subject project.

1. A drainage report should be prepared and submitted to the Drainage Section, Division of Engineering, for review and approval.

2. The design (sizing), construction, and operation and maintenance of the wastewater pump station near the Heeia "Long" bridge should be coordinated with the Division of Wastewater Management. A construction schedule of off-site sewer improvements should be sent to this office.

Very truly yours,

Russell L. Smith, Jr.
Director and Chief Engineer

Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 507
Honolulu, Hawaii 96813
11 August 1996

Mr. Brian L. Gray
Gray, Hong & Associates
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:


We have reviewed the subject notice and have no comment at this time. Thank you for the opportunity to comment. This material was reviewed by WERC personnel.

Sincerely,

Edwin T. Murabayashi
EIS Coordinator
ETM:ju

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 2, 1996

Mr. Edwin T. Murabayashi
EIS Coordinator
University of Hawaii at Manoa
Water Resources Research Center
Holomua Hall 283
2540 Dole Street
Honolulu, Hawaii 96822

SUBJECT: Heia Kea Valley
Preparation Notice for Supplemental Environmental Impact Statement (EIS)

Dear Mr. Murabayashi:

Thank you for your letter dated August 11, 1996 regarding the Preparation Notice for the Supplemental EIS. Your letter will be incorporated into the Draft Supplemental EIS in accordance with Chapter 343, Hawaii Revised Statutes, EIS regulations.

Should you have any questions please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

8-Bit
1301-1
August 17, 1986

Mr. Brian L. Gray, PE
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Supplemental Environmental Impact Statement
Heia Kea Valley, Heiau, Koapuaokua, Oahu

The proposal of constructing low-density apartment and single-family units in the agriculture district of the Development Plan has been reviewed by the DHCD. The Department is mandated to provide housing units for low and moderate-income families on Oahu. We note that a Development Plan change is needed, and in accordance with the current Departmental policy, we wish to request that at least ten percent of all residential developments be set aside for these groups. This request applies to all zone changes, cluster and planned development-housing applications. Such a requirement is a reasonable means of recapitulating the economic benefits conferred by favorable land use allocations and distributing that benefit for the general public benefit.

We request that the developer specify the location of the units, as well as the type of unit (1-bedroom, 2-bedroom, etc.) to be provided for low- and moderate-income families.

It should be noted that we are currently reviewing our policy relating to the ten percent set aside and will inform you of any specific policy adjustments adopted.

If you have any questions, please contact Mr. James Miyagi of our Housing Division at 523-4264, who will assist the developer in formulating a program to provide these units.

Sincerely,

[Signature]

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

September 2, 1986

Mr. Mike Moon

Subject: Heia Kea Valley Preparation Notice for Supplemental Environmental Impact Statement (EIS)

Dear Mr. Moon:

Thank you for your letter dated August 12, 1986 regarding the Preparation Notice for the Supplemental EIS. The Supplemental EIS will discuss the developer's intention to make available at least 10% of the units for low- and moderate-income families. Your request that the developer specify the location and type of units to be provided for the low- and moderate-income families will also be incorporated into the Draft Supplemental EIS. The location of these units will be the low-density apartment area as shown on the Development Plan Land Use Map contained in the Preparation Notice. The mix of units will be a combination of one and two bedroom units, with the majority of units containing two bedrooms. Improved lots are also being set aside for families belonging to the Heia Kea Community Association, some of whom are in the low- and moderate-income bracket, on the Makana side of the valley as shown on the Development Plan Land Use Map contained in the Preparation Notice.

We thank you for your participation in the EIS review process. Should you have any questions please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

[Signature]
Mr. Brian L. Gray  
Gray, Hong and Associates, Inc.  
119 Merchant Street, Suite 607  
Honolulu, Hawaii 96813

Dear Mr. Gray:

Subject: Supplemental EIS Preparation Notice for Heeia Kea Valley Subdivision, Koolaupoko, Oahu

We have reviewed the subject preparation notice and offer the following comments.

We understand that the proposed Development Plan (DP) Land Use Map amendment will align the DP boundary with the State Land Use Conservation District boundary depicted on Figure 1. According to records at the Land Use Commission, we found that this boundary is apparently based on a 1965 boundary interpretation. At least one subsequent modified interpretation was made in 1966. Accordingly, we recommend that a State Land Use District boundary interpretation be obtained prior to seeking the DP amendment.

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

Very truly yours,

[Signature]

Kent M. Keith

cc: Office of Environmental Quality Control

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 2, 1986

Mr. Kent M. Keith, Director  
State of Hawaii  
Department of Planning and Economic Development  
P.O. Box 2359  
Honolulu, Hawaii 96804

SUBJECT: Heeia Kea Valley  
Preparation Notice for Supplemental Environmental Impact Statement (EIS)

Dear Mr. Keith:

Thank you for your letter dated August 13, 1986 regarding the Preparation Notice for the Supplemental EIS. We have contacted the State Land Use Commission regarding the latest boundary interpretation for the project area. According to their records, the last interpretation was made in 1966. The boundary included in the proposed Development Plan Land Use amendment is also based on the 1964 interpretation. Based on the above, a new boundary interpretation does not appear to be necessary.

Should you have any questions please contact our office.

Very truly yours,

[Signature]

Kent M. Keith
August 22, 1986

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
115 Merchant Street, 8th Floor
Honolulu, Hawaii 96813

Dear Mr. Gray:

Thank you for the opportunity to review and comment on the Preparation Notice for the Supplemental Environmental Impact Statement for Haena Bay Valley.

The Revised Environmental Impact Statement prepared in 1983 states that this development will provide housing in the medium-income price range. Reference has been made that low and moderate cost units will be included in the project. However, the Hawaii Housing Authority would like to recommend specifically that at least ten percent (10%) of the units be targeted for low and moderate income households. A similar request was previously recommended by the City and County of Honolulu, Department of Housing and Community Development.

We ask that we be kept apprised of the development as it progresses. For any further questions, please contact Colette Sakoos of my staff at 848-5224.

Sincerely,

Russell K. Fujimoto
Executive Director

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 2, 1986

Mr. Russell K. Fujimoto
Executive Director
State of Hawaii
Department of Social Services and Housing
P. O. Box 17907
Honolulu, Hawaii 96817

SUBJECT: Haena Bay Valley
Preparation Notice for Supplemental
Environmental Impact Statement (EIS)

Dear Mr. Fujimoto:

Thank you for your letter dated August 22, 1986 regarding the Preparation Notice for the Supplemental EIS. The Supplemental EIS will include a discussion of the developer's intent to price at least ten percent of the housing units for low to moderate income households, in line with the City and County General Plan objectives for housing.

Should you have any questions please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Douglas R. Pisciotta
Executive Director

115 Merchant Street Suite 800 Honolulu, Hawaii 96813
Telephone: (808) 522-1213

X1. A-17

X1. 6-17
Mr. Brian L. Gray
August 19, 1986
Page 2

adversely affect efficient agricultural use of the site. If there is an intent to utilize the area within the proposed Agricultural area, it should be included in the Draft Supplemental EIS.

Thank you for the opportunity to comment.

Sincerely,

[Signature]

Attachment

cc: OEQC

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Subject: Request for Consultation Comments
Supplemental Environmental Impact Statement (EIS) for Heeia Kea Valley
Heeia, Koolau Pk., Oahu
THM: 4-6-06; 3, 2, 4, 7 through 16 and 22 through 51
4-6-16; 51

Dear Mr. Gray:

The Department of Agriculture has reviewed the subject Supplemental Environmental Impact Statement and offers the following comments.

A summary of the proposed amendment, indicates that the development would generally consist of reduced residential densities in both the areas involved and total units to be constructed. The proposed would reduce the current acres for Residential designation from 102 acres to 68.5 and actual units constructed would be scaled back from the current level of 418 to a total of 366. The balance of 33.5 acres remaining would be in the Agricultural designation and is located between the existing preservation and Residential designations. Low Density Apartment and Commercial facilities totaling 51 acres would be developed out of the previously approved Residential area.

Our earlier comments (dated December 7, 1982) concerning the suitability of the project site for agricultural purposes, are attached for your review. We note that some of the soils are better suited for pasture, wildlife habitat, and orchards in the 33.5-acre area proposed for Agricultural designation. Erosion hazards can be severe in areas of steep slope and low water-holding capacity. The location of the proposed Agricultural designation has soil and slope conditions which may

11. A-18
GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

BRIAN L. GRAY, PE
DANIEL K. HONG, PE
DAVID K. HAN, PE
MICHAEL N. NUNAKA, PE
BEVERLY C. MIN, PE
ROBERT E. JONES

September 2, 1986

Mr. Jack Sova, Chairperson
Board of Agriculture
State of Hawaii
Department of Agriculture
P.O. Box 23059
Honolulu, Hawaii 96823-0159

SUBJECT: Nene Kea Valley
Preparation Notice for Supplemental
Environmental Impact Statement (EIS)

Dear Mr. Sova:

Thank you for your letter dated August 19, 1986 regarding the Preparation Notice for the Supplemental EIS. The currently proposed project does not intend to utilize the 32.5 acres of existing agricultural land between the proposed subdivision and the existing preservation land.

Should you have any questions please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

[Signature]

Brian L. Gray

991 MERCHANT STREET SUITE 1004 HONOLULU HAWAII 96813 TELEPHONE: (808) 423-0306
Mr. Brian L. Hong, P.E.
Gray Hong & Associates, Inc.
219 Merchant Street, Suite 607
Honolulu, HI 96813

Dear Mr. Hong:

Subject: Request for Consultation Comments - Supplemental Environmental Impact Statement (EIS) for Heeia Kea Valley, Heeia, Koolau, Oahu

The following concerns must be addressed when preparing the supplemental EIS for the proposed project:

1. Noise emanating from commercial, industrial, and recreational activities may adversely affect adjacent residential areas. Mitigative measures must be incorporated to reduce noise impacts.

2. Stationary equipment, such as air-conditioning units, exhaust fans, pumps, and compressors, must be designed so that noise emanating from such equipment will be in compliance with Title 11, Administrative Rules, Chapter 43, Community Noise Control for Oahu.

3. Military aircraft operations at the Kaneohe Marine Corps Air Station may seriously affect residents of the proposed project.

4. Activities at the Heeia Kea Small Boat Harbor should also be considered as a source of noise affecting future residents.

5. Construction activities must comply with the provisions of Title 11, Administrative Rules, Chapter 43, Community Noise Control for Oahu:
   a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the regulations.
   b. Construction equipment and on-site vehicles requiring an exhaust of gas or air must be equipped with mufflers.

Sincerely,

[Signature]
Deputy Director for Environmental Health

KS/rg
4. The Supplemental EIS has been revised to include the identification of Neiia Koa Small Boat Harbor as a source of noise potentially impacting subdivision residents.

5. The Supplemental EIS will note that the contractor must comply with Chapter 45, Community Noise Control for Oahu and Chapter 47, Vehicular Noise Control for Oahu, in an effort to mitigate construction noise impacts on existing Neiia Koa residents.

Should you have any questions please contact our office.

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

[Signature]

Brian L. Gray
September 2, 1986
Page Two
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (EIS)
Preparation Notice for Heeia Kea Valley
Heeia, Kualapu‘u, Oahu

Per your July 22, 1986 request for consultation comments, the Department of Land Utilization (DLU) offers the following:

1. The Department of General Planning (DGP) and the DLU will act jointly as accepting authorities. DGP is currently considering a request to amend the Kualapu‘u Development Plan to accommodate this project. The DLU previously accepted the original EIS on the project. The DGP will act as lead in processing the Supplemental EIS.

2. The section on the use of public funds or lands should be revised to indicate the degree of developer commitment to fund off-site sewerage improvements.

3. Are there any future plans for the creation of a small-boat marina or any other ocean-based facility at the site?

4. Was there any consideration given to the use of part of the site for emergency electrical generation to provide power to Windward Ohu should the trans-ocean transmission lines be severed for extended time periods?

Should you have any questions, please contact Bennett Mark of our staff at 527-5035.

Very truly yours,

John P. Whalen
Director of Land Utilization

September 2, 1986

BRIAN L. GRAY, PE
GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

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

SUBJECT: Heeia Kea Valley
Preparation Notice for Supplemental
Environmental Impact Statement (EIS)

Dear Mr. Whalen:

Thank you for your letter dated August 31, 1986 regarding the Preparation Notice for the Supplemental EIS.

We are providing the following responses to your comments:

1. The Supplemental EIS will identify Department of General Planning and DLU as the joint接受ing authorities for the EIS.

2. There are no plans to use public funds or lands for off-site sewerage improvements. The developer will be funding the installation of the two sewer lift stations. Force mains, which will be dedicated to the City, will also be installed at the developer’s expense.

3. There are no plans to create a small boat marina or ocean-based facility at the site. The proposed commercial/industrial area, however, will make available harbor-fast land in support of the existing Heeia Kea pier facility.

4. No consideration has been given to emergency generation at the site.

Should you have any questions please contact our office.

Very truly yours,

Brian L. Gray
GRAY, HONG & ASSOCIATES, INC.
August 12, 1986

Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
Consulting Engineers
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

SUBJECT: REQUEST FOR CONSULTATION COMMENTS
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR HENIA KAA VALLEY
HEEIA, Koolau, Oahu

Thank you for the opportunity to review and comment on the subject EIS/EA.
Current fire protection is provided as follows:

<table>
<thead>
<tr>
<th>STATION/COMPANY</th>
<th>DISTANCE</th>
<th>RESPONSE TIME</th>
<th>PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaneohe (Engine Co. 17)</td>
<td>3.0</td>
<td>6 minutes</td>
<td>5</td>
</tr>
<tr>
<td>Kahalu (Engine Co. 37)</td>
<td>3.2</td>
<td>6 minutes</td>
<td>5</td>
</tr>
<tr>
<td>Kaliua (Ladder Co. 18)</td>
<td>10.1</td>
<td>17 minutes</td>
<td>6</td>
</tr>
</tbody>
</table>

Two engines and one ladder are the standard dispatch for all reported structure fires outside the Waialae and metropolitan Honolulu area. Existing fire protection is considered barely adequate for the proposed project in regards to distance and response time. Current Insurance Services Office (ISO) guidelines recommend a standard response distance of not more than four miles for engine and ladder companies (a ladder company may not be required where there are less than five buildings of three or more stories). A response time of three to five minutes is acceptable.

Should you have any questions, please contact Captain Henry Kahekahi of our Administrative Services Bureau at 943-3845.

Sincerely,

[Signature]

LIONEL T. CAUPA
Acting Fire Chief

LIC:199X:150

XII. A-21

September 2, 1986

Mr. Frank Kahunahaua
Fire Chief
Fire Department
City and County of Honolulu
1453 South Beretania Street, Ste. 305
Honolulu, Hawaii 96814

SUBJECT: Hensia Kaa Valley
Preparation Notice for Supplemental Environmental Impact Statement (EIS)

Dear Mr. Kahunahaua:

Thank you for your letter dated August 12, 1986 regarding the Preparation Notice for the Supplemental EIS. The information that you provided will be included in the Supplemental EIS. Since the currently proposed project will not include buildings three or more stories, the requirement for ladder assistance will not exist.

Should you have any questions please contact our office.

Very truly yours,

Brian L. Gray
GRAY, HONG & ASSOCIATES, INC.
August 21, 1986

Mr. Brenner Munger
Gray, Hong & Associates, Inc.
Consulting Engineers
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Munger:

Subject: Supplemental Environmental Impact Statement
for Maeda Site Valley

We have reviewed the above subject and have no comments.

Sincerely,

Brennan Munger

Mr. Brennan Munger
Manager, Environmental Department
Hawaiian Electric Company, Inc.
P. O. Box 2750
Honolulu, Hawaii 96814-0001

September 2, 1986

Mr. Brennan Munger
Manager, Environmental Department
Hawaiian Electric Company, Inc.
P. O. Box 2750
Honolulu, Hawaii 96814-0001

SUBJECT: Maeda Kea Valley
Preparation Notice for Supplemental
Environmental Impact Statement (SII)

Dear Mr. Munger:

Thank you for your letter dated August 21, 1986 regarding the Preparation Notice for the Supplemental EIS. Your participation in the EIS review process is appreciated.

Should you have any questions please contact our office.

Very truly yours,

Gray, Hong & Associates, Inc.

Brian L. Gray, PE

1391-1
August 10, 1986

Mr. Brian L. Gray, PE
Gray, Hong and Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Request for Consultation Comments
Supplemental EIS for Heeia Kea Valley
Heeia, Oahu

The proposed Heeia Kea Subdivision is located in the immediate proximity of the Heeia Kea Boat Harbor. The harbor currently provides permanent moorings and three boat launching lanes which are extensively utilized particularly during weekends and holidays. Since there are plans to expand the harbor and thus increase residential traffic with many boat traffic at the entrance to the harbor. It should be noted that the existing traffic condition is not ideal at this location and the traffic increases generated by both the harbor expansion and the project site will tend to deteriorate the situation unless remedial action is planned.

Accordingly, we look forward to reviewing the traffic impact analysis report for this development. Special interest should be directed to the intersection at the harbor entrance with serious traffic measures such as providing turning movement storage and acceleration/deceleration lanes.

Thank you for this opportunity to provide comments.

Very truly yours,

Wayne J. Yamazaki
Director of Transportation

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 2, 1986

Mr. Wayne J. Yamazaki
Director of Transportation
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

SUBJECT: Heeia Kea Valley
Preparation Notice for Supplemental
Environmental Impact Statement (EIS)

Dear Mr. Yamazaki:

Thank you for your letter dated August 10, 1986 regarding the Preparation Notice for the Supplemental EIS. The proposed development will have two main intersections with Kamehameha Highway. One intersection will be approximately 1,500 feet north of the entrance to Heeia Kea Boat Harbor and the other will be directly south of this entrance. As presented in the 1983 Environmental Impact Statement, both intersections are proposed with acceleration and deceleration lanes for south-bound traffic and a left turn storage lane into the project site. These improvements were proposed to mitigate the impact of increased traffic generated at the project site.

The Supplemental EIS will identify similar plans for both intersections. However, left turn storage into Heeia Kea Boat Harbor will be identified as an additional mitigation measure for traffic utilizing the harbor complex. Detailed plans for the intersection will be coordinated with your department during the development process. The key elements necessary to mitigate traffic impacts, as suggested in your consultation letter, will be provided in the text of the Supplemental EIS.

Your consultation comments, as well as our response, will be incorporated in the Supplemental EIS.

Should you have any questions please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray, PE
Daniel B. Hong, PE
Michael C. Wada, PE
Robert A. Adams
July 28, 1986

Mr. Brian L. Gray
Gray, Wong & Associates, Inc.
Consulting Engineers
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

This is in response to your request for consultation comments on a Supplemental Environmental Impact Statement (EIS) for Heeia Kea Valley, Kualapu, Oahu.

We have reviewed the subject preparation notice and offer the following comments:

1. The Supplemental EIS should update your previous traffic study, including current traffic counts and analysis of the projected impact from this residential, industrial and commercial development. The intersection of Kamakahana Highway with Haleiwa Road and Liliopuna Road should not be analyzed using current traffic figures and projections, particularly since the previously projected P.M. critical lane volume was just 70 vehicles below the recommended maximum.

The supplemental EIS should also consider the traffic impact of the development on downstream facilities such as Kamakahana Highway, Kahului Highway and Wailua Highway. The timing of any proposed improvements to these highways and the Kahului/Wailua interchange should be discussed in relation to the timing of the proposed Heeia Kea Valley development. Developer provided traffic improvements should also be discussed. The configuration of the proposed intersection providing access to the project in the vicinity of the entrance to the Heeia Kea Boat Harbor should be designed to accommodate traffic from the Boat Harbor. The State Department of Transportation should be consulted on this matter.
GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 2, 1986

BRIAN L. GRAY, PE
DANIEL E. HONG, PE
DAVID R. KIN, PE
MICHAEL W. HENRY, PE
BEVERLY Y. HUNG, PE
JOSEPH R. JONES

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

SUBJECT: Kea Kae Valley
Preparation Notice for Supplemental Environmental Impact Statement (EIS)

Dear Mr. Clegg:

Thank you for your letter dated July 28, 1986 regarding the Preparation Notice for the Supplemental EIS. In response to your comments, we are providing the following information:

1. The Supplemental Environmental Impact Statement will update the traffic analysis for Kamehameha Highway in front of the project and downstream intersections including Liliuokalani Road/Kamehameha Highway and Kahului Highways/likeike Highway. The most current traffic counts will be utilized to update the conflicting movement analysis for the Liliuokalani Road/Kamehameha Highway intersection which was previously included in the 1983 EIS. Since the preparation period of the Draft Supplemental EIS is occurring during the summer period when schools are not in session, 1983 traffic counts have been utilized at this intersection as obtained by the Department of Transportation Services. The previously prepared EIS utilized traffic counts obtained by the Department of Transportation Services in 1983.

The 1983 EIS provided a brief discussion of regional traffic impacts. It is still believed that it is beyond the scope or ability of one particular project to provide a detailed analysis of the regional traffic consideration. This is especially true since large government agencies, including the State of Hawaii Department of Transportation, as well as the City and County of Honolulu Department of Transportation Services, have devoted considerable effort to developing regional traffic plans. The Supplemental EIS will identify the current plans to improve regional traffic as presented by the State of Hawaii Department of Transportation and the City and County of Honolulu Department of Transportation Services. Both agencies state that there are plans available to increase the amount of peak hour traffic moving from Windward Oahu to Leeward Oahu. The State of Hawaii Department of Transportation plan for accommodating increased trans-Koolau traffic is, and has been since the early 1970's, the completion of the N-3 freeway system.

2. With respect to regional considerations within Windward Oahu, both the City and County and the State identify three specific projects which will mitigate regional traffic congestion which presently occurs, as well as future congestion resulting from increased development within Windward Oahu. These projects are: improvements to Castle Junction Intersection, improvements to the Kahului Highway/likeike Highway intersection, and widening of Kahului Highway to Kamehameha Highway. These regional traffic considerations will be identified in the Supplemental EIS.

With respect to timing, any improvements to the trans-Koolau corridor are presently tied to the disposition of the N-3 freeway system. It is the State's position that regional improvements within Windward Oahu such as the Castle Junction Interchange, Kahului Highway/likeike Highway interchange and Kamehameha Highway widening are subject to modification until the outcome of the N-3 freeway is resolved. Therefore, it is difficult to predict when actual improvements could occur. This fact will also be presented in the Supplemental EIS.

The State of Hawaii Department of Transportation has provided consultation comments with respect to the Kea Kae Small Boat Harbor. This department has suggested the use of acceleration/deceleration lanes and dual turn storage lanes to mitigate traffic congestion at the small boat harbor entrance resulting from increased traffic. The 1983 EIS identified these types of improvements at this intersection and the current proposal will also identify similar improvements.

With respect to the project's water requirements. The average daily flow, peak flow, fire flow and storage requirements have all been identified based on the current development plans. In reality, the design parameters are essentially identical to that which was presented in 1983. One exception is that Industrial/Commercial and Low-density apartment districts all require larger fire flow than identified in 1983. The larger fire flow will result in small portions of the on-site transmission system having 12" lines rather than 8" lines as reported in 1983. These facts will be presented in the Supplemental EIS.

Y10 MERCHANT STREET, SUITE 830, HONOLULU, HAWAII 96813 - TELEPHONE 808-527-0000

11. 8-24
3. The current proposal for accommodating the existing tenants of the Kea Kea Valley project site is to set aside a portion of the development area for these residents. The proposed Development Plan Land Use Map provided in the Prehearing Notice will also be included in the Supplemental EIR. This map identifies the general area which will be set aside as a relocation site for Kea Kea Community Association residents should the project be developed. Agreements exist with the ten families to provide them improved lots for $10,000 each in the designated area. Relocation assistance has been offered to the eleventh family but no response has been received.

4. The proposed plan for sewer improvements includes the installation of two sewage pump stations and a force main connecting the project site to the existing City and County of Honolulu sewer system. The size of the proposed sewage pump station will be in excess of the capacity required for the subject project and will be sufficient to meet regional considerations. When this plan is implemented, there will be sufficient sewage pumping capacity for existing developments, including Kea Kea State Park and Kea Kea Small Boat Harbor. Preliminary discussions have been held with the Department of Public Works regarding sewer improvements with respect to the project. Continued discussions will be held during the development process. This information will also be provided in the Supplemental EIR.

Your consultation comments as well as our response will be included in the Supplemental EIR.

Very truly yours,

GRAY, HOW & ASSOCIATES, INC.

[Signature]

Brian L. Gray

EIR 1984-1
Gray, Heng & Associates, Inc.
519 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Re: Supplemental Environmental Impact Statement for Heela Kea Valley
Heela, Koolaupoko, Oia

The Conservation Committee for the Honolulu Group of the Sierra Club
have consistently expressed the following concerns re Heela Kea.

I. The proximity to the shoreline of Kaneohe Bay

The development is not coastal dependent, with the exception of the
small commercial area which proposes to supply the users of the Pier.
We are particularly concerned with the pollution of Kaneohe Bay,
especially the dilution potential and highway run-off of the
development. Although the plans for mitigation of these effects were
discussed and accepted in the original EIS, the Sierra Club was not
satisfied that the solutions would protect Kaneohe Bay sufficiently.

II. Cumulative impacts on the CZM.

This is prime consideration of the CZM Law. The cumulative impact
of such a large development on the well-established and popular pier
be a serious consideration.

The cumulative impact on an already busy highway is of even more
concern. Any improvement in the Po'ipu-Ko'olina system will not
mitigate the traffic problems on Ko'olina Hwy. There seems to be no plan
to widen the Long Bridge, nor to correct the curve between the proposed
development and the bridge. Are the developers willing to construct
their own connecting roadway to Kaneohe Highway?

With regards to the cumulative population impacts, according to the
anticipated population growth, Windward Oahu has a sufficient amount
of urban designated land without filling this CZM parcel with housing.

III. Available water supply

The aquifer in Kailua is reaching its carrying capacity, as evidenced by the
constant request to conserve water. Will the water for this
development be granted at the expense of drying up the remaining
stream systems on Oahu? At present, the Board of Water Supply
have not guaranteed the effect on the streams of their present Windward
Oahu Development Plan. Are the developers of this proposal willing to install a de-
salinization plant to satisfy their water needs?

The proposed changes to the original EIS in no way lessen Sierra
Club's concerns.
GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

September 2, 1986

Mr. Gary J. Andersen, Chair
Sierra Club, Hawaii Chapter
Honolulu Group
P. O. Box 11070
Honolulu, Hawaii 96826

SUBJECT: Naiea Rea Valley
Preparation Notice for Supplemental
Environmental Impact Statement (EIS)

Dear Mr. Andersen:

Thank you for your letter dated August 21, 1986 regarding the Preparation Notice for the Supplemental EIS. We are providing the following responses to your comments:

1. Proximity to the shoreline of Kaneohe Bay

   Your letter expresses concern with respect to pollution of Kaneohe Bay. No efforts were discussed as a part of the 1983 EIS. We believe the pollution problems stated in the letter are not significant. The primary impacts on the bay will be during construction when runoff carrying seawater silt loads can occur. This will be mitigated by utilization of temporary erosion control measures such as siltation basins.

2. Cumulative impacts on the CNR Area

   The primary impact of the proposed project on the Naiea Small Boat Harbor will be traffic. As presented in the 1983 EIS, intersections for the proposed project will utilize acceleration and deceleration lanes as well as left turn storage lanes. These features will mitigate traffic congestion at the site entrance. The State of Hawaii Department of Transportation has signed a memorandum with the CNR and has suggested implementation of features including acceleration and deceleration lanes as well as left turn storage lanes to offset traffic impacts.

   Both the State of Hawaii Department of Transportation and the City and County of Honolulu Department of Transportation Services have plans to widen Kahului Highway from the Likelike/Kahului Highway intersection to Kamehameha Highway. Implementation of this project is partly tied to the disposition of the H-3 Freeway system, since improvements to the Kahului Highway/Likelike Highway intersection are dependent on the same improvements to the H-3 Freeway system. As soon as the Kahului widening project is completed, it is anticipated that there will be a reduction of traffic on Kamehameha Highway. There are no plans to construct a connecting roadway from the project to Kahului Highway.

   The cumulative impacts of development within Naiea Rea Valley were also discussed as a part of the 1983 EIS. These impacts will be summarized in the Supplemental EIS. However, no additional details with respect to cumulative impacts will be included in the Supplemental Document.

   It is recognized that some segments of the population would prefer to see the Valley developed in other fashions. To an extent the Valley's potential, an agricultural feasibility study was completed and included in the 1983 EIS. The feasibility study suggested that the chances for successful farming are only marginal. For that reason, other options are being pursued by the current owners.

3. Available water supply

   There is adequate ground water available on Oahu to serve the proposed project as well as additional growth. Design flows and requirements are developed and submitted to the Board of Water Supply for review. The review process ensures that the existing and future water consumption rates do not exceed the sustainable yield of the island's ground water system.

   Your consultation comments as well as our responses will be included in the Supplemental Environmental Impact Statement.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

93-19 Maile Avenue
Kailua, Hawaii 96734

Tel: 808-293-1920
Fax: 808-293-1926

[Handwritten Signature]
Hui Kahanamoku would like to see the following issues included in the Supplemental Impact Statement for Proposed Development at Haina Ex. Valley, Oahu:

- Shoreline Management - How will this project not only comply with but also enhance coastal zone laws?
- Housing - What are the housing needs in the Kapolei, Kauai area by income, and how will this project meet these needs?
- Whole Valley Planning - What are the plans for the rest of the property? An agricultural assessment should be done indicating the best ag lands within the property. A feasibility study of potential ag use should also include an assessment of the demand for ag lands.
- City Planning - How will this project conform with the General Plan and the Development Plan. Given the number of recently planned Windward housing projects, how would this project contribute to the cumulative impacts of all the projects on traffic, water, schools and public facilities?
- Pier - What will the impact be on existing users of the pier?

Charles Kepana
Hui Kahanamoku Keiki

99-90 Lulani St.
Manoalii 96734
With respect to economic uses, it would be fair to state that providing suitable residential areas is important to the State's economy.

The project will have an impact on coastal ecosystems as identified in the previous EIR. This statement will also be reiterated in the Supplemental EIR. However, it will also be stated that the impact on coastal ecosystems is not considered to be significant. This statement is based on the fact that the project site represents less than 1/10 of 1% of the drainage basin entering Kaneohe Bay. From a cumulative viewpoint, the amount of additional land that could be developed within this watershed is far less than that which has already been developed.

With respect to coastal hazards, there will be some resulting from tides, storm waves or stream flooding. Coastal flooding resulting from erosion will not occur.

Finally, with respect to managing development, the EIS process is one of those review processes which stimulate public participation. This particular project will also require additional public review during the Development Plan Amendment proceedings and during the Change of Zone proceedings.

2. Housing

The 1983 EIR provided a study regarding housing in the Windward Oahu area. This study has been updated and will be included in the Supplemental EIR. It is reported that there is a strong demand to meet housing needs.

3. Whole Valley Planning

The Development Plan Land Use Map contained in the Preparation Notice essentially identified whole valley planning. This map will also be included in the Supplemental EIR. With respect to agricultural feasibility, a study was prepared in conjunction with the 1983 EIR. The likelihood of sustaining agricultural operations on the site is reduced significantly by the fact that there is no economical and permanent source of water available. As indicated in the Preparation Notice, a feasibility study regarding agriculture operations will be included in the Supplemental EIR. Preliminary indications are that agriculture is not particularly feasible due to fresh water and salt water requirements.

FRANK HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

Mr. Charles Reppun
September 3, 1986

Page Two

Mr. Charles Reppun

Kaula Mauane Aloha O'Keenau
47-101 Hualani Street
Kaneohe, Hawaii 96744

SUBJECT: Heiau Koe Valley
Preparation Notice for Supplemental
Environmental Impact Statement (SEIS)

Dear Mr. Reppun:

Thank you for your letter dated August 21, 1986 regarding the Preparation Notice for the Supplemental EIR. The following responses are being provided to the comments in your letter.

1. Shoreline Management

The 1983 EIR was prepared in conjunction with a Special Management Permit application for development of the site. In conjunction with that permit application, the EIR discussed the Shoreline Management objectives which are considered essentially the same today. Additional detailed discussion of Special Management Area objectives, including Coastal Zone objectives and policies, is not proposed for inclusion in the Supplemental EIR. However, a discussion of Coastal Zone objectives is provided below.

The Coastal Zone Management Program (CZM) identifies seven areas of concern: recreational resources, historic resources, scenic and open space resources, economic uses, coastal ecosystems, and coastal hazards. Discussion of the project's compliance to CZM policies is as follows:

With respect to recreational resources, the project will be made up of Kaneohe Bay and the project should have no significant direct impact on coastal recreational activities. The project will also provide a 3.5 acre park intended to be dedicated to the City for public recreation.

With respect to archaeological resources, an archaeological reconnaissance was conducted on the site in 1983 to identify natural, mummified, historic and prehistoric resources in the Coastal Zone Management Area. With respect to scenic and open space resources, the project will be made up of Kaneohe Bay and will not disrupt general public views to the ocean. A 12 acre landscape buffer strip is proposed along Kaneohe Bay to mitigate visual impact of the project from the road.

151 MERCHANT STREET, SUITE 201, HONOLULU, HAWAII 96813 - TELEPHONE (808) 521-0036

2. Housing

The 1983 EIR provided a study regarding housing in the Windward Oahu area. This study has been updated and will be included in the Supplemental EIR. It is reported that there is a strong demand to meet housing needs.

3. Whole Valley Planning

The Development Plan Land Use Map contained in the Preparation Notice essentially identified whole valley planning. This map will also be included in the Supplemental EIR. With respect to agricultural feasibility, a study was prepared in conjunction with the 1983 EIR. The likelihood of sustaining agricultural operations on the site is reduced significantly by the fact that there is no economical and permanent source of water available. As indicated in the Preparation Notice, a feasibility study regarding agriculture operations will be included in the Supplemental EIR. Preliminary indications are that agriculture is not particularly feasible due to fresh water and salt water requirements.
Mr. Charles Rappun
September 2, 1986
Page Three

4. City Planning -

A section within the Supplemental EIS will reference various sections of the General Plan and describe how the proposed project conforms to those objectives. Traffic, water, schools and public facilities were all discussed in the 1983 EIS and specific emphasis will be placed on updating traffic information within the Supplemental EIS.

5. Pier -

The only potential significant impact to existing uses of the Kealii Small Boat Harbor will be traffic as related to its entrance. This entrance will coincide with one of the project's two main intersections. However, the project proposes to install acceleration and deceleration lanes and left turn storage lanes to mitigate these traffic impacts. The use of these features has been suggested by the State of Hawaii Department of Transportation. This agency will be involved in coordination activities during the development process.

Should you have any questions please contact our office.

Very truly yours,

GRAY, BONG & ASSOCIATES, INC.

[Signature]

Brian L. Gray
XII. LIST OF NECESSARY APPROVALS

A. Federal Government

Compliance with nation-wide General Department of the Army Permit*

B. State of Hawaii

1. Department of Health – Noise Permit, Construction Plan Approval

2. Department of Land and Natural Resources – Conservation District Use Permit*

C. City and County of Honolulu

1. City Council – Special Management Area Use Permit Shoreline Setback Variance*

2. Department of Land Utilization – Subdivision Approval, Construction Plan Approval

3. Department of Public Works – Grading Permit, Construction Plan Approval

4. Department of Transportation Services – Construction Plan Approval

5. Board of Water Supply – Construction Plan Approval

6. Department of Parks and Recreation – Construction Plan Approval

D. Private

1. Hawaiian Electric Company – Construction Plan Approval

2. Hawaiian Telephone Company – Construction Plan Approval

*These approvals are listed but not anticipated as being necessary and are subject to the processing of a Drainage Report with the City and County of Honolulu. Approvals relate to the need for box-culvert improvements within Kamehameha Highway.
XIII. ORGANIZATIONS AND PERSONS INVOLVED IN THE PUBLIC REVIEW PERIOD

Included within this section are all comments received during the thirty (30) day review period, as well as the responses to the comments. The review comments have resulted in changes to the text of the Draft Supplemental EIS as summarized below.

1. Board of Water Supply's Facilities Charges for source-transmission have been revised.

2. Information regarding the existing water supply system currently planned to be connected to has been clarified.

3. The reference regarding aircraft noise has been updated.

4. Information regarding the number of archaeological sites identified during the 1982 survey and the action to be taken with respect to these sites has been clarified.

5. Information regarding the current planning objectives of the City & County of Honolulu Department of Public Works, Wastewater Management Division regarding the wastewater pump stations to be built near "long bridge" and on-site have been discussed.

6. With respect to traffic, it has been determined that the traffic volumes at the Haiku Road/Lilipuna Road/Kamehameha Highway intersection have remained relatively stable and no major peak hour volume reduction occurred between 1982 and 1983.
7. Projected average daily and peak sewer system flows have been revised.

8. Acreage of land preserved for agricultural use under the current proposal has been clarified.
Mr. Donald A. Clegg  
Chief Planning Officer  
Department of General Planning  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813  

Re: Supplemental EIS for Heiau Kea Valley, Heiau, Koolaupoko, Oahu  

Dear Mr. Clegg:  

The Service has reviewed the subject document and has no further comments to offer at this time. Thank you for providing this opportunity to comment.  

Sincerely yours,  

Ernest Rosaka  

Ernest Rosaka  
Project Leader  
Office of Environmental Service  

cc: DLH (Mr. Whalen)  
Gray, Hong & Associates, Inc.  

GRAY, HONG & ASSOCIATES, INC.  
CONSULTING ENGINEERS  

Mr. Ernest Rosaka, Project Leader  
Office of Environmental Services  
United States Department of the Interior  
Fish & Wildlife Service  
P.O. Box 50167  
Honolulu, Hawaii 96850  

SUBJECT: Heiau Kea Valley  
Draft Supplemental Environmental Impact Statement (EIS)  

Dear Mr. Rosaka:  

Thank you for your letter dated September 16, 1986. Your letter will be incorporated into the Revised Supplemental EIS.  

Should you have any questions, please contact our office.  

Very truly yours,  

GRAY, HONG & ASSOCIATES, INC.  

Mr. Brian L. Gray  

300 Ala Moana Boulevard  
Honolulu, Hawaii 96813  

TELEPHONE: 808-537-1000  
XIII. A-1  

Save Energy and You Serve America!
October 8, 1986

TO: JOHN P. WILKEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

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

SUBJECT: SUPPLEMENTAL EIS FOR UKEIA KEA VALLEY

Thank you for the opportunity to review and comment on the proposed development. We have the following comments:

1. Page 65, lines 21-25: The sentence should be revised to read: "The developer will be required to pay the Board of Water Supply's prevailing Water System Facilities Charges for source-transmission." Information on the charges may be obtained by contacting our Customer Service Division.

2. Page 66, lines 4-6: The 6-inch pipeline passing the property along Kamahameha Highway is part of our Wailea 265-Coot system. The hook-up point for the development's water system will be determined when the Water Master Plan is submitted for our review and approval.

3. Page 66, lines 13-15: The developer will have to pay our Water Facilities Charges for source and transmission and install a 0.3 million gallon reservoir. For the single family residential units of this development, the present charges are $323.00 for a 5/8-inch meter and up to $4,104.00 for a 2-inch meter. However, the developer will be required to pay the prevailing charges when water meters are installed for the development. The charges mentioned in the report are incorrect.

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

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

cc: DAVID HILLS (Gray, Hong & Assoc., Inc.)
Mr. Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96813

October 16, 1985

Mr. Kazu Hayashida

Dear Mr. Hayashida:

We have received a copy of your August 9, 1985 memorandum to John P.
Whalen, Director, Department of Land Utilization regarding the Draft
Supplemental EIS. We are providing the following responses to your memo:

1. The Supplemental EIS will be revised to clarify that the
developer will be required to pay the prevailing water system
facilities charges for source-transmission.

2. The EIS will be revised to indicate that the Punalu'u 272-foot
system is currently a possible water supply source for the
proposed development. If the first hook-up point for the development
will be determined when the Water Master Plan is submitted for your review and
approval. Reference to connection to the existing water line along Kahaluu Highway
will be deleted from the EIS.

3. The EIS states that the project requires 0.3 million gallon
storage capacity. As confirmed with your office, the decision as
to whether the 0.3 million gallon storage will be provided by the
developer on-site or in conjunction with another reservoir
project off-site is still open and will be reported accordingly.

Facilities charges for source and transmission will be updated as
per your comment No. 3. A statement will be included to clarify
that the developer will be required to pay the prevailing charges
when water meters are installed.

Should you have any questions, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

[Signature]

Brian L. Gray
TO: DONALD A. CLEGG, CHIEF PLANNING OFFICER  
DEPARTMENT OF GENERAL PLANNING  

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

SUBJECT: SUPPLEMENTAL EIS FOR NEIA KEA VALLEY  

We have reviewed the subject document and find that we have no comment to offer at this time.

[Signature]

DOUGLAS G. GIBB  
Chief of Police  

cc: John Whalen, Director Land Utilization  
Department of Land Utilization  
City and County of Honolulu  

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

Mr. Douglas G. Gibb, Chief  
Honolulu Police Department  
City and County of Honolulu  
1455 South Beretania Street  
Honolulu, Hawaii 96814  

SUBJECT: Neia Kea Valley  
Draft Supplemental  
Environmental Impact Statement (EIS)  

Dear Mr. Gibb:  

We have received a copy of your September 17, 1986 memorandum to Donald A. Clegg, Chief Planning Officer, Department of General Planning regarding the Draft Supplemental EIS. Your memorandum will be incorporated into the Revised Supplemental EIS.

Should you have any questions, please contact our office.

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

[Signature]  

110 MERCHANT STREET SUITE 607 HONOLULU HAWAII 96813  
TELEPHONE 808-537-8306  
XIII, B-2
TO: DONALD A. CLEGG, CHIEF PLANNING OFFICER  
DEPARTMENT OF GENERAL PLANNING  

FROM: TOM T. NAKOTA  

SUBJECT: DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT  
HIEA KEA VALLEY DEVELOPMENT  
FNN: 10-06-16 AND 10-06-16  

We have reviewed the Draft Supplemental EIS for the Hiea Kea Valley Development and make the following comments:

- We have determined that the report is generally acceptable. The recreational needs of the project have been addressed by the establishment of a 3.5-acre park which will also be used to comply with the Park Dedication Ordinance requirements.
- Although the park has been included in the project's master plan, we have advised the applicant that the area is the City for park purposes must meet City standards and park dedication requirements. The city has also been made aware that it will be necessary to coordinate the planning of the location, configuration, and suitability of the 3.5-acre park with our department as soon as possible.

Thank you for the opportunity to review and comment on the supplemental EIS.

TOM T. NAKOTA, Director

cc: Gray, Hong and Associates, Inc.
September 17, 1986

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

Dear Mr. Clegg:

Thank you for the opportunity to review and comment on the Draft Supplemental EIS for Kea Kea Valley, Heeia, Koolau, Pahu, dated September 5, 1986. The following comments are offered:

a. A Corps of Engineers permit will be required for this project if drainage improvements are constructed below the Mean Higher Water Line (MHWL). If such construction is to be performed, our Operations Branch (telephone 438-9258) should be contacted for permit requirements.

b. The flood hazards have been addressed on page 14 of the report covering the affected environment. The proposed development is located in Zone D, an area of undetermined, but possible flood hazards.

Sincerely,

Kiau Keung
Chief, Engineering Division

Copies Furnished:
Mr. David B. Bills
Gray, Hong and Associates, Inc.
115 Merchant Street, Suite 607
Honolulu, Hawaii 96813

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

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

October 16, 1986

Mr. Kiau Keung
Chief, Engineering Division
Department of the Army
U.S. Army Engineer District, Honolulu
Ft. Shafter, Hawaii 96856-5440

SUBJECT: Kea Kea Valley
Draft Supplemental Environmental Impact Statement (EIS)

Dear Mr. Keung:

Thank you for your letter dated September 17, 1986 regarding the Draft Supplemental EIS.

We do not foresee the requirement for Department of the Army permits for this project since all drainage improvements are to be constructed above the Mean Higher Water Line (MHWL).

Your letter will be incorporated into the Revised Supplemental EIS.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.
MEMO TO: MR. DONALD A. CLEGG, CHIEF PLANNING OFFICER
DEPARTMENT OF GENERAL PLANNING

FROM: HERBERT R. MURAKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT SUPPLEMENTARY EIS FOR KEHA KEA VALLEY

September 29, 1984

We have reviewed the draft supplementary EIS for the Keha Kea Valley and have no comments.

Thank you for the opportunity to review the document.

Herbert R. Muraka
Director and Building Superintendent

cc: J. Harada
Gray, Hong & Assoc., Inc.

MEMO TO: MR. DONALD A. CLEGG, CHIEF PLANNING OFFICER
DEPARTMENT OF GENERAL PLANNING

FROM: HERBERT R. MURAKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT SUPPLEMENTARY EIS FOR KEHA KEA VALLEY

October 16, 1984

We have reviewed a copy of your September 29, 1984 memorandum to Donald A. Clegg, Chief Planning Officer, Department of General Planning, regarding the Draft Supplemental EIS. Your memorandum will be incorporated into the Revised Supplemental EIS.

Should you have any questions, please contact our office.

Very truly yours,

Brian L. Gray

Gray, Hong & Associates, Inc.
Mr. John P. Whalen, Director
Department of Land Utilization
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Subject: Supplemental Environmental Impact Statement - Heeia Kea Valley

TNR: 4-6-6: 1-3, 7-16, 22-51; 6-6-16: 32
Area: 60.5 Acres
Ownership: Bishop Estate
Proposal: To develop 310 single-family units and 50 low-density apartments; industrial land (4 acres); and commercial (1 acre) at Heeia Kea, Oahu.

Thank you for the opportunity to review and comment on the proposed Heeia Kea Valley project.

The Department of Housing and Community Development is mandated to provide housing units for the low- and moderate-income families on Oahu. We are happy to note that the developer has made a commitment to provide at least 50 percent of the units for the low- and moderate-income households.

If you have any questions, please contact Mr. James Miyagi of our Housing Division at 633-4394, who will assist the developer in formulating a program to provide these units.

We will retain the EIS report for our files.

Sincerely,

[Signature]

cc: Gray Hong and Associates, Inc.
The Honorable Ronald A. Clegg
Chief Planning Officer
Department of General Planning
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Clegg:

Subject: Draft Supplemental EIS for Heeia Kea Valley, Kualapuu, Oahu

We have reviewed the subject draft supplemental environmental impact statement (EIS) and find it has adequately discussed the probable impacts of the current proposed project.

Thank you for the opportunity to review the subject document.

Very truly yours,

Muneo F. Tanida
Sent M. Keith

cc: Office of Environmental Quality Control
Mr. David B. Mills
Gray, Hong & Associates, Inc.

Mr. Kent N. Keith, Director
State of Hawaii
Department of Planning and Economic Development
P. O. Box 2359
Honolulu, Hawaii 96804

SUBJECT: Heeia Kea Valley
Draft Supplemental
Environmental Impact Statement (EIS)

Dear Mr. Keith:

Thank you for your letter dated December 1, 1985 regarding the Draft Supplemental EIS. Your letter will be incorporated into the Revised Supplemental EIS.

Should you have any questions, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Mr. Kent N. Keith
Department of Planning and Economic Development
P. O. Box 2359
Honolulu, Hawaii 96804

SUBJECT: Heeia Kea Valley
Draft Supplemental
Environmental Impact Statement (EIS)

Dear Mr. Keith:

Thank you for your letter dated December 1, 1985 regarding the Draft Supplemental EIS. Your letter will be incorporated into the Revised Supplemental EIS.

Should you have any questions, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Mr. Kent N. Keith
Department of Planning and Economic Development
P. O. Box 2359
Honolulu, Hawaii 96804
October 9, 1986

Mr. Donald A. Clegg
Chief Planning Office
Department of General Planning
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Clegg:

Thank you for the opportunity to review and comment on the Draft Supplemental Environmental Impact Statement for Heeia Kea Valley, Keaau, Oahu.

We do not have any further comments at this time. However, we request to be kept appraised of the development of the project.

For any further questions, please contact Collette Sakoda of my staff at 848-3226.

Sincerely,

BURELL M. FUKUMOTO
Executive Director

CC: Mr. John P. Whalen, Director
Dept. of Land Utilization

Mr. David B. Bills
Gray, Hong and Associates
Mr. Donald A. Clegg  
October 1, 1986  
Page 1

feel the project will not adversely affect the agricultural resources of the area nor the plans, programs and activities of the Department of Agriculture.

Thank you the the opportunity to comment.

JACK K. SUMA  
Chairman, Board of Agriculture

cc: Mr. John P. Whalen  
Mr. David B. Bills

To: Mr. Donald A. Clegg  
Department of General Planning  
City and County of Honolulu

Subject: Draft Supplemental Environmental Impact Statement (SEIS) for Heeia Kea Valley  
Heeia, Koolaupoko, Oahu  
TRI: 4-6-08: 1, 2, 4, 7 through 16 and 22 through 51  
4-6-16: 32

Acres: 88.6

The Department of Agriculture has reviewed the Draft Supplemental Environmental Impact Statement for Heeia Kea Valley and offers the following comments.

The subject document indicates on page 51 that “The current proposal preserves 25 acres of land for agricultural use.” Page 5, Table 1, indicates 33.5 acres are in the “Agriculture” land use category, and Section XI, page B-10 states “The currently proposed project does not intend to utilize the 33.5 acres of existing agricultural land between the proposed subdivision and the existing preservation lands.” These statements appear to be somewhat contradictory and should be clarified to clearly identify anticipated agricultural uses for the subject property.

The parcel has been classified by the State as “Urban”. Permissible Uses for this District (State Land Use Commission Rules of Practice and Procedure and District Regulations, page 46) state that “Any and all uses permitted by the Counties, shall be allowed within this (Urban) District…”

We also note that references to the Soil Conservation Service Soil Survey (SCS), Agricultural Lands of Importance to the State of Hawaii (ALIHS) system, and the Land Use Bureau Detailed Land Classification for the Island of Oahu are essentially correct. These studies all indicate the site has only marginal value for agricultural purposes. Consequently, we
Mr. Jack Suna, Chairperson
Board of Agriculture
State of Hawaii
Department of Agriculture
P. O. Box 22959
Honolulu, Hawaii 96822-0159

Subject: Hoomaluhia Valley
Draft Supplemental Environmental Impact Statement (EIS)

Dear Mr. Suna:

We have received your October 1, 1986 memorandum to Donald A. Clegg, Chief Planning Officer, Department of General Planning, regarding the Draft Supplemental EIS.

The current proposal preserves 33.5 acres of land for agricultural use between the proposed subdivision and the existing preservation land. The intention of the current proposal is not to utilize the 33.5 acres of agricultural land, but to preserve it for agricultural tenants. The Revised Supplemental EIS will be revised to include the correct acreage of agricultural land, 33.5 acres.

Should you have any questions, please contact our office.

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

[Signature]

Brian L. Gray
MEMORANDUM

To: Mr. Donald A. Clepp, Chief Planning Office
   Department of General Planning, City & County of Honolulu

From: Deputy Director for Environmental Health

Subject: Environmental Impact Statement (EIS) for Heeia Kea Valley, Heeia,
         Koolauloa, Oahu

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

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

cc: Mr. David B. Bills

James K. Inouye

Gray, Hong & Associates, Inc.
Consulting Engineers

October 16, 1986

Mr. James Ikeda
Deputy Director
State of Hawaii
Department of Health
P. O. Box 3278
Honolulu, Hawaii 96801

SUBJECT: Heeia Kea Valley
Draft Supplemental
Environmental Impact Statement (EIS)

Dear Mr. Ikeda:

We have received a copy of your September 25, 1986 memorandum to
Donald A. Clepp, Chief Planning Office, Department of General Planning
regarding the Draft Supplemental EIS. Your memorandum will be incorporated
into the final Supplemental EIS.

Should you have any questions, please contact our office.

Very truly yours,

Gray, Hong & Associates, Inc.

Print Name: Brian L. Gray

Date: 10/16/86
Mr. Donald A. Clegg, Chief Planning Officer  
Department of General Planning  
City and County of Honolulu  
Honolulu, Hawai'i  

Mr. John P. Whalen, Director  
Department of Land Utilization  
City and County of Honolulu  
Honolulu, Hawai'i  

Dear Messrs. Clegg and Whalen:  

Subject: Supplemental EIS for Hesia Kea Valley  

We have reviewed the subject document and have no comments to offer.  

Very truly yours,  

[Signature]  

T.Y. Tomimaga  
State Public Works Engineer  

cc: Mr. David B. Bills  

GRAY, HONG & ASSOCIATES, INC.  
CONSULTING ENGINEERS  

Mr. Teuma Tomimaga  
State Public Works Engineer  
Department of Accounting and  
General Services  
1101 Punchbowl Street  
Honolulu, Hawai'i 96813  

SUBJECT: Hesia Kea Valley  
Draft Supplemental  
Environmental Impact Statement (EIS)  

Dear Mr. Tomimaga:  

Thank you for your letter dated September 15, 1986 regarding the Draft Supplemental EIS. Your letter will be incorporated into the Revised Supplemental EIS.  

Should you have any questions, please contact our office.  

Very truly yours,  

[Signature]  

D.R. Gray  
GRAY, HONG & ASSOCIATES, INC.  

190 WAIKIKI STREET, SUITE 600, HONOLULU, HAWAI'I 96815  
TELEPHONE: 808-591-3306  
FAX: 808-591-5417  

XII. A-12
cc: Hills

Mr. Donald A. Clepp
Chief Planning Officer
Department of General Planning
City & County of Honolulu
650 South King Street
Honolulu, HI 96813

October 7, 1986

Mr. Richard H. Danen
State Conservationist
U.S. Department of Agriculture
Soil Conservation Service
P.O. Box 5000
Honolulu, Hawaii 96808

Subject: Draft Supplemental EIS - Heeia Kea Valley, Heeia, Kailua-Kona, Oahu

We reviewed the subject draft environmental impact statement and have no comments to make.

Thank you for the opportunity to review the document.

Sincerely,

[Signature]

Richard H. Danen
State Conservationist

Cc:
Mr. John P. Whalen, Director
Department of Land Utilization
City & County of Honolulu
650 South King Street
Honolulu, HI 96813

Mr. David B. Bills
Gray, Hong and Associates, Inc.
131 Merchant Street, Suite 407
Honolulu, HI 96813

Mr. Clepp:

October 15, 1986

Mr. Richard H. Danen

Subject: Heeia Kea Valley
Draft Supplemental Environmental Impact Statement (EIS)

Dear Mr. Danen:

Thank you for your letter dated October 7, 1986 regarding the Draft Supplemental EIS. Your letter will be incorporated into the Revised Supplemental EIS.

Should you have any questions, please contact our office.

Very truly yours,

Gray, Hong & Associates, Inc.

[Signature]

Brian L. Gray

Mr. Bills:

Draft

[Signature]

1301-1
GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

Mr. Donald A. Clegg
Chief Planning Office
Dept. of Planning Office
City & County Of Honolulu
650 South King Street
Honolulu, HI 96813

Mr. John P. Whalen, Director
Dept. of Land Utilization
City & County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Mr. Clegg and Mr. Whalen:

Site Selection Study and Draft Environmental Impact Statement for the New Paul Intermediate School
Kahului, Maui, Hawaii

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

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

Yours truly,

Jerry M. Matasuda
Major, Hawaii Air National Guard
Cntl & Engr Officer

cc: Gray, Hong and Associates, Inc. /

GRAY, HONG & ASSOCIATES, INC.

BRIAN L. GRAY, PE
DANIEL B. HONG, PE
DANIEL B. KONUNDA, PE
SUSAN M. HENRY, PE
ROBERT B. JONES

October 16, 1986

State of Hawaii
Department of Defense
Office of the Adjutant General
3140 Diamond Head Road
Honolulu, Hawaii 96816-4495

Attn: Jerry M. Matasuda
Major, Hawaii Air National Guard
Cntl & Engr Officer

SUBJECT: Kihei Eva Valley
Draft Supplemental Environmental Impact Statement (EIS)

Dear Major Matasuda:

Thank you for your letter dated September 19, 1986 regarding the Draft Supplemental EIS. Your letter will be incorporated into the Revised Supplemental EIS.

Should you have any questions, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray
CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY. SEE FRAME(S) IMMEDIATELY FOLLOWING
DEPARTMENT OF THE NAVY
COMANDER
NAVAL AIR STATION PEARL HARBOR
PEARL HARBOR, HAWAII 96813

OCT 8 1986

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

Mr. Clegg:

DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (EIS)
FOR KEAA VALLEY, KEAA, KALAPAUA, OAHU

The U.S. Navy is submitting comments on questions of
noise compatibility, as the proposed project is located in the vicinity of
Marine Corps Air Station (MCAS) Kaneohe Bay.

The study makes reference to MCAS Kaneohe Bay Air Installation Compatible Use
Zone (AICUZ) of 1980, which is outdated. The current AICUZ for MCAS Kaneohe
Bay, which is available in public libraries, is dated 1993.

Approximately 1/2 to 1/2 of the subject project site is within 60-65 Ldn AICUZ
contour from MCAS Kaneohe Bay.

The MCAS Kaneohe Bay AICUZ of August 1993, Chapter E, Current Noise Zones,
indicates that although an Ldn of 65 decibels is normally compatible for
residential land use on the mainland, additional consideration of
compatibility should be given to planned residential land use in the Ldn 60-65
deibel noise zone. This is consistent with the findings of the land use
compatibility study for the Honolulu International airport, which suggests
that sound insulation may be needed to be incorporated into new housing
construction in areas exposed to Ldn 60-65.

Recommendations are as follows:

a. Sound insulation/attenuation should be considered in design of new
residential units within contour of Ldn 60-65.

b. Developer should notify prospective buyers of units that this project
is encumbered partially by AICUZ from MCAS Kaneohe Bay with disclosure that a
significant number of units will be within the 60-65 Ldn noise contour.

c. EIS should refer to current AICUZ for MCAS Kaneohe Bay.

Sincerely,

P. ECKMEYER
C.O. U.S. Navy
Chief of NAVAL

Copy to:
Mr. John P. Whalen, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Mr. David B. Millis
Gray, Hong and Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813
GRAY, HONG & ASSOCIATES, INC.  
CONSULTING ENGINEERS

October 16, 1986

Captain P. O'Connor
Chief of Staff
Department of the Navy
Naval Base Pearl Harbor
Box 110
Pearl Harbor, Hawaii 96860-5920

SUBJECT: Hanalei Bay Valley
Draft Supplemental Environmental Impact Statement (SIS)

Dear Captain O'Connor:

Thank you for your letter dated October 6, 1986 regarding the Draft Supplemental EIS. We are providing the following responses to your comments:

1. The Supplemental EIS will be revised to include reference to the most current Air Installation Compatibility Study (AICS) for Marine Corps Air Station Kaneohe Bay dated August 1985. We note that the noise contours for the project area remain unchanged from the 1976 AICS as previously referred to. Both the 1976 and 1985 AICS maps with the project limits delineated are attached for your information.

2. Your recommendations to consider sound insulation/attenuation in the design of new residential units and to disclose to prospective buyers that some units are within the LWA 60-65 noise zone will be included in the Revised Supplemental EIS as mitigation measures to minimize impact in conjunction with HUD and FHA requirements for financing eligibility.

Should you have any questions, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

[Signature]

Encl.

198 MERCHANT STREET, SUITE 202, HONOLULU, HAWAII 96814  TELEPHONE, 848-3700
September 18, 1986

MEMORANDUM

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

FROM:      RUSSELL L. SMITH, JR., DIRECTOR AND CHIEF ENGINEER
        DEPARTMENT OF PUBLIC WORKS

SUBJECT:   SUPPLEMENTAL EIS FOR KEEIA EEA VALLEY,
        WAILUKU, KAHULUI (TWO MAP KEYS: 4-6-16, 32, 4-6-051 VAR.)

We have reviewed the subject supplemental EIS and have the following comments:

1. The description of the proposed sanitary sewer system improvements (pages 18-20) should be revised to reflect the current planning objectives of the Division of Wastewater Management. Currently, the City is planning to construct the master-planned wastewater pump station (WWPS) near the Kealia "long bridge." The tentative schedule is to start construction in August 1986 with completion in February 1987.

2. The operation and maintenance of the subdivision on-site WWPS should be discussed. The WWPS should be built according to City's standards if the City is to operate and maintain the station.

3. We have no drainage comments.

for RUSSELL L. SMITH, JR.,
Director and Chief Engineer

cc:        Gray, Hong and Associates, Inc.
          Xerox A-16

Mr. Russell L. Smith, Jr.,
Director and Chief Engineer
Department of Public Works
550 South King Street
Hilo, Hawaii 96720

SUBJECT:   Kealia Eea Valley
Draft Supplemental
Environmental Impact Statement (EIS)

We have received a copy of your memorandum to Donald A. Clegg and are providing the following comments:

1. The Supplemental Environmental Impact Statement will be revised to state that the City & County of Honolulu is planning to construct the master-planned pump station near the "long bridge." The proposed Kealia Eea Valley will be serving this city at this location.

2. The Supplemental Environmental Impact Statement will be revised to state that the on-site pump station will be built to Public Works standards to allow operation and maintenance by the City & County of Honolulu.

Should you have any questions, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

[Signature]

Brian L. Gray
MEMORANDUM

TO: JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: JOHN E. HIRTEM, DIRECTOR

SUBJECT: SUPPLEMENTAL EIS FOR KEEIA KEA VALLEY

This is in response to the State Office of Environmental Quality Control’s request of September 8, 1986 for our review and comments on the subject EIS.

The report indicates that improvements to Kamokila Highway at the intersection of the two proposed access points to the project will be implemented. We agree that the addition of turning, acceleration and deceleration lanes will mitigate the traffic impact from the project. However, we feel that traffic signalization of the intersection at Kaa Kea Small Boat Harbor will be needed. Accordingly, we recommend that traffic signal duct lines should also be installed with the proposed intersection improvements.

cc: Mr. David B. Bills
Gray, Hong and Associates, Inc.

John E. Hirtan

October 16, 1986

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

Mr. John E. Hirtan
Department of Transportation Services
City and County of Honolulu
Honolulu Municipal Building
655 South King Street
Honolulu, Hawaii 96813

SUBJECT: Kaa Kea Valley
Draft Supplemental Environmental Impact Statement (EIS)

Dear Mr. Hirtan:

We have received a copy of your September 26, 1986 memorandum to John P. Whalen, Director, Department of Land Utilization. Your memorandum indicated that the Revised Environmental Impact Statement should reflect that signal improvements adjacent to Kaa Kea Harbor. The Revised Supplemental Environmental Impact Statement has been modified accordingly.

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

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Bills
1301-1
GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

Mrs. Letitia K. Uyehara, Director
Office of Environmental Quality Control
455 South King Street, Room 104
Honolulu, Hawaii 96813

SUBJECT: Maunalua Bay
Draft Supplemental Environmental Impact Statement (EIS)

October 16, 1986

Dear Mrs. Uyehara:

We thank you for your review comments dated October 6, 1986. We are providing the following responses to your comments:

1. The purpose of channelized intersections on the Kahekili Highway is to accommodate turning motions without interrupting through traffic. Channelized intersections will be a positive mitigation measure to local traffic on the Kahekili Highway.

As discussed in the supplemental document, regional traffic improvements include improvements to the Pali-Ko'olau corridor, Kahekili Highway/Kahekili Highway intersection and widening of Kahekili Highway. All of these projects will increase highway capacities. Kahekio Highway will receive some of the benefits of increased traffic capacity at other areas. Specifically, Kahekio Highway will save a reduction in peak hour traffic if additional traffic capacity is provided on Kahekio Highway.

2. As presented in the Supplemental Environmental Impact Statement, regional traffic improvements will consist of Kahekio improvements, various intersection improvements, and widening of Kahekio Highway. One specific project such as the K-3 Freeway will not mitigate the traffic congestion. However, a combination of all the various regional traffic improvements will improve traffic flow characteristics on Kahekio Highway.

The Supplemental Environmental Impact Statement identifies all of the foregoing regional traffic improvements.

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

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

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

Dear Mr. Whalen:

Subject: Supplemental EIS for Hanauma Bay, Hawaii, Koolau Golf Course

We have reviewed the EIS and offer the following comments regarding traffic for consideration.

1. Peak traffic on the Pali and Likelike Highways are presently near maximum capacity levels. The development of this project will further deteriorate the service of these highways. Channelized intersections within Kahekio Highway, as proposed in the EIS, will not alleviate this problem.

2. Even with the State's H-3 project receiving congressional exemption, the traffic on Kahekio or Kahekio Highways may not be alleviated since the H-3 on-ramp will be near the Pali Golf Course.

Thank you for providing us the opportunity to review this EIS.

Sincerely,

Letitia K. Uyehara
Director

cc: Gray, Hong and Associates
Department of General Planning
Gray, Hong & Associates, Inc.
Honolulu, Hawaii 96813

Re: Draft Supplemental Environmental Impact Statement
for Heeia Kea Valley, Heeia, Koolauapoko, Oahu

Dear Sirs:

The concerns of the Honolulu Group Conservation Committee in regards to this project remain the same as our letter in this document outlines. This isn't to criticize the document for not addressing expressed concerns. Rather it would seem to be with the process and with political entities that have set up the approval process. There are some projects in which the impacts cannot be mitigated, yet developers are encouraged to proceed at their own great expense.

There is no way that this project can proceed without tremendous impact. The highway problem alone will not be solved, only smoothed out somewhat by the proposed measures. The very immediate sharp curve and narrow Long Bridge are not even addressed. All of the possible highway improvements are far beyond the immediate bottlenecks.

We do commend the developer for the proposed "green buffer zone" which will lessen but will not solve the impact on the Kaneohe Bay Coastal zone. Cumulative impact on the Coastal Zone cannot, in our view, be mitigated and will not be in keeping with the CZM Law.

The impact on water resources cannot be mitigated, but our quarrel here is with the Board of Water Supply and with the political philosophy that maximizes development, and water is given only as a need priority, but on a "first-come, first-served" basis. It is wrong that the actual water permit comes at the end of the process rather than at the beginning where such an important resource belongs. We have been at odds with the Board of Water Supply for a long time,

because it seems willing to develop water at the expense of the remaining stream systems, and of small agricultural enterprises.

To prevent all run-off into the Bay, both silt and chemicals from increased automobile traffic and from ground treatment, is not possible with the proposals of this project. The storm drains will carry it into Kaneohe Bay during the heavy rains.

The question that is bottom-line with this or with any other large project is: "How do we as a State value our natural resources?" Should every "developable" open-space be developed quickly, or should some places be preserved for their natural value alone? Should Kaneohe Bay, with its special qualities, be one of these places?

Mahalo for permitting us to comment.

Lola Manch
Conservation Committee
Ms. Lola Mend
Conservation Committee
Oahu Club, Hawaii Chapter
Kaneohe Group
P.O. Box 11070
Kaneohe, Hawaii 96748

October 16, 1986

SUBJECT: Kaneohe Valley Draft Environmental Impact Statement (EIS)

Dear Ms. Mend:

We thank you for your review comments dated October 2, 1986. We appreciate your statements regarding the approval process but have no specific response since the project must comply with the current approval processes.

With respect to your comment regarding traffic, local improvements will mitigate traffic congestion and regional improvements will mitigate increasing traffic volumes. The sharp curve and long bridge are not on the project site and no improvements are proposed. Traffic impacts at these two sites will remain essentially identical to existing conditions.

The project site is under Kaneohe Highway and does not lend itself to significant coastal activities. Along the majority of the project's Kaneohe Highway frontage, the shoreline is narrow, with the exception of the Kaneohe Kai Harbor. Lands on the project site adjacent to the harbor will be devoted to land development. In addition, coastal and industrial activities associated with the plan. In addition, as stated in your comment letter, the proposed "green buffer zone" will create additional separation from the shoreline. We therefore do not believe that the project is inconsistent with Coastal Zone Management policies. Further, a majority of the project is outside the Special Management Area where coastal dependent policies of the Coastal Zone Management Law have limited relevance.

With respect to water, the Board of Water Supply plans to develop a development project. Preliminary discussion with the Board indicates the source as well as transmission components of the Board's system can provide adequate water without jeopardizing the island's overall requirements. This project has no direct control over the source development.

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

Brian L. Gray

Page 2
October 16, 1986

- The project will generate residential type storm water runoff to Kaneohe Bay. The increase in surface runoff is estimated to be approximately 15%, which is less than 0.1% of total storm water discharging to the Bay. This information was provided in the 1983 EIS and summarized in this supplement. No significant impact to Kaneohe Bay is anticipated.

- The approval process will assess the implications of the proposed project. Completion of each approval step will produce a determination regarding the appropriateness of development on the project site.

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

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

Brian L. Gray
Mr. Brian L. Gray
Gray, Hong & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Gray:

Heeia Kea Valley, Draft Supplemental Environmental Impact Statement
T.M.K.: 4-6-06: 1, 2, 4, 7-16
20-31, and 4-6-16: 32

October 6, 1986

We have reviewed the subject Draft Supplemental Environmental Impact Statement (EIS) and have the following comments:

1. The section on noise impact references a 1978 Air Installation Compatible Use Zone (AIUCU) study. This study was updated in August 1983 and information from the updated study should be used in determining noise impacts.

2. On page 6 the sewer system average daily flow is higher than the water system average daily flow. Generally the opposite occurs. We recommend that you recalculate average daily flows using Board of Water Supply and Department of Public Works methodology for determining average daily flow.

3. How much excess capacity will be designed into the temporary pump stations? Please clarify the reason for building temporary pump stations rather than proceeding with the design and construction of the permanent stations. Who will bear the construction cost of the permanent pump stations (City or developer)?

4. On the bottom of page 50 one or more lines appear to have been dropped.

5. The social impact of this project appears to be controversial and unresolved. The statement on page 23 that "No significant change in social characteristics of the area was anticipated" appears to be incorrect. On page 39 it is stated that "While much progress was made some concerns with respect to the physical and social impacts of the proposed uses remain unresolved." On page 82 it is further stated that "However, the extent of the intangible quality of life impact, namely the impact on community identity, will depend largely on how the community perceives this project relative to their needs and desires." On previous pages in the "Social Characteristics" section, the report indicated the diverse views of the affected residents on the impact of the development on the community.

6. On page 59, Figure 13, and in Appendix B, Figure 5, the A.M. peak hour critical lane volumes for Kaneohe Highway contain parentheses around the existing rather than projected volumes as indicated in the note at the bottom of the page.

7. According to a State Department of Transportation traffic count taken on Kaneohe Highway 0.4 mile northeast of Hipu Street (Heeia Viaduct) in March of 1985, the A.M. peak hour (6:00 a.m. to 7:00 a.m.) traffic volumes for Kaneohe Highway were 707 vehicles Kaneohe bound and 55 vehicles Kailua bound. The A.M. peak hour figures used in the subject Draft Supplemental EIS and the previous EIS (dated 1983) were 520 vehicles Kaneohe bound and 130 vehicles Kailua bound on Kaneohe Highway. Traffic impact and capacity calculations for Kaneohe Highway fronting the project should be recalculated using the more current traffic volume counts.

8. At the Kaneohe Highway, Naiku Road, and Lili`u Road intersection there has been a substantial decrease in the traffic volume and critical lane volumes from the 1982 figures used in the previous EIS to the 1983 figures in the subject Draft Supplemental EIS. Are there any changes in the surrounding area which could account for this reduction in traffic? The State Department of Transportation has traffic counts for this intersection taken in October 1984 and April 1985. These counts should be used to determine any further changes in traffic at this intersection with the most current count used to determine existing and projected critical lane volumes.
9. Support should be provided for your estimate that half of the peak hour traffic generated by the project will pass through the Kamakamae Highway, Halulu Road, and Lilipuna Road intersection. The subject Draft Supplemental EIS indicates an 80/20 split during the A.M. and P.M. peak hours while the 1985 traffic volume count indicates a 50/50 split during the A.M. peak hour with the larger volume Kamoohe bound in the A.M. and Kahaluu bound in the P.M. What happens to the other 20 or 40 percent of the traffic that does not pass through the intersection?

Although not needed for the EIS, the Department requires a more definitive phasing plan than that provided on page 24 to review your Development Plan Amendment request for this project. Please include the number of units to be completed each year, the projected completion date of the commercial area, industrial area and park site, and the phasing of roadway, water and sewage improvements.

Should you have any questions concerning our comments, please call Keith Kurohashi at 527-6051.

Thank you for the opportunity to comment.

Sincerely,

[Signature]

DONALD A. CLERG
Chief Planning Officer
Mr. Donald A. Clegg
Page 2
October 16, 1986

5. A response to your comment regarding the "controversial" and "unresolved" social impact of this project has been provided by Erbplan and is attached.

6. The parentheses have been revised appropriately on Figure 13 and in Appendix B as identified in your letter.

7. Morning peak hour traffic near Hela Viodont has varied between 405 and 435 vehicles for calendar years 1986, 1985 and 1984. However, in 1985 the count was 842 (173 Kamehame-bound and 569 Kaahumanu-bound). The most recent count indicates a slight increase in the number of vehicles over the 1985 peak-hour count. Therefore, the 1985 peak-hour count is not considered significant. Conversations with the State of Hawaii Department of Transportation Planning Branch confirm our position.

The 1983 EIS distributed peak hour traffic on Kamehameha Highway utilizing an existing lane limit of 350 vehicles (two directions) and this is still representative today.

8. The 1982 traffic distribution has been revised and has been found to be erroneous. Approach volumes (all directions) are summarized below for A.M. and P.M. peak hours:

<table>
<thead>
<tr>
<th>Year</th>
<th>A.M.</th>
<th>P.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>1,868</td>
<td>2,821</td>
</tr>
<tr>
<td>1983</td>
<td>2,073</td>
<td>1,874</td>
</tr>
<tr>
<td>1984</td>
<td>2,079</td>
<td>1,873</td>
</tr>
<tr>
<td>1985</td>
<td>2,157</td>
<td>1,868</td>
</tr>
</tbody>
</table>

From the preceding table, the peak hour traffic entering the Liliopuna/Haiku Road intersection has been relatively steady. It is therefore the peak hour distribution as shown on Figures 11 and 12 are representative for any of the last few years.

9. It has been estimated that half of the Kamehame-bound peak hour traffic will enter the Kamehameha Highway, Haiku Road and Liliopuna Road intersection. This is due to the fact that Haiku Street intersects traffic headed to Kapalua Highway and toward Lahainaluna. Haiku Street intersects Kamehameha Highway and connects with Haiku Road and allows bypass of the Liliopuna Road/Haiku Road intersection.
Mr. Donald A. Class
Page 3
October 16, 1985

10. A plantsing Plan is being developed and forwarded to your office as
soon as possible.

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

Very truly yours,
CHAT, RONG & ASSOCIATES, INC.

Brian L. Gray

Bill
Attachment
1301-1
October 17, 1986

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

Dear Mr. Bills:

Subject: Heia Kea Supplemental EIS
Response to Comments from the City Department of General Planning

This is in response to the October 6, 1986 letter from the City Department of General Planning. This letter specifically addresses comment #5 on page 2 of the letter. The first part of this letter addresses the overall nature of social impacts; the second, the Heia Kea Social Impact Assessment; the third, DHR's references to specific statements.

Overall Nature of Social Impacts

The comment that "the social impact of this project appears to be controversial and unresolved" is partially true in that addressing the social impacts of any project is an ongoing and dynamic process.

Even if solutions or mitigative measures may seem mutually agreeable by both the developer and the community, this does not mean that the particular impact has been resolved.

Instead, it suggests that, at a given point in time, those who devised the solutions believed that these measures would work.

Another party or group, however, may still not find such a solution satisfactory and, for them, the social impact is unresolved. Another possibility is that the execution of the proposed solutions, if monitored, may prove ineffective so that the social impact remains unresolved. Still another possibility is that some of those involved in the initial design of these solutions may, at a later date, change their minds, based on different attitudes or on other new information.

Addressing Social Impacts of Heia Kea

As required in an EIS study, the Heia Kea Social Impact Assessment identifies the potential social impacts of this project. The Assessment further seeks to do so within the social and cultural context of Kahului and Kaneohe.

Rather than seek consensus or support among the community, the Social Impact Assessment presents people about the proposed development. In some instances, mitigative measures to these concerns have been suggested by individuals or by the report preparer.

This information can assist in the development of resolutions. For example, in previous proposals for Heia Kea, some people implied that they did not want any development whatever on the site because they wanted to "keep the country country."

In the Assessment, however, after further discussions with community members, it was found that this feeling sometimes stemmed from a desire to maintain the valley as a buffer between Kahului and Kaneohe. For some people, it was not a matter of no development, but what would be there (such as housing, windward residents can afford, parks, and so on), how it was put there (such as visual considerations), and the impact of the development of one's driving time, sewerage system and other factors present in one's daily life.

This information suggests that, despite the controversy of the previous Heia Kea proposals, specific measures can be designed to address social impacts.

A good example is the recent action taken by the Kahului Neighborhood Board. As stated in the Assessment, the Kahului and Kaneohe Neighborhood Boards have recommended denial of all previous proposals for Heia Kea.

At their September meeting of this year, however, the Kahului Neighborhood Board voted to support the Heia Kea project, with amendments. Many of their conditions are designed to maintain the buffer quality mentioned above -- the open space, the retention of large trees, and a green belt along the highway. For whatever reason, such suggestions were not incorporated in the Board's positions on previous proposals.

This change of position implies perhaps that the community may be slowly changing its attitude, but even these changes do not imply total resolution of social impacts. It is highly likely that some people will remain unsatisfied, as long as the area changes from what it is today. For them, the social impacts will remain unless they can personally find a positive benefit outweighing the negative impacts.
Specific Comments

The DOT letter cites three comments which need to be clarified.

The statement on page 23 applies to statements made in the initial EIS. A sentence should be added to that paragraph stating: "A Social Impact Assessment was prepared for this supplemental EIS and is further discussed in other sections of this EIS. The full report is appended to this document."

The statement on page 39 specifically refers to lack of resolution during the meetings facilitated by the Neighborhood Justice Center between September 1984 and June 1985. The group has not re-convened to work these differences out, nor does it seem likely that this will happen.

To portray more accurate information, this statement should be revised to read: "While much progress was made, the group could not reach consensus with some concerns relating to the physical and social impacts of the proposed uses."

The statement on page 82 was addressed previously in this letter.

Please contact me if you need further information or clarification on this matter.

Sincerely yours,

[Signature]

EARTHPLAN

[Name]

cc: Horn Dyer, The Gentry Companies
    Constance Lau, Hawaiian Electric Company
Mr. Donald A. Clagg
Chief Planning Officer
Department of General Planning
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Clagg:

Subject: Draft Supplemental Environmental Impact Statement of Heiau

We have reviewed the subject DSEIS and have no comment to offer. Thank you for the opportunity to comment. This material was reviewed by WRRC personnel.

Sincerely,

Edwin T. Murabayashi
EIS Coordinator

AN EQUAL OPPORTUNITY EMPLOYER

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

Mr. Edwin T. Murabayashi
EIS Coordinator
University of Hawaii at Manoa
Water Resources Research Center
Holmoe Hall 228 - 2540 Oleo Street
Honolulu, Hawaii 96822

SUBJECT: Heiau Koa Valley
Draft Supplemental Environmental Impact Statement (EIS)

Dear Mr. Murabayashi:

We have received your letter dated October 16, 1986 regarding the subject project. We thank you for your review of the document. Your letter will be included in the revised Supplemental Environmental Impact Statement.

Should you have any additional questions, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

November 13011-1
would be most advisable to wait until construction begins and then merely monitor it. The Center's review then went on to ask: "If significant remains were to be located, would the archaeologist have the power to stop construction or just watch the sites being destroyed? If the latter, then such monitoring would seem merely futile. It is the former then considerable time and expense delays in construction might result." The project's archaeological consultant in response to this review stated: "The reviewer makes an excellent point concerning archaeological monitoring. To simply observe the destruction of subsurface features as they are uncovered would be futile and to halt construction the land clearing and grubbing phase of development (except in an emergency) would be time consuming and costly. As suggested, a program of subsurface testing prior to construction would be advantageous to all parties. After this has been completed an archaeologist should be on hand to deal with any additional and unexpected features or horizons." Thus the Environmental Center and the project's own consultant are in agreement on the need for testing prior to any monitoring activity. This was not considered on page 52 which purports to represent the consultant's position."

The comments on the lack of significance and proposed actions given on pages 33-4, 37-8 and 51-2 of the Supplemental EIS are in conflict with the mitigation measures suggested on page 39. The problem with these proposed measures is that they are extremely vague, compared to the concrete suggestions made by Mr. Ono and the Environmental Center in their 1985 reviews, and by the Archaeological Consultant for the project in his response to these reviews in March 1983. On page 98 of the Supplemental EIS it is stated:

"The extent of additional and appropriate archaeological work that should be undertaken remains to be determined. Some concern centers around the potential for subsurface information. Additional work is proposed in conjunction with the Department of Land and Natural Resources to address this concern. The scope of this work will be coordinated with DLNR."

In the Final EIS for the project the nature of this additional work should be clearly indicated. It would be helpful if the following EIS for the project, the State Historic Preservation Office called for:

1. Salvage excavations at all sites
2. Additional information on all ground disturbing activities
3. Shrink sites HK-IV and HK-V to be preserved

In addition, and with the concurrence of the project's archaeological consultant, the UH Environmental Center called for:

4. A program of subsurface testing to assess the possibility of significant subsurface remains
5. Additional historic literature review

Since 1983 the need for subsurface testing on development sites likely to yield buried remains has been demonstrated several times. The tula (architectural terraces) system in Okolehao directly adjacent to Heiau was found to have up to four buried agricultural levels below the surface structures dating back 1000, and in one case perhaps 1500 years. Subsurface testing at the West Bench road development has revealed an old shoreline the remains of which may be one of the earliest settlement sites in the Hawaiian Islands. Even in heavily impacted areas such as the
Nahoe Regional Park and in Waikiki where no surface remains are evident, significant archaeological deposits have been encountered. These examples strongly indicate that subsurface testing should be a normal part of any cultural resource surveys and should be included in the final report.

Commitment to the five proposed mitigation procedures listed above should be included in the Final Supplemental EIS.

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

October 16, 1985

Mr. Matthew Spriggs,
Environmental Center
University of Hawaii at Manoa
Crawford Hall 317 – 2559 Campus Road
Honolulu, Hawaii 96822

SUBJECT: Heiau Valley
Draft Supplemental Environmental Impact Statement (EIS)

Dear Mr. Spriggs:

We have received a copy of your undated memorandum to the Environmental Impact Statement (EIS) regarding the Heiau Valley project. Your memorandum chronologically details the events that occurred during the project. The current document is a supplement to the 1983 EIS and is a response to the recommendations made during the review of the EIS. The revised EIS is currently being prepared based on the recommendations made in the review. The recommendations previously identified are still valid. Specifically, the following actions are still proposed in the revised EIS:

1. Salvage excavations at all sites.
2. Monitoring of all ground-disturbing activities.
3. Preservation of three sites (HH-27 and HH-77).
4. Implementation of the project to assess the possibility of subsurface remains.
5. Provide additional historic literature review.

Should you have any additional comments regarding this document, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

[Signature]
October 8, 1986

Mr. Donald A. Clegg
Chief Planning Officer
Department of General Planning
500 South King Street
Honolulu, Hawaii 96813

Re: Supplemental EIS for Heeia Kea Valley.

Dear Mr. Clegg:

We have reviewed the Supplemental EIS submitted for the Hawaiian Electric Company's property which it is purchasing from the Bishop Estate at Heeia Kea, Oahu. The EIS submitted is deficient or inaccurate on several major issues and should be rejected. We will discuss each issue briefly.

WATER

At page 16 the EIS indicates that the project's peak daily water demand will be 583,000 gallons. The EIS also states that the Board of Water Supply will make no water commitment until construction plans are approved. Windward Oahu residents have been engaged in the denaturing of windward streams and the consequent loss of water for irrigation use as well as for recreational, aesthetic, and environmental needs. This developer must address the problems associated with developing an additional one-half million gallons of water per day and the impact such development has on actual and planned agricultural and environmental values.

Not only will this project increase runoff from the Heeia Kea area with potential pollutants associated with the proposed use, but it will also result in a reduced flow of fresh water into Kaehe Bay as a result of such development. The EIS totally fails to assess any of these impacts.

LAND USE PLANNING

At page 39 the EIS states that the project is compatible with surrounding uses, at page 40 states that the site does not support agriculture, and at page 52 states, "...there is presently no aesthetic value to the site." All of these statements are inaccurate at best. Surrounding areas are mostly older homes along both sides of the highway. This area does not have the type of density or impact upon public service as will be created by this project.

Further, to say that the site does not support agriculture is highly misleading because the agriculturalElectric Company which it first decided to develop this property, according to testimony from residents presented at public hearings regarding this property.

Finally, to say that these lands in their natural state have "no aesthetic value" is absurd. Such logic would justify covering most of this island with concrete. Any user of Kaehe Bay would verify the natural beauty of this area.

TRANSPORTATION

In the discussion at pages 61 to 65 the EIS states, "However, the foregoing Windward traffic improvement and widening of Kahului Highway will be implemented regardless of the outcome of the H-3 Freeway issue." At present the highway improvements have not been authorized. Furthermore, given the passage of the deadline, the prospect of money to fund these projects is not good.

If H-3 is built, the State of Hawaii will have to raise $75 million in matching funds to obtain the federal funds to build the highway. Because of this tremendous burden on the state's transportation budget, it is unlikely that any funds will be available for many years to fund these improvements. Additionally, the estimates of construction vary between 10 and 20 years, and construction may not be started until 1995 if the freeway is built. Thus, the discussion does not impact on traffic. As residents of the immediate area surrounding the project site, we are well aware of the present inadequacy of existing roads to handle existing peak traffic. No changes in the Development Plan should be considered until transportation improvements are a certainty.
Finally, this is not the only project which would contribute to additional traffic. The EIS totally neglects to assess the cumulative impact of this project combined with other proposed projects or development allowable under existing planning and zoning. Without an analysis of cumulative impacts, this analysis is of little value.

Also at page 70 the EIS states that additional county buses will be needed (subsidized by the county) or if they are unavailable, even more automobile traffic will be generated.

EDUCATION

The EIS blithely states that Castle High School is at capacity and may require funding for additional classrooms. No analysis is presented of the cost of such improvements or the source of funds. Along with transportation needs, this project may impose tremendous burdens on government to fund improvements. Analysis of these costs is ignored by the EIS in assessing the impact of this project.

RECREATION

The only discussion regarding impacts upon the recreational uses of Kaneohe Bay and the access to Hina Kea pier relate to automobile traffic. However, no discussion is presented regarding additional impacts upon the bay itself and the users of the bay. By building 236 homes in the vicinity of the pier, such demands can only increase on facilities which are now used to capacity. The EIS is inadequate without analysis of the impacts on recreation in Kaneohe Bay.

Thank you for your consideration of these comments. We hope that the EIS will be rejected until these critical areas are adequately addressed.

Sincerely,

KATHRYN KOMI ALBU

Ronald A. Albu

CC: Mr. David H. Bills

Gray, Hong and Associates, Inc.

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

October 16, 1986

Mr. Ronald A. Albu
Mrs. Kathryn Komali Albu
P.O. Box 792
Kaneohe, Hawaii 96744

SUBJECT: Kaneohe Valley
Draft Supplemental
Environmental Impact Statement (EIS)

Dear Mr. and Mrs. Albu:

We thank you for your comments dated October 8, 1986 regarding the subject project. Your comment letter recommends that the subject document should be rejected based on deficiencies or inaccuracies on certain issues. We are providing the following comments regarding your concerns:

Water

The developers of the subject project have no control over the actual source which will allow water to be made available to the project. Source development will be totally under the jurisdiction of the Board of Water Supply. Product development will be dependent upon the actual time frame of construction. At present, the developers are proposing a development plan amendment which, if approved, will be followed by a change in zone request prior to preparation of any construction plans. Through preliminary contact with the Board of Water Supply, it has been indicated that there are sufficient sources available to provide water for the project.

Stormwater runoff has been summarized in the current Supplemental Environmental Impact Statement. A more detailed analysis of stormwater runoff was included in the 1983 Environmental Impact Statement. Runoff from the project site will increase by less than 15 percent as a result of development, and this represents less than 0.7 percent of the total runoff to the Bay. The conclusions provided in the 1983 Environmental Impact Statement and current supplemental document are still valid.

Land Use Planning

Residential subdivisions exist within one-half mile of the project site on the Kaneohe side of the project. In addition, numerous single-family residential lots exist along Kamehameha Highway from the project site to Dillingham Highway. The typical lot sizes for single-family lots on the Kahaluu side of the property vary between 10,000 and 20,000 square feet. It is therefore believed that new residential development will be compatible with existing residential development.

1300 HEGENBACH STREET, HONOLULU 96817 - TELEPHONE 731-7549

3
Mr. Ronald A. Albu
Mrs. Kathryn Moani Albu
Page 2
October 16, 1986

Agricultural enterprises which currently occur on the project site are non-existent or, at best, insignificant. It is therefore believed that this statement is also valid as presented in the 1983 document and currently restated.

Your comment regarding aesthetic value to this site is slightly presented out of context. The 1983 Environmental Impact Statement as well as current supplement state that the site is choked with weed species and littered with our bodies and waste. A drive along Eastside Highway from Ewa beach reveals a substantial mass of abandoned vehicles followed by 10 to 20 single-family residences which are of substandard quality. Notwithstanding the foregoing information, the Revised Supplemental Impact Statement will be modified to state that the aesthetic value of this site is maintained in its existing condition.

Transportation

The current supplemental Environmental Impact Statement reviews regional traffic improvements which are being considered by governmental agencies. Your comment letter disputes the realization of these improvements and is also skeptical over funding. At the present time, the discussion of regional traffic considerations is still valid. In addition, Congress has just passed legislation moving $300 million forward.

Regarding scheduling of funding, the project is proposed to be implemented over a 5 to 7-year period which will not commence prior to the middle of 1988. The intent of this document is to demonstrate that there are currently proposed plans which recognize traffic congestion on the Trans-Island corridor as well as within Ewa Beach. It is further the intent of this document to recognize that these proposed improvements will accommodate Master Planned growth on the island and not just the one site project.

Funding for regional traffic improvements have not been analyzed in conjunction with this document since these considerations have been addressed during the planning process conducted by the various governmental agencies responsible for regional traffic consideration.

The Supplemental Environmental Impact Statement identifies that additional issues will be provided on a need basis. Should the need be greater for other areas, additional issues may or may not be provided in the project site area resulting in additional automobile traffic. We believe this is an accurate description of how bus service will be handled.

Mr. Ronald A. Albu
Mrs. Kathryn Moani Albu
Page 3
October 16, 1986

Education

During the consultation period, the State of Hawaii Department of Education indicates that Castle High School is operating at capacity and may require funding for additional classrooms. The Supplemental document will be revised to add an additional statement that the State taxes will pay for classroom space requirements created by the proposed project. It is not believed that a detailed discussion of the costs to provide classroom space for 15 to 20 additional Castle High School students is appropriate for this document.

Recreation

The shoreline adjacent to the project site is limited. Coastal activities are primarily related to Heeia Kea Pier and Small Boat Harbor. Therefore, it has been reported in the 1983 Environmental Impact Statement as well as current supplemental document that the major impact will be traffic at the Heeia Kea Small Boat Harbor entrance. Improvements to alleviate this impact are the creation of an intersection with turbine-lane channelization. It is not anticipated that the proposed project will generate a significantly greater number of pier users than any other residential area in the Heeia-Ahunai-Kahana area.

Your consultation comments as well as our response will be included in the Revised Supplemental Environmental Impact Statement.

Very truly yours,

GRIFF, RING & ASSOCIATES, INC.

Brian A. Gray

Blatt 1301-1
CITY AND COUNTY OF HONOLULU
DEPARTMENT OF GENERAL PLANNING

TO: DONALD A. CLEGG, CHIEF PLANNING OFFICER
FROM: JOHN P. WALEN, DIRECTOR
SUBJECT: SUPPLEMENTAL EIS FOR MICA KEA VALLEY

October 6, 1996

Mr. John P. Wahlen,
Director
Department of Land Utilization
City of Honolulu
Honolulu, Hawaii
96813

Mr. Wahlen,

We hereby submit a copy of your October 6, 1996 memorandum to Donald A.
Clegg, Chief Planning Officer, Department of General Planning, and by your
reference, Chief Management Officer. For the purposes of this supplemental EIS,
which should be filed with the following comments:

1. The relationship of the project to the Special
Development Management Area (SDMA) should be described in the
text of the EIS.

Thank you for the opportunity to comment.

Sincerely,

[Signature]

David A. Mills
Chief Management Officer
Department of Land Utilization
Mr. Ronald A. Glass
Chief Planning Office
Dept. of General Planning

October 6, 1986

Dear Mr. Glass,

Hai Salama has the following comments on the EIS.

Planning - This project is in a Coastal Zone Management area. There are very few coastal areas from Kamehameha to Kahaluu where the public has access. West Kauai with its pier and the neighboring State park and the Media Fishpond is a unique and publicly valuable area. Projects in a coastal zone are supposed to be coastal dependent, but repeated questions as to how this project is coastal dependent have gone unanswered.

Agriculture - The study says that West Kauai land is good for orchard and truck crops, but there is no mention of nursery operations, and all agriculture is considered not feasible because of water quality issues. Many successful farms rely on City water. While the study argues that there is a strong demand for agricultural and industrial lands, no mention is made of the demand for agricultural land. The study also states that there are no plans to use the land in the project, which could remain as open farmland.

Traffic - We have been told for years that K-31 is needed to solve increasing traffic problems. Yet this study claims that "peak traffic flow using all lanes-Kolea corridor has remained relatively constant" from 1975 to 1985. What is the truth? Will the traffic on Kamehameha highway be "dramatically"?

Social Characteristics - Contrary to the EIS, there are not "urban-type developments or both the Kahalua and Kamehameha sides of West Kauai." House on the Kahalua side are string out along the coast at the foot of a long, flat steep hill, with the upper portion of the hill used for conservation. On the Kamehameha side the long bridge and the large, undeveloped meadow land are between West Kauai and Kamehameha housing.

Nexta Pier - Repeatedly the EIS claims that the "only potential significant to existing uses of the pier will be traffic as related to its entrance." That is an incredible statement in light of the 160 new families across the street.

Housing - The study says, concerning the Planning Group: "While much progress was made, some concerns with respect to the physical and social impacts of the proposed uses remain unresolved." This implies that we were close to agreement, and that is not true. We remain far apart on the issue of density and affordability. We believe that the greatest need for housing in for those families that earn less than the median income, and the EIS housing study failed to identity and quantify housing needs by income categories. We have repeatedly opposed the 10X law/and requirement for two reasons. First, prices of those units actually meet only median income families. Second, as I have said before, the number of houses required for lower income families should reflect the percentage of families in those categories. Otherwise we are just going backwards as far as planning goes. More and more land has to be rezoned because out of every 100 housing units built, only 20 are for those who really need them. Of course there is some demand for market-rate housing, but who is buying? The EIS cites the rapid sale of the Castle Hills houses. They do not mention that over 60% of the buyers are already own a home, and that all buyers were well above the median income.

The EIS cites a First Hawaiian Bank study that says that high housing costs are directly related to high raw land costs and high site development costs. The data between Kauai and Koolau Estates is consistent in raw costs that are nearly four times higher than those in Central Oahu.

Use we have in discrimination in housing by income level. All of the median income places to live are reserved for those in the upper income level.

Thank you for the opportunity to comment on the EIS which we believe has some serious deficiencies and inconsistencies.

Charles Lever, Pres.
Hai Salama Notes & Kauai
47-352 Kalani St.
Kauai, 96744

cc: Dr. John Maule, Director
Dept. of Land Utilization
Kauai, 96744

XIII. A-25.
Mr. Charles Rapun, President
October 8, 1986

Mr. Charles Rapun, President

Dear Mr. Rapun:

We have received your letter dated October 8, 1986 regarding the subject project and are providing the following responses:

Planning:

Coastal Zone Management (CZM) Law does not mandate that projects in the Coastal Zone Management area be coastal dependent. In fact, the relevance of coastal dependency becomes diminished outside the Special Management Area. A large majority of the project is in fact outside of the Special Management Area boundaries. This portion which is in the boundary includes Kamehameha Highway which limits the coastal dependent approaches. Nonetheless, the project proposes a green belt along Kamehameha Highway to provide separation as well as park related commercial and industrial activities adjacent to Zela Pier. Both of these proposals complement the coastal dependent policies of the CZM Law.

Agriculture:

The project is devoting 3.5 acres to agriculture. The type of agriculture has not been specified and will be dependent on the tenant's desires. The agricultural lands are being preserved and it will be necessary to find agricultural tenants. Therefore, if there is a strong demand for agricultural lands, the project will be able to fulfill part of it.

Traffic:

Peak hour traffic has remained constant since the Hana-Koalea corridor have reached their peak hour capacity. What occurs though is that the peak hour period extends and larger daily traffic volumes are created.

The project's proposed intersection improvements will allow turning movements without interrupting through traffic. As regional traffic improvements are implemented, the overall vehicle traffic will improve. Based on the facts, it is believed the traffic on Kamehameha Highway will be tolerable. Further, the 1983 Environmental Impact Statement provided traffic distribution points showing tolerable traffic levels.

Social Characteristics:

Residential subdivisions begin within one-half mile of the project site in the Hana-Koalea direction and residential housing exists along Kamehameha in the Kahului direction. Typical lot sizes along Kamehameha Highway are 10,000 - 12,000 square feet with numerous minor streets. We believe the proposed residential housing will be compatible with the surrounding development.

Kela Pier:

Kela Pier is used primarily for boating and fishing. A majority of future boat owners will live across Kela Pier and infrequently use the pier. It is not anticipated that the proposed residential project will create any greater demand on the pier than any Alii Shores subdivision or Crown Terrace. We do believe that traffic is the major impact on the existing pier and an alternative is proposed to mitigate the impact.

Housing:

The 1983 Environmental Impact Statement provided an analysis regarding housing in the Vineyard area. This analysis has been updated and is included in the Supplemental Environmental Impact Statement. It is reported that there is still a strong demand to meet housing needs.

The project is proposing 50 low-density apartment units aimed at the low/moderate income group. In addition, existing residents are being provided space at subsidized costs. This is an allowance of 17 percent for the low/moderate income groups.

Site development and land costs will be more expensive on the project site than in Central Maui. The location of the land is more valuable than Central Maui. All these factors push up the housing costs. As a general rule, people with higher incomes will always be able to more readily find housing in other locations. This is simply reality. Seventeen (17) percent of this project is provided to offset what you refer to as "discrimination."
Mr. Charles Bepple, President
Page 3
October 15, 1986

Here are the details:

Should you have any questions, please contact our office.

Very truly yours,

GRAY, RING & ASSOCIATED, INC.

[Signature]

Brian L. Gray
Individuals responsible for the Social Impact Assessment and their qualifications rather than the name of the consultant firm, "Earthplan" with no address or supporting references.

Islandwide Priorities and Values

Data sources to assess the public opinion on the Heiau-Kea development included two surveys conducted by SHO Research and one conducted by the Honolulu Advertiser. The surveys of 1978(a), 1978(b), and 1984 are not listed in the reference cited. Furthermore, since they apparently applied to broad state plans, it is questionable if they were sufficiently detailed in the particular geographic area of this project to provide substantive guidance for social impact assessment at Heiau-Kea. Use of newspaper poll results is also highly suspect as they may not represent an unbiased source of information.

The community survey poll (p. 37) conducted by the Kohala Neighborhood Board is unacceptable as a measure of community opinion regarding this project. A 4% return is insufficient and provides no significant assessment information. Furthermore, the questions, as acknowledged in the DEIS, did not include any reference to Heiau-Kea, hence the few comments received should not be considered relevant to this project.

Issues and Concerns of Islandwide Organizations

The comments provided by several community organizations are cited but with the disclaimer that they should not be viewed as representing "islandwide" opinions since they have special interests. While this disclaimer may be valid, the same disclaimer should surely be applied to the use of data from statistically invalid polls, newspaper surveys, and Islandwide polls with minimal if any relevancy to the specific Heiau-Kea area.

Interviews with Study Area Individuals

A major portion of the assessment is devoted to a discussion of the comments provided by a group of selected individuals on certain topics relative to the development proposal. While we appreciate the attempt to select individuals familiar with the area we also find that this selection seems to be heavily weighted toward business interests, individuals who may not be responding independently, and includes individuals recommended by "other people" without clarification of who the "other people" are. If these "others" for example are also Study Area Individuals, then the independence of thought of the recommended participants can be questioned.
Finally, we note that each of the Study Area Individuals were instructed to speak strictly as individuals and not as organizational representatives. However, their names (Table 9) are listed with their organizational affiliation. This implies organizational concurrence when presumably none was given. We view this as a highly inappropriate representation. Furthermore, there was no effort to quantify comments of the interviewees nor to provide the questions for which responses were solicited.

In summary, the assessment suffers from some serious inadequacies. The methodology for the social impact assessment appears to be non-scientific and non-reproducible and as such does not provide an adequate document from which to evaluate the potential social environmental impacts related to this project.

The deficiencies noted either in the work itself or in the documentation of that work are sufficient to suggest that major changes will be needed in the final EIS if it is to be considered adequate.

Thank you for the opportunity to comment on this project.

Yours truly,
Jacqueline H. Miller
Acting Associate Director

CC: Donald A. Clegg
David B. Bills
Patrick Takehashi
Wallington Yee
Jun Nakatoka
Matthew Spriggs
OZQC

GRAY, HONG & ASSOCIATES, INC.
CONSULTING ENGINEERS

Mr. Jacqueline H. Miller
Acting Associate Director
University of Hawaii at Manoa
Environmental Center
Crawford Hall 317 - 2550 Campus Road
Honolulu, Hawaii 96822

SUBJECT: Bassia Kea Valley
Draft Supplemental
Environmental Impact Statement (EIS)

October 16, 1986

Dear Ms. Miller:

We thank you for your review comments dated October 8, 1986 regarding the Draft Supplemental EIS.

A response to your archeological concerns was addressed directly to Ms. Matthew Spriggs. The Revised Supplemental EIS will be modified to correctly show that your recommendations that were previously identified in the 1983 EIS are still valid for the current project.

A response to your comments concerning the Bassia Kea Social Impact Assessment has been prepared by Earthplan and is attached for your use.

Should you have any questions, please contact our office.

Very truly yours,

GRAY, HONG & ASSOCIATES, INC.

Brian L. Gray

End.

End.

End.
A list of Earthplan projects is appended to this letter (Appendix A). A description of CRI project experience is appended to this letter (Appendix B).

2. Several references were inadvertently omitted and these are appended to this letter (Appendix C) and will be added to the final list of references.

3. A note will be added to Table 9 to further emphasize that organizational affiliation is given strictly to reflect the informant's degree of community involvement and is not intended to imply organizational concurrence.

POINTS ON WHICH WE FAIL TO CONCUR

It is difficult to respond to some of the comments because, taken overall, they seem to indicate:

- a misunderstanding of the nature and purpose of social impact assessment, as opposed to social science research;
- a failure to evaluate information based on the intent of the information within the overall context of the report organization;
- a superficial understanding of public opinion research techniques; and
- the absence of any clear ideas or alternatives of what the reviewers think social impact assessment should be or should achieve.

What Is Social Impact Assessment?

The summary comment made by the reviewers is that "the methodology for the social impact assessment appears to be non-scientific and non-reproducible and so such does not provide an adequate document from which to evaluate social environmental impacts relating to this project."

This confuses social impact assessment (a form of policy research) with that branch of social science research seeking to emulate the model of physical "science." As such, it is reminiscent of initial (and long-settled) debates which appeared in social impact literature 10 to 15 years ago.

It is now fairly well accepted among social impact practitioners nationwide that the purpose of social impact assessment is to develop and non-reproducible and (1) inform the decision-making process, and/or (2) develop management actions to deal with problematic social outcomes of a proposed project.
Social impact assessment thus is an applied process which draws
sometimes from social science, but other times from
organizational development, political analysis, or simple
journalism. Evaluative criteria therefore have less to do with
science and reproducibility than credibility and utility.

Models of Social Impact Assessment

There are various models of social impact assessment (SIA), which
is in practice usually an eclectic process. In this instance,
the underlying model is issue-based, and the central goal is a
clarification of the nature of affected parties and their
interests.

At its best, this model focuses on public issues and concerns,
which are ultimately as qualitative as, say, "visual impacts." 
Public opinion may perhaps be quantitatively measured at a moment
in time by a survey, but public opinion is constantly shifting.
An issue-based SIA attempts to go deeper by tentatively
identifying the latent social dynamics which can be triggered by
various external forces.

In this sense, issue-based SIA is analogous to the inductive
theory-building phase of social science. The validation of an
SIA "theory" does not come, however, through quantitative
observations or experiments, but through the test of response
from involved parties and decision-makers. As of this writing,
no involved party has objected to the substantive aspects of this
analysis.

Comments on the Use of Polls

Many of the Environmental Center's critical comments about poll
results in the project SIA have to do with the lack of questions
about Heeia Kea or the inadequate number of interviews "in the
particular geographic study area of this project...

The report outline, the section headings and the introductory
text indicate that these poll results were part of the sections
presenting background social factors and activities at two specified levels:
(1) Islandwide and (2) Study Area. To criticize use of the polls
for not including questions about Heeia Kea is analogous to
not asking questions about the local community in the presentation of islandwide census information
because those do not describe the demographic characteristics of
expect project homeowners.

Sections 3.1 and 3.2 provide some indication as to how the
Islandwide and Study Area communities have responded to
development issues.
Comments on Special Interests

On page 40 of the report, the issues and concerns expressed by islandwide organizations on previous Heeia Kea proposals were identified. The statement that "It is stressed, however, that these concerns are not intended to represent the feelings of the total islandwide population, particularly because these organizations have specific or special interests" is not a disclaimer. Instead, it reminds the reader that these organizations have specific charters and goals which are designed to address portions of the total needs and desires of the islandwide population.

To say, however, that the Kahaluu and Kaneohe Neighborhood Boards, the Hawaii Opinion Polls and the other islandwide polls also stem from specific and special interests is untrue. These polls are independent and were intended to ascertain community reactions and feelings to general issues.

Comments on Interviews with Study Area Individuals

As explained on page 44 of the assessment, the interviews with Study Area individuals were conducted to:
- explore the issues raised by Study Area organizations on previous Heeia Kea proposals to see whether they still apply to the current proposal;
- to gain a better understanding of community's concerns; and
- to identify other concerns which have not been voiced.

As with the requirements of an Environmental Impact Statement, the SIA also identifies issues and explores ways to mitigate potential impacts. There was no effort made to quantify those issues raised. As stated on page 47, "a systematic poll is recommended if such priority identification of issues raised by the respondents is desired".

Those interviewed included people who participated in previous mediation efforts, and people who did not participate in these efforts. The latter included residents of nearby areas, business operators of the Heeia Kea site, people involved in the Heeia State Park and people involved in business organizations.

Contrary to the Environmental Center's statement that the respondents seem to be "heavily weighted toward business interests", these interviewed included:
- 4 current members of the two Neighborhood Boards.
- 5 people who have key roles in community-oriented organizations or agencies.
- 4 people who live either on or near the project site.
- 2 people who are involved in business organizations, and
- 2 people who operate a business directly across the street from the project site.

Further, a number of these people have direct knowledge of community concerns regarding the development of Heeia Kea because they had, at one time, been involved in submitting comments on the project.

This breakdown will be added to the SIA so that the reader also has a better indication of the origin of issues discussed.

The reason the respondents were asked to speak as individuals, rather than as organizational representatives, is simple. Most of their organizations have not yet taken a position on the current proposal. It would be misleading for them to represent a position if a vote had not yet been taken. If their organization had or will take a position, then they would submit such information to the proper agencies.

The Environmental Center's inference of "organizational concurrence" is erroneous, as it was stated that their views were solicited as individuals. All respondents agreed to this criteria. In fact, a few made it clear that they do not wish to speak for the entire organization. Providing the respondents' organizational affiliation was merely some indication of the cross-section of ideas and feelings presented on this project.

The concern that the respondents included "individuals who may not be responding independently" is vague, in that it is not understood from whom they should be independent. As stated on page 44, "an effort was made to select individuals who collectively represented a diversity of interests". Those that were contacted obviously have an interest -- they work or live in the area, or have been involved in previous proposals for Heeia Kea.
Please contact me if you need further information or clarification on this matter.

Sincerely yours,

EARTHPLAN

Bern Cabacungan
Enclosures

cc: Dr. John Knox
John Dyer, The Gentry Companies
Constance Lau, Hawaiian Electric Company

APPENDIX A

EARTPLAN
CURRENT AND PAST PROJECTS

- Alexander Hanor, Oahu: Research and writing for the Business Plan of a proposed 150-bed elderly care home

- Eva Marina, Inc, Central Oahu: Social impact factors for rezoning application for 154.7 acres

- Eva Marina, Increment II, Central Oahu: Social impact factors report for rezoning application for 444.6 acres

- Eva Marina Golf Course: Report on Planning, Environmental and Engineering Considerations for Eva Marina Golf Course for use in the Petition for a Land Use Boundary Amendment

- Hanalei Beach Resort, Kauai: Facilitation of community dialogue for proposed resort on 33 acres

- Hana Kea Development, Windward Oahu: Social impact factors for Development Plan amendment request and assistance in facilitation of community dialogue for the development of 102 acres

- Honua Honomalii Fall Expansion: Design and implementation of community dialogue program

- Kawainui Master Plan, Kauai, Kauai: Development Plan and Environmental Assessment for long range planning recommendations concerning 10,000 acres of the State Department of Hawaiian Home Lands

- Kuliwaha, Wahina: Assistance in social impact assessment for the Environmental Impact Statement and assistance in facilitation of community dialogue for the proposed resort expansion and job training program

- Laue Job Study: Assistance in employment study conducted in conjunction with the proposed final increment of Mililani Town, Central Oahu

- Makawao Forest Reserve, North Kohala, Hawaii: Facilitation of community dialogue for proposed resort on 1,100 acres

- Makaha Sanitary Landfill, Oahu: Facilitation of community dialogue

- Maui Olia, Central Oahu: Certification of Need for the proposed comprehensive medical complex, including hospital, long-term care facility and medical office building


Small Watercress Residential Cluster, Central Oahu: Preparation of social impact, housing and public policy sections for the Development Plan Amendment for proposed 14-unit cluster.

Various projects in Wailuku, Maui: Petition for District Boundary Amendment.


Makalua Estates, Central Oahu: Development Plan Amendment Request for 276-acre residential development proposed by Castle and Cooke.

Makalua Estates, Central Oahu: Demographic impacts for planned residential development proposed by the City and County of Honolulu.

Wailuku Police Station Relocation: Environmental Assessment.

EARTHPLAN

LIST OF CLIENTS

Alexander Maner, Inc.
City and County of Honolulu Department of Housing and Community Development
Community Resources, Inc.
Environmental Communications, Inc.
Finance Realty/Naheko Properties
Larry Fukunaga, Inc.
GACI, Inc.
GMP and Associates, Inc.
Greatwest Hospitals, Inc.
Hawaiian Dredging and Construction
Hawaiian Electric Company
Honpa Hongwanji Hawaii Betsuin
Kailina Development Company, subsidiary of Prudential Life Insurance

Ty Kasao
Malama-Gentry Joint Venture
Makulea Development Company, subsidiary of Northwestern Mutual Life Insurance Company
MHN and Associates, Inc.
Oahu Land Engineering Partners
Oceanic Properties, subsidiary of Castle and Cooke, Inc.

Ocean Thermal Corporation
Pacific Standard Life Insurance Company
Waiho Development, Inc.
Woolsey Miyahara and Associates, Inc.
APPENDIX B

PROJECT EXPERIENCE:
Community Resources; J. M. Knox

Land Use and Other Socio-Economic Research

- Socio-economic assessment and community dialogue program for proposed Village Park subdivision expansion (1985-86).
- Social impact portions of PRU application for Dole Pineapple cannery relocation (1985-86).
- Surveys on community issues such as new Maui airport, road pricing, Waipahu residential development, unemployed benefits for strikers, Waianae farm lands, and numerous political polls (1979 – present).

Tourism

- Social impact assessments for proposed resorts or resort expansions at Princeville (1980, 1982); Mahalina, North Kohala (1980); Waikoloa (1984-85); Kailua (1984-86). Kailua work included job training program development.
- Survey on Out-of-State Recreational Travel by Hawaii Residents, published by Hawaii State Department of Planning and Economic Development (1980).
- Visitor satisfaction and market research surveys for a major Hawaii hotel chain, a luxury Kauai resort, a national rental car company, touristed publications, and an Interisland airline. (SMS Research, 1981-83.)
- Development of shoreline access ordinance for resorts and other forms of development (County of Hawaii, 1986).

Energy/Resource Development


COMMUNITY RESOURCES CLIENTS

- A. Lono Lymen, Inc.
- Bechtel/Thermal Power Co.
- Belt, Collins and Associates
- Campbell Estate
- Decision Analysts Hawaii, Inc
- Finance Realty
- Fred Besselman/Honolulu City Council
- Group 70
- Grove Farms
- Hawaii State Department of Planning and Economic Development
- Hawaiian Dredging & Construction Co.
- Helber, Hastedt, Van Horn, & Kimura
- John Ryan Co. (Colorado)
- Kailua Development Co.
- Matson & Co.
- MCM Planning
- Ocean Thermal Corp.
- Oceanic Properties/Millilani Town, Inc.
- Princeville Development Corp.
- SMS Research
- TAW Inc./U.S. Department of Energy
- University of Hawaii, School of Travel Industry Management
- Waikoloa Development/Hyatt/Scemeter
- Waikele Development Co.
XIV. SUMMARY OF UNRESOLVED ISSUES

The following is a summary of issues which were included in the 1983 EIS and remain unresolved as of this writing:

1. No commitment of potable water availability has been made for the project. However, this is not unusual based on the fact that the Board of Water Supply will not issue any commitment until plans have been submitted and approved. In addition, a water master plan must be prepared and submitted to the Board of Water Supply.

2. The proposed sewage pump station system has been described in principle in this document. However, the specific details regarding construction have not been completed. This issue will be analyzed in greater detail during the development process. Construction plans detailing connection to the City and County system will be prepared and will require approval. In principle, connection to the City and County system will follow the City's Facilities Plan.

3. Protection of Kaneohe Bay during construction will be provided through use of erosion control measures. In principle, the measures proposed are the use of sediment traps, sediment berms and ponds as necessary. An erosion control plan for the project must be designed and approved by the City prior to construction.
4. There is a wide range of opinion how the project will socially impact on the area. The range is from favorable to unfavorable and is subject to change and in fact, organization positions have been modified with respect to this project. While social impacts cannot be totally resolved, it is likely that mutually satisfactory mitigation measures will bring this project closer to resolution.
APPENDIX A

MARKET STUDY - HOUSING DEMAND
MEMORANDUM

To: Sheryl Seaman, AIA
   Group 70

From: Bill Dornbush
       Cowell & Co., Inc.

Date: January 31, 1985

Subject: Potential Hawaiian Electric Company Project,
         Heeia Kea, Koolaupoko District, Oahu

In response to your request, we are providing our suggested input with respect to the Development Plan Request for the proposed Heeia Kea project. During the last 2 years, our firm has completed the following studies for Hawaiian Electric Company, Inc.:

Title of Study                                    Date of Study
"Market Study Regarding Industrial and Business-
Zoned Land in Kaneohe and Surrounding Areas,
Koolaupoko District, Windward Oahu"            August 31, 1984
"Analysis of Oahu General Plan Population
Guidelines With Respect to the Koolaupoko
Development Plan and Potential Housing"       April 10, 1984
"Preliminary Market Study Covering Demand for
Housing With Respect to Proposed Heeia Kea
Residential Project"                          January 7, 1983
"Preliminary Market Survey Covering Residential
Projects at Windward Oahu"                     November 1984

The following is our input regarding the items you requested us to comment on:

1. Description of the Problem or the Need
   Forming the Basis for the Requested Use

It is a recognized fact that one of the major problems facing the residents and government of the City & County of Honolulu is to provide an adequate supply of new housing for its population. The demand for new single-family homes far outstrips the annual number of units now being completed on the Island of Oahu.

During recent years, production of new single-family homes on the Island of Oahu has declined significantly from the annual amount of new homes produced during typical years in the 1970’s. A summary of single-family residential development on the Island of Oahu for the years 1967 through 1983, based on research by the Bank of Hawaii, is shown on the following page.
SINGLE-FAMILY RESIDENTIAL DEVELOPMENT
Island of Oahu, 1967-1983

<table>
<thead>
<tr>
<th>Year</th>
<th>House</th>
<th>Lot</th>
<th>Units</th>
<th>Average Price</th>
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<td>1967</td>
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<td>6,180</td>
<td>1,699</td>
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</tr>
<tr>
<td>1968</td>
<td>1,242</td>
<td>6,567</td>
<td>2,655</td>
<td>35,307</td>
</tr>
<tr>
<td>1969</td>
<td>1,269</td>
<td>6,381</td>
<td>2,482</td>
<td>42,120</td>
</tr>
<tr>
<td>1970</td>
<td>1,371</td>
<td>6,224</td>
<td>3,614</td>
<td>41,286</td>
</tr>
<tr>
<td>1971</td>
<td>1,247</td>
<td>6,252</td>
<td>3,477</td>
<td>45,673</td>
</tr>
<tr>
<td>1972</td>
<td>1,338</td>
<td>6,202</td>
<td>2,546</td>
<td>56,280</td>
</tr>
<tr>
<td>1973</td>
<td>1,368</td>
<td>5,627</td>
<td>1,771</td>
<td>63,809</td>
</tr>
<tr>
<td>1974</td>
<td>1,601</td>
<td>6,281</td>
<td>700</td>
<td>53,205</td>
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<tr>
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<td>1,341</td>
<td>6,281</td>
<td>671</td>
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<td>1,259</td>
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<td>658</td>
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</tr>
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<td>1978</td>
<td>1,442</td>
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<td>1,493</td>
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<td>1981</td>
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<td>1982</td>
<td>1,232</td>
<td>5,037</td>
<td>308</td>
<td>137,267</td>
</tr>
<tr>
<td>1983</td>
<td>1,173</td>
<td>4,380</td>
<td>772</td>
<td>135,357</td>
</tr>
</tbody>
</table>

Note: The above table involves private projects.

Research indicates a strong demand for new single-family residential units in the Kaneohe area of the Koolau district. The first phase of the Castle Hills residential project situated at the corner of Likelike and Kahekili Highways provides an excellent example of the strong demand for new housing. The first 63 units in this project were sold within a few days after the project was announced in August 1984. Prices of single-family leasehold homes in this tract ranged from about $150,000 to over $200,000.

According to "Economic Indicators", published by the Research Division of First Hawaiian Bank, December 1983, Hawaii's extremely high home prices and its shortage of housing are primarily due to the restrictive land use policies established in the State of Hawaii, and particularly on the Island of Oahu. According to the report by First Hawaiian Bank, high housing costs are directly related to high raw land costs and high site development costs primarily due to the following: (1) developers bear the full cost of roads, curbs, sewers, etc., whereas in many mainland locations, the government provides these facilities and spreads the cost among all taxpayers, (2) the price of cement, a large cost factor in site preparation, is higher here,
(3) much of our residential land is hilly and difficult to develop, as most land is classified Agriculture, and (4) regulatory requirements for subdivisions are unnecessarily elaborate. Hence it is the cost of the site that accounts for a great part of Hawaii's higher housing prices."

Presently, most future growth for the Island of Oahu is planned for the Ewa and Central Oahu Districts of the island. However, it is important to recognize that major infrastructure systems are presently not available in the Ewa area and, therefore, new housing cannot be built there for several years.

As an appendix to the General Plan of the City & County of Honolulu, population guidelines have been developed with artificial population ceiling levels. These artificial ceilings may or may not have any relationship with reality with respect to the actual demand where people want to live on the island.

For the year 2005, just over 20 years hence, the State projected a resident population of 954,500 for the City & County of Honolulu (Island of Oahu). Based upon these 1984 projections, the recommended population for the Koolaupoko District in 2005 would be in the range of 118,358 (954,500 x 12.4 percent) and 129,812 (954,500 x 13.6 percent).

According to "Land Supply Review: Population Implications of the Development Plans" by the Department of General Planning, City & County of Honolulu, July 1984, the Koolaupoko Development Plan, as amended June 8, 1984, would provide for a future population of 125,600. This total includes 111,200 persons, estimated as of 1982 (plus 9,100 under the Additional category and 5,300 under the Special category). The Special category includes various design districts and/or ohana zoning.

It is noted that the Development Plans are supposed to represent a "20-year horizon". According to the Department of General Planning, the adopted 1984 Koolaupoko Development Plan provides for a total potential population of 125,600. This is below the upper population guideline of 129,812 residents in Koolaupoko in the year 2005.

Based upon the above data, the 1984 Koolaupoko Development Plan provides for a total population of 125,600, which is about 4,200 residents below Koolaupoko's upper population guideline. Assuming 3.5 residents per housing unit, this indicates that about 1,200 new residential units will be needed to provide housing for the future population of the Koolaupoko District. It is important to recognize that the "Land Supply Review" study, prepared by the Department of General Planning, assumes that all of the land designated on the 1984 Koolaupoko Development Plan would be developed. We believe this is an unrealistic assumption, as many parcels may not be developed due to lack of infrastructure, the fact that some property
owners do not desire to develop their property and/or other factors. In our opinion, restricting the supply of Residential-designated land in the Koolau District, as well as elsewhere on the Island of Oahu, unduly restricts supply and, therefore, substantially increases the price of undeveloped land available for new housing. The end result is higher housing costs on the Island of Oahu.

In summary, we believe there is strong demand for new single-family housing in the Koolau District of the Island of Oahu. The location of the Heeia Kea property provides an attractive setting for new residential development, as the site offers excellent views to Kaneohe Bay and is in convenient driving distance to shopping facilities, schools, public facilities and other establishments in the Kaneohe area.

Approximately two acres of the Heeia Kea project are planned for commercial development. According to a study prepared by Cowell & Co., Inc. in August 1984, there were approximately 114 acres of Business (B-2) zoned land in the Kaneohe and Kahalu'u areas of the Koolau District. The study indicated that only about 6 acres of the Business-zoned land are vacant and available for new development. The vacant land reflects about 5 percent of the total Business-zoned land in the Kaneohe to Kahalu'u area and, in our opinion, is an inadequate amount of Business-zoned land to serve this area over the next 10 to 20 years.

C. Location of the Site Vis-A-Vis the Intended Market for the Proposed Use

The State Land Use Commission has classified 102 acres of the Heeia Kea property as Urban. Although Heeia Kea Valley itself is undeveloped, except for the existing older residential units and the Hawaiian Electric Company base yard, most of the lands along Kamehameha Highway situated immediately north of Heeia Kea are improved with single-family housing units. Lands located south of Heeia Kea Valley and beyond Heeia Kea Marsh are also developed with single-family housing and are located on the periphery of Kaneohe town.

Kaneohe town is situated less than 2 miles south of the Heeia Kea property. The surrounding areas of Kahalu'u and Ahuimanu also contain significant amounts of residential units. It is important to recognize that the Heeia Kea site represents one of the few remaining undeveloped land holdings that is ocean-oriented and will offer excellent views to the ocean for occupants of the future housing. In summary, we believe that the site is well located with respect to the intended market and will provide an attractive location for its future residents.
H. Availability and Affordability of 
Housing in the Area for Local Residents

An article from the WINDWARD SUN PRESS, November 9, 1983, provides an 
excellent summary of the housing inventory for the Windward Oahu areas of 
Kahaluu, Kaneohe, Kailua and Waimanalo. The article is based upon data 
collected by the U.S. Census Bureau in 1980. As discussed in that article, 
the Kahaluu area contained 1,347 owner-occupied units with a median home 
value of $139,100, the highest of any Windward Oahu area discussed in the 
article. The median value of the 5,655 owner-occupied units in the Kaneohe 
area was $122,500. This is somewhat below the median value of $130,400 for 
the 78,096 owner-occupied units on the island of Oahu.

According to the census data, there were 9,698 occupied housing units in the 
Kaneohe area. The median number of persons per unit in the Kaneohe area was 
3.43, somewhat lower than the median for owner-occupied units which was 3.51 
in the Kaneohe area. Further details regarding the housing stock in the 
Kaneohe and Kahaluu areas surrounding the subject property are summarized in 
Exhibit 2 which is attached.

Research indicates that there is a strong demand by local residents for 
housing units in the Kaneohe area. We believe that the proposed residential 
units at Heeia Kea will find excellent market acceptance and satisfy a small 
portion of the demand for additional housing units in the Kaneohe area.

WJD:co

Attachments

cc: Hawaiian Electric Company, Inc.
Hawaii's Unaffordable Housing

Average home prices are high all over the nation, but it is well known that they are highest of all in Hawaii. The Honolulu Board of Realtors Multiple Listing Service showed an average price of $184,559 for single-family homes sold in the first seven months of 1981, while for the same period a National Association of Realtors survey of 15 major metropolitan areas showed the average price of a San Francisco home, most of the cities surveyed, at $133,900—$50,000 less than Honolulu's average—while prices in the other cities ranged downward to Pittsburgh's $99,000.

Yet Honolulu's construction costs are not much above average, according to McGraw Hill Housing magazine surveys of the labor and material costs of building the same good-quality 1,500-square-foot ranch house in 100 cities. The August 1981 survey showed that the cost of constructing this house in Honolulu, at $80,684, was considerably lower than in Fresno at $88,980 or San Francisco at $86,715, somewhat lower than in Cleveland and San Jose, and about the same as in Los Angeles, Sacramento, Stockton, and Detroit. Material costs to build the house in Honolulu, at $46,684, were only a couple of hundred dollars more than in Fresno and Cleveland even though most of our building materials must be shipped 2,000 miles. Labor costs in Honolulu, at $34,000, were lower than in these eight cities, though higher than the U.S. average of $29,790.

The Housing survey does not include land costs, site development costs, developers' overhead, contractors' profit, or local taxes like Hawaii's heaviest excise tax on contracting. All of these must be added into the final sales price. Raw land is more expensive in Hawaii than in most mainland areas. Site development costs are higher here because (1) developers bear the full costs of roads, curbs, sewers, etc., whereas in many mainland locations the government provides these facilities and spreads the cost among all the taxpayers. (2) The price of cement, a large factor in site preparation, is higher, here, much of our residential land is hilly and difficult to develop, as most of our residential land is classified agricultural, and (4) regulatory requirements for subdivisions are unnecessarily elaborate. Hence it is the cost of the site that accounts for a great part of Hawaii's higher housing prices.

In 1960 Federal Housing Administration statistics showed the average market price of residential sites in Hawaii at $6,502, roughly two and a half times the U.S. average of $2,492. In 1961 Hawaii became the first state to pass a land use law, in which we seem to take great pride. By 1980 the FHA statistics showed the average Hawaii site price at $60,048—about five and a half times the U.S. average of $11,009, and three times the $30,853 average for California, the second most expensive state. Worse yet, the average lot size in Hawaii is 5,901 square feet, compared to the U.S. average of 12,807, which works out to $10.18 per square foot for Hawaii lots—12 times the U.S. average of 86¢ per square foot. Here we have a classic case of market supply and demand. Demand is high because Hawaii is a desirable place to live, and supply is short because we have chosen to legislate severe restrictions on land use.

Ohana zoning (permitting construction of a second residence on a lot zoned for one) is the first easing in the last two decades of restrictive government policies that have helped to drive home prices so high. If homeowners take advantage of it, Hawaii's housing stock can be increased considerably at the almost half price; just the construction cost without the lot cost. But any lot that can hold two houses will likely become even more valuable. Residential lots will continue to escalate in price unless a great deal more land is classified urban and zoned residential.

The President's Commission on Housing reported in 1982 that nationwide the cost of land as a percent of the total cost of single-family homes increased from 19 percent in 1970 to 24 percent in 1980. Hawaii's lot price is 40 percent or more of the total package. The Commission commented: "Excessive regulation raises housing costs by restricting available land, imposing unnecessary requirements in site development and construction standards, and lengthening the time needed to obtain regulatory permits. Many studies have examined the impact of governmental regulations on the costs of single-family homes, and all the studies have a common finding: regulations increase costs—as much as 25 percent of the selling price in some cases."

Land use laws and zoning and building regulations protect the established homeowner, who wants his environment nice and his real estate value high. As long as we cry, "No developments in my neighborhood!" and "No building on agricultural land!" we perpetuate the residential land shortage that causes our higher home prices. Government regulations presumably reflect the will of the citizens, and the citizens have chosen (perhaps wisely, in view of Hawaii's limited land area and special beauty) to keep Hawaii green, and to let the new generation of homeowners pay the price—if they can.

There is no way to have both restrictive land use policies and affordable housing. Ohana zoning is only one small step in the right direction.
Area homes are new and costly
Kahaluu has newest homes, Kailua leads in mortgage costs

Kahaluu residents own the newest and most expensive homes in the Windward area. Kahaluu homeowners pay the highest monthly mortgages and rents. Kaneohe has the lowest percentage of homes built before World War II and Waimanalo has the highest.

That is how Windward neighborhoods compare in some of the housing-related statistics provided by the U.S. Census Bureau. The data collected in 1980 is tailored for each community, following the boundaries of the island's 33 neighborhood board districts.

It shows that based on the median value of owner-occupied homes, Kahaluu and Kailua rank in the top third of island neighborhoods with the most expensive homes.

The term "median" means that half of the homes in the neighborhood have a value of more than the median figure, and half are priced at less.

The median values of Kahaluu and Kailua homes are about the same but higher than the Oahuwide figure of $130,400. But home values in Kaneohe and Waimanalo fall below that mark.

The median value of owner-occupied homes in Kaneohe is $122,500 and the Waimanalo median is $68,500. The Waimanalo figure ranks 32nd among the 33 neighborhoods.

One reason Kahaluu homes are more expensive may be because they are generally newer than those in the other three neighborhoods. A total of 48.5 percent of the Kahaluu housing units were built in 1970 or later. Only 2.7 percent were built before 1940.

In Kaneohe, 28.9 percent of the homes were built after 1970, and 2 percent were standing before 1940. Kailua homes are older, with 20.5 percent built since 1970 and 3.4 percent built before 1940.

See CENSUS on A-2.
Kahaluu, Kaneohe, Kailua mortgages, rents top Windward payments

CENSUS from A-1

before 1940.

A substantial number of homes in Waimanalo — 37 percent — were built in the last 13 years. But the community also has a higher concentration of older homes, with 10.4 percent built before 1940.

Home ownership

The 1980 census figures show that the majority of homes in all four Windward communities are owned by the persons who live in them. The neighborhoods with the highest percentages of owner-occupied homes are Kaneohe and Kailua.

Of the 12,099 housing units in Kailua, 72.3 percent are owned by the occupants. Kaneohe is right behind, with 72 percent of its 5,638 housing units lived in by the owners.

The percentages of owner-occupied homes are somewhat lower in Kahaluu and Waimanalo, but they are still considerably higher than the islandwide figure of 49.9 percent.

Out of 3,360 housing units in Kahaluu, 66.2 percent are owner-occupied. The figure in Waimanalo is 62.5 percent, of 2,137 homes.

Mortgages/Rents

Kailuans pay higher monthly mortgage fees and rents than their neighbors, according to the statistics.

The median mortgage payment for a Kailua homeowner is $552, including real estate taxes, property insurance and utilities. The median rent, also including utilities, is $428.

These 1980 rent figures, however, date before the military rent subsidy plan took effect. Many observers say that plan has driven up civilian rents in districts with large military populations.

The median payments in Kahaluu are $532 for mortgages and $390 for rents.

In Kaneohe, mortgages are lower, but rents are slightly higher. The Kaneohe numbers are $442 for mortgages and $393 for rents.

Homeowners in Waimanalo pay a median monthly mortgage fee of $333, and renters pay $255.

Length of residency

Kaneohe and Kailua have high percentages of long-term residents — 41.5 percent of Kaneoheans and 32.1 percent of Kailuans have lived in their homes for 10 years or longer, the census data says.

But both communities have large populations of renters who apparently like to move around. A whopping 48.4 percent of the renters in Kailua told census takers that they had moved into their rental units in the 15 months prior to the census.

Kaneohe wasn't far behind. A total of 43.6 percent of the renters also said they had relocated in the last 15 months.

In Waimanalo, 33 percent of the residents said they had lived in their homes for 10 years or more, and 27.7 percent of the renters said they had moved within the 15 months before the census.

Only 22.7 percent of Kahaluans said they had lived in their homes for a decade or longer. A total of 31.9 percent of Kahaluu renters said they had relocated in the last 15 months.
The census says...

<table>
<thead>
<tr>
<th>HOME VALUE</th>
<th>Oahu</th>
<th>Kahaluu</th>
<th>Kamehameha</th>
<th>Kailua-Waimanalo</th>
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<tr>
<td>Owner-occupied units</td>
<td>78,096</td>
<td>1,247</td>
<td>5,655</td>
<td>7,611</td>
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<tr>
<td>Less than $10,000</td>
<td>130</td>
<td>3</td>
<td>3</td>
<td>2</td>
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<tr>
<td>$10,000 to $14,999</td>
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<td>7</td>
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<td>$15,000 to $19,999</td>
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<td>2</td>
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<td>3</td>
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<td>$25,000 to $29,999</td>
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<td>55</td>
<td>55</td>
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<td>5</td>
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<td>$100,000 to $149,999</td>
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<td>384</td>
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<td>$200,000 or more</td>
<td>11,822</td>
<td>173</td>
<td>559</td>
<td>1,076</td>
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<tr>
<td>Median</td>
<td>$130,400</td>
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<tr>
<th>YEAR HOUSEHOLDER MOVED INTO UNIT</th>
<th>Oahu</th>
<th>Kahaluu</th>
<th>Kamehameha</th>
<th>Kailua-Waimanalo</th>
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<tr>
<td>Owner-occupied housing units</td>
<td>114,793</td>
<td>2,245</td>
<td>6,978</td>
<td>8,744</td>
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<td>1978-March 1980</td>
<td>14,917</td>
<td>399</td>
<td>686</td>
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<td>1979-1978</td>
<td>27,906</td>
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<td>1970-1974</td>
<td>22,412</td>
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<td>1960-1969</td>
<td>28,370</td>
<td>400</td>
<td>2,766</td>
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<td>1950-1959</td>
<td>14,467</td>
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<td>856</td>
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<td>1949 or earlier</td>
<td>6,701</td>
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<th>MORTGAGE STATUS AND MONTHLY OWNER COSTS</th>
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<tr>
<td>Owner-occupied units</td>
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<td>With a mortgage</td>
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<td>$100-$149</td>
<td>593</td>
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<td>38</td>
<td>39</td>
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<td>$150-$199</td>
<td>1,732</td>
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<td>147</td>
<td>103</td>
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<td>$200-$249</td>
<td>1,835</td>
<td>16</td>
<td>147</td>
<td>344</td>
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<td>$250-$299</td>
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<td>$300-$349</td>
<td>4,804</td>
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<td>361</td>
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<td>$350-$399</td>
<td>4,975</td>
<td>109</td>
<td>323</td>
<td>341</td>
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<td>$400-$449</td>
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<td>638</td>
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<td>$500-$549</td>
<td>7,646</td>
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<td>572</td>
<td>870</td>
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<td>$600-$749</td>
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<td>835</td>
<td>1,153</td>
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<tr>
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<td>835</td>
<td>1,738</td>
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<tr>
<td>Median</td>
<td>$494</td>
<td>$532</td>
<td>$442</td>
<td>$552</td>
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<th>GROSS RENT</th>
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<tr>
<td>Renter-occupied units</td>
<td>113,384</td>
<td>1,081</td>
<td>2,643</td>
<td>3,297</td>
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<tr>
<td>Median</td>
<td>$315</td>
<td>$390</td>
<td>$393</td>
<td>$426</td>
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<th>NO. OF ROOMS</th>
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<tr>
<td>Year-round house units</td>
<td>250,866</td>
<td>3,607</td>
<td>10,049</td>
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<tr>
<td>Median</td>
<td>4.3</td>
<td>5.1</td>
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<th>PERSONS IN UNIT</th>
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<td>Occupied housing units</td>
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<td>3,360</td>
<td>9,698</td>
<td>12,099</td>
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<td>Median, occupied housing units</td>
<td>3.24</td>
<td>3.43</td>
<td>3.43</td>
<td>3.43</td>
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<tr>
<td>Median, owner-occupied units</td>
<td>3.32</td>
<td>3.31</td>
<td>3.31</td>
<td>3.40</td>
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<tr>
<td>Median, renter-occupied units</td>
<td>3.27</td>
<td>3.24</td>
<td>3.24</td>
<td>3.76</td>
</tr>
</tbody>
</table>
MEMORANDUM

To: Sheryl B. Seaman, AIA
Group 70

From: Bill Dornbush
Cowell & Co., Inc.

Date: February 7, 1985

Subject: Pohakea Point Condominium Project, Kaneohe, Oahu

In response to your request to provide additional data regarding the demand for low-density condominium apartments in the Kaneohe area, we are summarizing the Pohakea Point condominium project recently put on the market. This project is being developed by Swire Properties (Hawaii), Ltd. The project is located off Lilipuna Road, overlooking Kaneohe Bay. It is situated directly adjacent to the Puu Alii condominium project developed by a joint venture between Mike McCormack and Swire Properties.

The total project site contains about 32 acres that will be developed with 10 buildings containing a total of about 250 condominium apartment units. Based upon the proposed 250 units in the project and 32 acres of land, the land use density of the project approximates 7.8 units per acre. The project is designed with the units terraced up the hillside.

Presently, only two buildings, representing the first two increments, containing a total of 41 residential apartments are being marketed on a leasehold basis. The units consist of one-story apartments with either 2-bedrooms/2-baths or 3-bedrooms/2-baths, or two-story apartments with either 2-bedrooms/2-baths or 3-bedrooms/2-baths.

The 2-bedroom units range in size from about 1,017 square feet to 1,202 square feet of living area. The 2-bedroom units are priced in the range of $122,500 to $138,000 per apartment.

The 3-bedroom units range in size from about 1,154 square feet to 1,258 square feet of living area. The 3-bedroom units are priced in the range of $135,000 to $147,500 per apartment.

The project was recently put on the market for sale only to prospective owner-occupants. We are informed that about 25 units in the project have been committed for purchase and that there are several backup offers. We are also informed that the greatest demand was for the single-story apartments and the units with better views.

The successful marketing of these units indicate there is a strong demand for attractively designed 2 and 3-bedroom, low-density apartment units in projects that enjoy a hillside location offering views to Kaneohe Bay.

cc: Hawaiian Electric Company, Inc.
APPENDIX B

TRAFFIC IMPACT ANALYSIS, HEEHA KEA PROJECT
TRAFFIC IMPACT ANALYSIS
HEEIA KEA PROJECT

Gray, Hong & Associates, Inc.
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TRAFFIC IMPACT ANALYSIS
HEEIA KEA PROJECT

1. INTRODUCTION

The purpose of this Traffic Impact Analysis is to identify traffic at three locations which will be utilized by homeowners residing at the Heeia Kea project site. These locations are Kamehameha Highway fronting the project, the intersection of Kamehameha Highway/Lilipuna Road/Eaiku Road and the intersection of Kahekili and Likelike Highways. For the purpose of worst case analysis, it has been assumed that 500 units will ultimately be developed at the Heeia Kea project site.

2. TRAFFIC ADJACENT TO THE PROJECT

Since the completion of Kahekili Highway there has been no predictable growth trend in average daily traffic on Kamehameha Highway fronting the project. The average daily volume between calendar years 1972 and 1983 has varied between 4,997 vehicles and 5,594 vehicles. For the purpose of analysis, it has been assumed that the project will have two main intersections with Kamehameha Highway.

The existing peak hourly traffic as well as projected peak hourly traffic resulting from 500 additional units have been shown on Figures 1 and 2. Figure 1 represents a project intersection on the Kaneohe side of the property and Figure 2 represents an intersection on the Kahuku side of the property.

The total A.M. peak hourly vehicles will increase from 650 to 923 on Kamehameha Highway heading toward Kaneohe. There will be a definite increase in traffic on this stretch of Kamehameha Highway. For comparative purposes the
total projected peak hourly volume upon ultimate development of 500 units will produce a similar peak hourly volume to that which presently occurs on Kamehameha Highway between the Hygienic Store and Waiahole Valley Road. The use of channelized intersections as shown in Figures 1 and 2 is solely to mitigate the effects of additional traffic.

3. **TRAFFIC AT THE INTERSECTION OF KAMEHAMEHA HIGHWAY/HAIKU ROAD**

   The subject intersection has been analyzed based on data obtained December 6 and 7, 1983. For projection purposes, it has been estimated that half of the peak hour traffic generated from the project passes through the Kamehameha Highway/Haiku Road intersection. Based on 500 units at the Beelia Kea project site, the traffic passing through the subject intersection from the Beelia Kea Project is 175 vehicles. Figures 3 and 4 distribute existing as well as proposed traffic to this intersection. Figures 5 and 6 show the critical lane calculations. The projections do not exceed the limit recognized as unacceptable by normal traffic engineering standards for an urban intersection. When the critical lane projections exceed 1,500 vehicles, there is not enough green time to allow vehicles to clear the intersection and the intersection clogs.

4. **KAHEKILI HIGHWAY AND LIKELIKE HIGHWAY INTERSECTIONS**

   This Traffic Impact Analysis has utilized data contained in the 1970 census, 1980 census as well as State DOT data including annual summaries and 15-minute interval counts in an attempt to quantify traffic trends at the Kahekili/Likelike Highway intersection.

   Figure 7 tabulates peak hour traffic for morning and evening on Kahekili Highway. In addition, Figure 7 also tabulates hourly traffic for one hour intervals preceding and following the peak hour, tabulates the three-hour
total, and lists the 24-hour average daily traffic (ADT) by year for each
direction on Kahekili Highway. Figure 8 graphically illustrates the foregoing
data and, in addition, shows the population growth.

The purpose for summarizing this information was to determine:

1) the increased peak hour volume which has occurred with time;
2) the period of time the peak hour has extended; and
3) determine the correlation between the population growth on
    Windward Oahu and traffic growth on Kahekili Highway during the
    peak hour period.

Due to the limited data available, statistical analysis of trends is not
possible. However, the following general observations can be made:

1) The peak hour volume on Kahekili Highway has not shown any
    significant increase or trend between 1975 and 1983. Therefore,
    the peak hourly volume has probably been met.

2) Both the three-hour peak period totals and 24-hour ADT totals
    show no increasing trends. Since these volumes are not
    increasing, it is not possible to forecast that the peak hour
    period is extending.

3) Population growth on Windward Oahu utilizing Kahekili Highway
    has grown since 1970, yet there is no corresponding increase in
    either peak hourly volume, three-hour peak hourly volume or
    average daily traffic. Based on this data, it is not possible
    to predict that the total daily traffic volume (ADT) or peak
    hour volume will increase as a result of the creation of new
    units in Koolaupoko.
If there is no apparent or significant growth in the peak hourly volume or average daily traffic volume within the region, it is logical to assume that there are social factors affecting traffic patterns and habits which offset the naturally anticipated growth in traffic volumes. By researching the 1970 census and 1980 census, the data trends shown on Figure 9 were compiled.

Factors which will offset the usage of the Hāhekili Highway are:

1) **Available Jobs:** Based on Figure 9, there were 11,930\(^1\) people driving to jobs in the Kailua/Kaneohe area in 1970 and 20,705\(^2\) in 1980. This represents a 75 percent increase, whereas population growth was only 19 percent. On a per capita basis there were significantly more people driving to jobs in Kailua/Kaneohe in 1980 as compared to 1970.

2) **Carpools:** Based on Figure 9, an average of 1.17\(^1\) people per car were driving to work in 1970 from the Kailua/Kaneohe area. However, by 1980 an average of 1.45\(^2\) persons per car were driving to work. This is a significant increase.

3) **Public Transportation:** In 1970, only 15\(^1\) persons or 0.7 people per 100 households used public transportation to commute to work. By 1980, there were 2,161\(^2\) commuters or 6.9 persons per 100 households using public transportation to get to work. This again is a significant increase.
In 1970 there were 3.03 trips across the Koolau per Windward household, which generated 67,319³ average daily traffic. By assuming that this 1970 factor was still valid in 1980, there would have been 95,230 trips (ADT). However, the 1980 traffic count information shows 79,304⁴ trips. The difference (15,926 trips), or a reasonable amount of the difference, should be accountable in offsetting factors.

It is possible to estimate the decreased Koolau trips based on the offsetting tends as follows:

1) **Available Jobs:** Adjusting for population growth, there was an increase of 6,556 people driving daily to work in Kailua/Kaneohe in 1980 as compared to 1970. Based on 1.45 persons per car, this represents 4,521 daily trips that it is assumed would go to Honolulu to work if the job was not available on the Windward side.

2) **Carpools:** There are 5,882⁴ peak hour vehicles heading to Honolulu, and it is assumed the peak hour period is approximately two hours. Therefore, in 1980 there were 11,764 commuter passenger vehicles carrying 17,058 commuters (1.45 persons/vehicle. Based on 1970 occupancy rates, this same

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The commuter population would have used 14,573 vehicles. The difference between commuter vehicles in 1980 and 1970 can be attributed to carpooling. This difference is 2,478 vehicles.

3) Public Transportation: In 1970 only 156 windward residents used public transportation to commute to work. However, in 1980, the total number of commuters increased to 2,161 people. It is assumed the difference, or 2,005 commuters, could use cars at an occupancy of 1.45 commuter/car and produce 1,382 trips.

The total trips not utilized by means of local jobs, carpooling and public transportation is 8,381 trips. Therefore, the amount of trips saved by commuter adjustment compares favorably with the 15,926 trips (ADT) not accounted for strictly by population extrapolation.
3.15 Total Lots (New)

0.7 Trip generation factor

ASSUME: 80/20 Distribution factor
80/20 Turning distribution factor
  (In direction of peak hourly flow)
50/50 Turning distribution factor
  (Direction opposite of peak hourly flow)

Peek hourly vehicles - AM
(Peak hourly vehicles - PM)

INTERSECTION "A"

FIGURE 1
ANTICIPATED
PEAK HOURLY TRAFFIC
AT INTERSECTION "A"
**INTERSECTION "B"**

**Total Lots (New)**

0.7 Trip generation factor

**ASSUME: 80/20 Distribution factor**

80/20 Turning distribution factor (in direction of peak hourly flow)

50/50 Turning distribution factor (direction opposite peak hourly flow)

**Peak hourly vehicles - AM**

(Peak hourly vehicles - PM)

**Figure 2**

**ANTICIPATED PEAK HOURLY TRAFFIC AT INTERSECTION "B"**
FIGURE 3
EXISTING AND PROJECTED
TRAFFIC AT LILI'PUNA ROAD/
HA'IKU ROAD INTERSECTION
AM. PEAK HOUR

KAMEHAMEHA
LILI'PUNA ROAD
HIGHWAY

76 (95)
347 (425)
347 (425)

18'
10'
10'
13'
10'
10'
10'
12'

22'
22'
8'
11'
11'

200
200

577

770
(945)

( ) = PROJECTED TRAFFIC,
ALL OTHER VALUES EXISTING
OR ASSUMED EXISTING BASED
ON 12/83 TRAFFIC COUNT BY
CITY AND COUNTY OF HONOLULU
(ALL VALUES ROUNDED OFF)
FIGURE 5
CRITICAL LANE MOVEMENT CALCULATIONS

A.M. Critical Lane Volume - Lilipuna/Haiku

\[ 146 + 133 = 279 \quad \text{Use is greater than} \]
\[ 136 + 89 = 225 \]

A.M. Critical Lane Volume - Kamehameha Highway

\[ 76 (95) \]
\[ 347(425) \]
\[ 425 + 172 = 696 \quad \text{Use is greater than} \]
\[ 200 + 95 = 295 \]

\[ \therefore \text{Projected A.M. Critical Lane Volume} = 279 + 696 = 975 \text{ Vehicles} \]
\[ \text{Existing Critical Lane Volume} = 279 + 519 = 798 \text{ Vehicles} \]
\[ 975 < 1,500 \text{ Allowable } \]

( ) = Projected Volume,
All others existing or assumed existing conditions
FIGURE 6

P.M. Critical Lane Volume - Lilipuna/Haiku

2 Phase Operation

187 + 127 = 314 . Use is greater than 115 + 54 = 199

P.M. Critical Lane Volume - Kamehameha Highway

350 (412)

352 + 126 = 478 . Use is greater than 412 + 28 = 440

Projected P.M. Critical Lane Volume = 314 + 478 = 792 Vehicles
Existing Critical Lane Volume = 279 + 476 = 755 Vehicles

796 < 1,500 Allowable . Below but close to recommended maximum.

( ) = Projected Volume,
All others existing or assumed existing conditions
### Figure 7

#### Approach D

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**ND** = No Data Available

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**Diagram:**

- **Kahekili Hwy.**
- **Pahu Hwy.**
- **Likeliike Hwy.**
- **To Honolulu**
- **To Kaneohe**
**FIGURE 8**

**TRAFFIC TRENDS & POPULATION GROWTH**

**KAHEKILI HIGHWAY & LIKELIKE HIGHWAY**

WINDWARD OAHU TRENDS AFFECTING TRAFFIC, HOUSING AND JOBS

FIGURE 9
APPENDIX C

AN ASSESSMENT OF SOCIAL IMPACTS

OF THE

PROPOSED HEEIA KEA PROJECT
An Assessment of Social Impacts of the Proposed Heeia Kea Project

Prepared for Malama-Gentry Joint Venture

By Earthplan

August, 1986 Revised October, 1986
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An Assessment of Social Impacts of the Proposed Heeia Kea Project

Summary of Findings
SUMMARY OF FINDINGS

Malama-Gentry Joint Venture is currently proposing a 360 unit residential development in Heeia Kea, which includes commercial and industrial components, as well as park space. Heeia Kea is located in Windward Oahu, across from the Heeia Kea Pier.

This study examines the project's potential social impacts, particularly as related to the character and culture of Kahaluu and Kaneohe. Although the project site is situated in the Kahaluu Neighborhood Board area, it abuts Kaneohe's boundary. The assessment's Study Area therefore includes the communities of Ahuimanu, Kahaluu, Heeia and Kaneohe.

These communities of the regional "neighborhood" share some similar characteristics. Compared to Oahu as a whole, both communities tend to have larger households, be more family-oriented and less mobile, and their median incomes are higher. Kahaluu and Kaneohe have relatively higher labor force participation and less unemployment than the islandwide community. The housing vacancy rate is very low in these communities and both experience a very high proportion of owner-occupied units.

In many cases, however, the population of these communities are different. Kaneohe has a lower educational level, and Kahaluu has proportionally more professional, administrative, and other white-collar workers. The median value of Kahaluu's owner-occupied units are much higher than those in Kaneohe and its median rent is lower than that of Kaneohe.

This information indicates that Kahaluu tends to have a more diverse population than Kaneohe, or Oahu as a whole.

While Kahaluu has more people who have attended college, it also has more people who did not attend high school. Its proportion of families below poverty level resembled the island's proportion, even though its median income exceeded the island median. Further, some of Kahaluu's residents have higher-than-average mortgage payments, and the community's renters must allocate a higher percentage of their incomes to rent, even though their median rent is lower than that of Kaneohe or Oahu.

Another major difference between these communities is their growth patterns. While Kahaluu and Kaneohe share agricultural roots, the pace of urbanization in Kaneohe was much quicker than Kahaluu. Today, Kaneohe's suburban nature, with its shopping malls and planned communities, is a sharp contrast to the slower-paced changes in Kahaluu.
Given these differences in histories and residential makeup, Kahaluu and Kaneohe seem to have different goals and concerns. The community polls and Neighborhood Board minutes indicate that Kahaluu wishes to retain this rural pace and enhance their agricultural activities, while improving public services to a level typical of larger population base. Kaneohe's concerns center around their ability to accommodate their already growing population.

The Study Area reactions to the development of Heeia Kea are rooted in these differences in community directions and concerns. While no Study Area organizations have yet responded to the Preparation Notice of the Supplemental EIS, some have provided comments on previous proposals and these are identified in this assessment. Most of their concerns were similar to those of Study Area people interviewed.

To further identify community feelings and concerns, interviews with seventeen Study Area residents were held. An effort was made to select individuals who collectively represented a diversity of interests. A summary of concerns raised by those interviewed is as follows:

- All those interviewed believed there is a strong need for housing in the area, and most felt that housing is appropriate for Heeia Kea. People differed, however, as to the type of housing the valley should accommodate. Some felt that Heeia Kea should have homes priced for average and higher income families. Others felt that Heeia Kea should address the need for low-priced homes.

- The project's traffic impacts on the immediately surrounding areas, as well as the regional trans-Koolau system, was raised by all those interviewed. Some indicated that they would be satisfied if the developer made necessary improvements to accommodate this particular project. While the others acknowledged that the regional problem "was not the applicant's problem", they also felt that the applicant should either participate in solving the regional problem, or that the project should not proceed until the regional problem is solved.

- All of those interviewed expressed appreciation for the site's existing beauty and a desire to retain it. Some felt that, with proper planning, the proposed project could maintain and enhance this beauty. Others felt that any change to the existing character would be a negative one, although some of these people also felt that the trade-off would be worthwhile if the project were primarily affordable housing.

Summary: Page 2
- Some people felt that Heeia Kea's most important value was that it serves as a transition, or buffer area, between suburban Kaneohe and rural/agricultural Kahaluu. This concern was expressed even though the proposed density would be lower than that of the abutting community on the Kahaluu side. These people were primarily Kahaluu residents and they wanted to retain this quality, either with a very low density residential project, or by establishing agricultural activities, or by planning for both uses through "whole valley planning".

- Other concerns raised, though not as frequently, were the need to continue to stimulate the construction activities in Windward Oahu which would, in turn, provide jobs; the noise impact of KMCAS aircraft on future Heeia Kea residents; the project's compatibility with the Heeia Kea pier and Kaneohe Bay's ocean resources, particularly as related to Coastal Zone Management regulations; the future of the current residents; runoff into Kaneohe Bay; and the type of onsite industrial activities.

The bulk of concerns raised on the development of Heeia Kea center around quality of life issues which generally revolve around a personal and collective sense of well-being.

Such issues range from people's perception of how a project may affect an individual's daily activities and routine to how a project may ultimately impact a particular community's social fabric and goals for the future.

The social issues previously discussed generally fall into three categories of how people see this proposal affecting their quality of life: need for housing, inconveniences of inadequate public systems and infrastructure, and the creation or maintenance of a community identity.

Need for housing

While this need ultimately boils down to a personal need for housing, it is usually expressed by a community which feels that such a need exists in their midst.

Some people felt that more housing will allow young families to remain on the Windward side, as well as stimulate the economy, particularly the construction industry. Heeia Kea will improve this situation for those who believe that more market housing units are needed, or for those who are looking for a house at market rate.
For those that feel that the project should address the need of those who cannot afford to participate in the current housing market, most of whom are renters or are doubling up with their families, the project will allocate a portion of the proposed units for families with low and moderate incomes. These people were not satisfied with this level because they feel that Heeia Kea should house primarily families who cannot qualify for conventional housing.

Inconveniences of Inadequate Public Systems and Infrastructure

The best example of this quality of life issue is traffic, which was the most common concern on the Heeia Kea project.

The kinds of solutions recommended by the Study Area individuals depended largely upon their "acceptance" of the traffic problems. Those who were satisfied by the applicant making improvements for this project seem to feel that traffic is and will be a perennial problem and people must learn to live with it. Those who do not want to allow any new projects until the problem is solved seem to feel that the situation will eventually change for the better.

The medium of these two extremes is the position that the applicant should make improvements as necessary, but also participate in community efforts to solve traffic problems.

The extent to which Heeia Kea will affect this quality of life issue largely depends upon the timing of the project relative to regional roadway improvements. The applicant has indicated that the project will require a couple of years to obtain approvals and permits, and a couple of years beyond that for project build out. It is believed that some of the roadway improvements will already be completed and this will minimize the impacts.

Maintenance or Creation of Community Identity

For some, the intangible transition quality of Heeia Kea signals the arrival at "country", even though there are suburban-type developments on both the Kahaluu and Kaneohe sides of Heeia Kea.

The question of impacting the regional identity therefore goes beyond the project’s visual or residential compatibility with the surrounding area. It deals with whether or not this project will contribute to the desired direction and identities of the Kahaluu and Kaneohe communities.

Summary: Page 4
Some of the Kahaluu residents interviewed reflected a two-fold desire to retain the rural and agricultural qualities of the area, and, at the same time, to have an equally strong desire to have more of the facilities, amenities and public services associated with a larger population base. These people may feel that the current proposal will "threaten" the rural identity they wish to retain.

Others, however, felt that the community need for more facilities and amenities outweighed the need to retain the area's rural nature, and they felt that more market developments will help "upgrade" Kahaluu by adding diversity. To them, the current proposal is an asset.

For the Kamehameha residents interviewed, most did not discuss the project's value as a transition area. Rather, they centered on the project's infrastructure impacts. They did not seem to feel that the proposal would threaten their community identity.

Thus, in terms of community identity, some Kahaluu residents may feel that their rural identity would be threatened, even though the project site is abutted by single family residential development on the Kahaluu side and despite the distance between the project site and the actual agricultural activities. Kamehameha residents, and most Kahaluu residents, may not feel this identity impact either because they are accustomed to this type of project, or because the project is a step in the direction they wish for Kahaluu.

It is noted that the project's future residents will most likely have a mixed identity. Because of the valley's proximity to both Kamehameha and Kahaluu, Heeia Kea is aligned with both communities, depending on the various boundary designations. Whereas it shares the same City Council member as Kamehameha and Kahaluu, its residents vote with Kamehameha residents for its State House Representative, and with Kahaluu residents for its State Senator.

Although it shares much history with Kamehameha and the overall Heeia ahupua'a, it is outside of the Heeia CDP. The project site lies in the Kahaluu CDP and is in the jurisdiction of the Kahaluu Neighborhood Board.
It is estimated that Koolaupoko's 1984 population was 113,260 persons, which is 10,931 persons less than the project 2005 population of 124,200 persons. The estimated 1,200 persons resulting from the proposed housing units (based on 3.4 persons per household) would be well within the projected target population.

The City Department of General Planning estimated that the 4,900 additional housing units would be needed to accommodate the projected 2005 Koolaupoko population and that the vacant developable and under-utilized lands have a potential to accommodate 4,400 units. This implies that, to fully accommodate the 2005 population, 500 housing units are needed, in addition to the existing and potential housing supply.

Of the proposed 360 units, 120 could be built under the existing Development Plan designations, and these units are already accounted for in the housing supply identified by DGP. The net increase of proposed units is 240, and these would contribute to the estimated housing deficit of 500 units.

The tangible quality of life issues, such as the need for housing and traffic inconveniences, can be partially mitigated by the proposed project. However, the extent of the intangible quality of life impact, namely the impact on community identity, will depend largely on how the community perceives this project relative to their needs and desires.
An Assessment of Social Impacts of the Proposed Heeia Kea Project

Section 1

Background and Purpose
1. BACKGROUND AND PURPOSE

1.1 Description of this Report

1.1.1 Purpose and Contents

This assessment was prepared for the Supplemental Environmental Impact Statement (EIS) for a proposed project in Heeia Kea, located in the Koolaupoko District of Oahu, Hawaii. As explained in the Preparation Notice for the Supplemental EIS, an EIS for a proposed Heeia Kea Subdivision was accepted by the Department of Land Utilization in 1983, in conjunction with an application for a Special Management Area Permit. The document was prepared pursuant to the requirements of Chapter 343 of the Hawaii Revised Statutes under the premise that the document could be utilized in conjunction with future government approvals.

The Supplemental EIS is being prepared for a requested amendment to the Koolaupoko Development Plan.

Addressed in this assessment are potential social impacts of the proposed project. Specific areas examined include the potential changes to the level of residential population, possible changes to the character and culture of the neighborhood, resulting displacement, and other social impacts.

Note that while impacts related to economics, housing, and public facilities/services have social implications, discussions on these topics in this assessment are limited to subjective community perceptions and values, rather than a measurement of the actual impacts.

1.1.2 Overall Approach

The project area lies within the boundaries designated for the Kahaluu Neighborhood Board. Because of its proximity to the area under the Kaneohe Neighborhood Board, however, the Study Area of this assessment explores potential social impacts on the communities of both Kahaluu and Kaneohe.

Quantitative and qualitative approaches are used to assess potential social impacts.

Where possible, the study examines those impacts which can be quantified, such as the growth trends experienced by Kahaluu and Kaneohe and population projections for these areas. The source of these are primarily public forecasts, policies and plans.

The study also discusses less tangible impacts of lifestyle, neighborhood character, and community values. Analysis of such speculative impacts are based on discussions with knowledgeable community members of Kahaluu and Kaneohe, as well as public opinion polls.
Note that previous proposals have been made for Heeia Kea in which the applicant undertook efforts to address community concerns. These efforts and their results are discussed in this assessment as appropriate.

1.2 Project Description

This section presents the project currently being proposed by the Malama-Gentry Joint Venture and the target market population is described.

1.2.1 Overview of the Proposed Project

The Malama-Gentry Joint Venture, hereby referred to as the applicant, comprises Malama Pacific Corp., a subsidiary of Hawaiian Electric Company, and The Gentry Companies.

Situated on Kamehameha Highway, across from the Heeia Kea Small Boat Harbor, Heeia Kea encompasses a total of 219 acres. More than half of the property, or 117 acres, is designated Conservation on the State Land Use Map and Preservation by the City and County of Honolulu.

The remaining land, or 102 acres, lies in the Urban District on the State Land Use Map. Of this, approximately 14 acres fronting Kamehameha Highway are already designated Residential on the Koolaupoko Development Plan and are zoned R-6. The remaining Urban land is designated Agriculture and zoned Ag-1.

Figure A presents the proposed Development Plan changes and the following is a breakdown of proposed land uses:

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Number of Acres</th>
<th>Proposed Number of Residential Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Residential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(includes 6 acres</td>
<td></td>
<td></td>
</tr>
<tr>
<td>already under</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential designation)</td>
<td>55.8</td>
<td>310 (5.56 units/ac)</td>
</tr>
<tr>
<td>Low Density Apartment</td>
<td>2.5</td>
<td>50 (20.0 units/ac)</td>
</tr>
<tr>
<td>Commercial</td>
<td>1.0</td>
<td>---</td>
</tr>
<tr>
<td>Industrial</td>
<td>4.0</td>
<td>---</td>
</tr>
<tr>
<td>Park site</td>
<td>5.2</td>
<td>---</td>
</tr>
<tr>
<td>Subtotal of Area of Proposal</td>
<td>68.5</td>
<td>360 (5.26 units/ac)</td>
</tr>
</tbody>
</table>
This proposal does not include the remaining 33.5 acres of Urban-designated land (and agricultural-zoned), nor does it include the 117 acres of Preservation land.

1.2.2 General Characteristics of Housing Types and Housing Market

Anticipated for the residential portion of the development is a range of low density apartments, single family cluster or "zero-lot line" units on an average 3,500 square foot lot and individual single family units on an average 6,000 square foot lot.

The price range of the low density apartments is estimated at $60,000 to $100,000, based on 1986 constant dollars. The price range of all of the single family units is estimated at $140,000 to $200,000. It is noted that the applicant believes that the size of the parcel allows the developer to efficiently build a number of units which would bring the per unit cost down. Heia Kea is one of few parcels on the Windward side which will permit this scale of efficiency. Most of the future Windward housing supply will be on relatively small lots and in-filling, which is not as cost-effective. (Personal communication with Norm Dyer, Malama-Gentry Joint Venture, August 18, 1986).

Based on this housing market, the average buyer of a Heia Kea residential unit would probably have an income similar to or above the average median income of Oahu's families.

Table 1 presents information on housing affordability provided by the Bank of Hawaii. This information indicates that the average housing price is 1986 is $154,448, which falls in the range of the proposed single family units. This table further shows that Hawaii's average home buyer needs to have an annual income which exceeds the median income by $1,000.
<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Affordability</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td><strong>Mortgage Interest Rate</strong> 1/</td>
</tr>
<tr>
<td>14.01</td>
</tr>
<tr>
<td><strong>Average Price</strong> 2/</td>
</tr>
<tr>
<td><strong>Annual Median Family Income</strong></td>
</tr>
<tr>
<td><strong>Average Down Payment (20%)</strong></td>
</tr>
<tr>
<td><strong>Average Loan Amount (80%)</strong></td>
</tr>
<tr>
<td><strong>Monthly Principal and Interest</strong> 3/</td>
</tr>
<tr>
<td><strong>Payment as % of Income</strong></td>
</tr>
<tr>
<td><strong>Monthly Income Required</strong> 4/</td>
</tr>
<tr>
<td><strong>Monthly Median Income</strong></td>
</tr>
<tr>
<td><strong>Monthly Income Gap</strong> 5/</td>
</tr>
</tbody>
</table>

1/ Hawaii average
2/ Bank of Hawaii Construction in Hawaii
3/ For a 30-year fixed rate loan
4/ Based on a 3:1 ratio
5/ Required monthly income less monthly median income

Source: Bank of Hawaii, Business Trends, "Table A: Factors Determining Housing Affordability", May/June 1986
1.3 Previous Proposals for Heia Kea as they relate to Community Interaction

To provide a broader context for social impacts related to developing Heia Kea, this section describes previous proposals for Heia Kea and subsequent efforts to address community concerns. This information will help establish a departure point from previous proposals, as well as provide a broader context for community concerns expressed about the current proposal.

Prior to the Adoption of the Koolaupoko Development Plan

In the early 1970s, Hawaiian Electric Company, hereby referred to as HECO, was informed that the structures in Heia Kea were substandard. HECO subsequently informed the valley's residents that they must vacate their premises. Some of the people refused to move within the given time frame, citing inadequate notice of eviction.

Lawsuits were filed by both HECO and some of the residents, and these actions received considerable media attention. Although it was ruled that HECO had the legal right to continue its efforts in removing the remaining residents, HECO chose not to do so, providing the remaining residents continue to pay their monthly rent.


In 1983, HECO requested an amendment to the Koolaupoko Development Plan to allow residential development of 440 units on the valley's 102 Urban-designated acres. In the summer of 1983, HECO began meeting with representatives of the Heia Kea Community Association to discuss the needs of the residents and potential solutions.

There were thirteen families residing on twelve of the subdivided lots fronting Kamehameha Highway. Almost all of these families participated in the previous attempt to resist eviction. All but one of the structures in which they live are original houses on the site.

HECO submitted its first written proposal for relocation to the Association in September 1983. In 1984, HECO offered to sell each of the existing resident families an improved fee simple lot within a 2-acre portion of the project site for $10,000 per lot, providing the project site is designated and zoned for residential use as set forth in the agreement. Ten of the eleven resident families accepted HECO's offer.

The application was denied by the City Council and the agreements with the resident families are still valid.

In 1984, HECO submitted an application to amend the Koolaupoko Development Plan to allow development in Heeia Kea. Shortly after this application was accepted, the Conflict Management Program of the Neighborhood Justice Center offered to provide its services as an impartial third-party to assist various groups in exploring the possibilities of negotiating a joint plan for the valley (letter from the Neighborhood Justice Center dated November 16, 1984).

This mediation process was initiated in August 1984. HECO withdrew its application and no action was taken on the Heeia Kea proposal in the 1984-1985 Annual Review Process.

The mediation group, called the ad hoc He'eia Kea Valley Planning Group, and hereby referred to as the Planning Group, met regularly from August 1984 to June 1985. The Planning Group comprised representatives from Hui Malama Aina o Koolau, HECO, the Waianohi-Waikane Community Association, the He'eia Kea Valley Community Association, and the Kaneohe and Kahaluu Neighborhood Boards. A private planning consultant was engaged by HECO and, with the consent of all parties, assisted the group in developing alternatives based on criteria developed by the group (letter from the Neighborhood Justice Center dated November 16, 1984).

Table 2 contains summary statements signed by Planning Group participants.

HECO submitted an application to amend the Koolaupoko Development Plan in the 1985-1986 Annual Review Process. The proposal for the 102 acres of the Urban-designated portion of Heeia Kea included 78 acres for residential use (440 units), 5 acres for commercial and industrial use, and 4 acres for park. Fifteen acres would remain in the agriculture designation. The application was denied by City Council.

It is noted that some of the participants of the Planning Group testified against the project. While there were some agreements on some of the basic points, the group did not reach a consensus on number of residential units.
SUMMARY STATEMENTS
June 6, 1985
Ad Hoc HE’EIA KEA VALLEY PLANNING GROUP

A. MEETINGS: All of the parties acknowledge that the undersigned groups have been engaged in a process aimed at resolving differences of opinion over the future of He’elia Kea Valley since August 1984.

B. REPRESENTATION: All of the parties agree that (1) each group has been represented by two persons; (2) each group has exercised responsibility for monitoring their own observers; (c) meetings have been open to anyone wishing to attend; (d) substitutes at the table have been made in a responsible manner by individual groups.

C. LOBBYING: All of the parties acknowledge that agreements to withhold individual lobbying efforts both for or against particular plans during the process have been lived up to by everyone.

D. PERMITS: All of the parties acknowledge HECO’s right to pursue permits and permissions.

E. WHOLE VALLEY PLANNING: All of the parties agree that planning for the future of He’elia Kea Valley should not be piecemeal and that a plan should be developed for the whole valley. Planned uses may include housing, commercial, industrial, agriculture, open space, and conservation.

F. PHYSICAL CONFIGURATION: All planning for the valley should adapt to the natural features of the valley, including but not limited to views, drainage patterns, topography, and soils. It was agreed that specific uses should generally be located in the areas indicated on the attached map provided by Group 70. The size of each area is NOT indicated since the group does not agree on the acreage to be devoted to each use.

G. HOUSING:
   1. Residential uses: All parties agree that residential designation in addition to the existing zoning is appropriate for some portions of the valley.
   2. Mix of housing types: All parties agree that a mix of housing types such as single family, cluster, town houses, etc. is desirable for the valley.
   3. Housing affordability and density: All parties agree that there is a great need for housing for families that earn less than the median income. All parties agree that any development in He’elia Kea Valley should preserve the natural beauty and open character of the valley.

H. AGRICULTURE: All parties agree that some portion of the valley should be used for agriculture.
I. PARK: All parties agree that park/open space is an appropriate use as identified on the physical configuration map.

J. COMMERCIAL/INDUSTRIAL: All parties agree that a pier-related commercial/light industrial area is an appropriate use as identified on the physical configuration map.

K. REGIONAL PREFERENCES: All parties agree that it is desirable to give valley residents and regional residents preference in the purchase of housing. This policy would help minimize the impacts on traffic and on the pier and maximize the impact in satisfying the community's housing needs.

[Signatures]

[Signature for Hui Malama] [Signature for HECO]

[Signature for Waiahole-Waikane] [Signature for He'eloa Kea Community Association]
An Assessment of Social Impacts of the Proposed Heeia Kea Project

Section 2

Resident Population
2. RESIDENTIAL POPULATION

This section provides the islandwide and Study Area growth trends and population distribution policies.

The Study Area includes the communities of Ahuimanu, Kahaluu, Heeia, and Kaneohe, all of which fall within the Kahaluu and Kaneohe Neighborhood Boards. Although the proposed project is to be located within the Kahaluu Neighborhood area, the Kaneohe Neighborhood area is adjacent to Heeia-Kea and was therefore included as part of the Study area.

2.1. Islandwide

2.1.1 Islandwide Growth Trends

The growth rate for Oahu had been declining steadily over the past three and half decades, while absolute population figures continue to rise. Table 3 shows U.S. Census population figure and derived rates for the City and County of Honolulu and the Study Area.

Between 1950 and 1980, Oahu's population grew at average annual rate of 3.5 percent; from 1960 to 1970, 2.3 percent; and from 1970 to 1980, 1.9 percent. The provisional estimated July 1, 1985 population for the City and County of Honolulu was 814,642 (yet unpublished advance information obtained from the Hawaii State Department of Planning and Economic Development) suggesting an average annual growth rate of just 1.2 percent for the early 1980's.

By comparison, the estimated 1985 population for the combined Neighbor Island counties would suggest a average annual growth rate of 3.2 percent for Hawaii aside from the island of Oahu.

2.1.2 Islandwide Growth Projections and Population Distribution Policies

The Hawaii State Department of Planning and Economic Development forecasts a further decrease in growth rates. The most recent population projections (1984) for the future population figures of the City and County of Honolulu are as follows:
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>City and County of Honolulu</td>
<td>550,409</td>
<td>630,528</td>
<td>762,565</td>
<td>20.9%</td>
<td>1.92%</td>
</tr>
<tr>
<td>Koolaupoko Development Plan Area</td>
<td>60,238</td>
<td>92,219</td>
<td>109,373</td>
<td>18.6%</td>
<td>1.72%</td>
</tr>
<tr>
<td>Kahaluu Town CDP</td>
<td>1,123</td>
<td>1,657</td>
<td>2,925</td>
<td>76.5%</td>
<td>1.06%</td>
</tr>
<tr>
<td>Hesia CDP</td>
<td>N/A</td>
<td>N/A</td>
<td>5,432</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Ahuimanu CDP</td>
<td>N/A</td>
<td>N/A</td>
<td>6,235</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Year | Resident Population | Previous 5-Yr. Avg. Annual Growth Rate
--- | --- | ---
1990 | 859,300 | 1.06%
1995 | 896,900 | 0.85%
2000 | 925,700 | 0.63%
2005 | 954,500 | 0.61%

The General Plan for the City and County of Honolulu contains percentage guidelines for the distribution of year 2000 population for the eight "Development Plan Areas" (DP Areas) which comprise the Island of Oahu. These areas are shown in Figure B.

Table 4 includes these guidelines and along with (1) estimated year 1984 population for each DP Area; (2) absolute year 2000 population range for each area based on the percentage guidelines; and (3) projection made in 1985 by the City Department of General Planning (DGP) of actual year 2005 population.

The DGP projections are based on a model which considers population capacity for residential developments which were approved as of 1985 as well as the estimated additional future housing demand (as constrained by land use policies).

2.2 Study Area -- Kahalu‘u and Kane‘ohe

The proposed project is located in the Koolaupoko DP Area, shown indicated in Figure B.

Figure C provides the boundary designations of two of the four Neighborhood Board (NB) areas, which constitute the Koolaupoko DP area; Kahalu‘u NB and Kane‘ohe NB, as well as depicting separate individual communities or Census Designated Places (CDPs), the largest of which is Kane‘ohe City.

These Neighborhoods would be the most affected by the proposed project at Heeia Kea. For population analyses purposes beyond 1980 it was necessary to identify the major CDPs located within each of the areas, as statistical information for neighborhood board areas is not available prior to 1980.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Urban Center</td>
<td>436,400</td>
<td>480,000</td>
<td>47.5 - 52.5</td>
<td>453,388 - 501,113</td>
</tr>
<tr>
<td>Ewa</td>
<td>36,000</td>
<td>85,100</td>
<td>9.0 - 10.0</td>
<td>85,905 - 95,450</td>
</tr>
<tr>
<td>Central Oahu</td>
<td>114,400</td>
<td>139,800</td>
<td>12.8 - 14.2</td>
<td>122,176 - 135,539</td>
</tr>
<tr>
<td>East Honolulu</td>
<td>45,600</td>
<td>58,500</td>
<td>6.2 - 6.8</td>
<td>59,179 - 64,906</td>
</tr>
<tr>
<td>Koolau Park</td>
<td>113,300</td>
<td>124,200</td>
<td>12.4 - 13.6</td>
<td>118,358 - 129,012</td>
</tr>
<tr>
<td>Koolauloa</td>
<td>12,100</td>
<td>13,800</td>
<td>1.3 - 1.5</td>
<td>12,409 - 14,318</td>
</tr>
<tr>
<td>North Shore</td>
<td>14,000</td>
<td>15,400</td>
<td>1.6 - 1.8</td>
<td>15,272 - 17,151</td>
</tr>
<tr>
<td>Waianae</td>
<td>33,400</td>
<td>39,200</td>
<td>4.2 - 4.6</td>
<td>40,689 - 43,907</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>805,500</strong></td>
<td><strong>954,500</strong></td>
<td><strong>95.0 -105.0</strong></td>
<td><strong>906,775 - 1,002,225</strong></td>
</tr>
</tbody>
</table>

Source: City and County of Honolulu, Department of General Planning, "Residential Development Implications of the Development Plans", 1985.
2.2.1 Study Area Growth Trends

The population of the Koolaupoko Development Plan area grew by over 17,000 persons during the 1970s. This represented an 18.6 percent increase, compared to a 20.9 percent increase for the entire island of Oahu. The average annual growth for the area was 1.72 percent. The largest gross increase in population occurred between Kaneohe and Kahaluu, followed by the Kaneohe Marine Corps Base and Waimanalo.

Population growth has slowed in Koolaupoko during the 1980s. The overall increase between 1980 and 1984 was nearly 3,900 persons. The average annual rate of growth dropped to 0.88 percent. As of July 1, 1984 the total population was 113,269 (DPED, 1985). The 1984 population of selected Census Designated Places (CDPs) within the region nearest the project site include: Kahaluu 3,175, Ahuimanu 7,256, Heeia 4,876, and Kaneohe 31,750.

The General Plan for the City and County of Honolulu sets forth guidelines for future population levels in the eight Development Plan areas. Table 4 shows that the current guidelines allow for a range between 118,358 and 129,812 residents in Koolaupoko by the year 2005. Based on an average household size of 3.4 persons per unit, the City and County Department of General Planning estimates there will be approximately 124,200 residents by the 2005 target year (DPF, 1985).

The DGP estimates imply that, by 2005, Koolaupoko's population would increase by 10,800 persons. This would be a relatively low annual rate of growth of 0.44 percent, half the rate observed from 1980 to 1984. Even if the population reached the maximum set by the General Plan, the result would be a 0.65 percent rate of growth during the 21-year period.
2.3 Change in Level of Population

In the aforementioned DGP report, DGP estimated that 4,900 additional housing units would be needed to accommodate the projected 2005 Koolaupoko population. It was further estimated that the vacant developable and under-utilized lands have a potential to accommodate 4,400 units. This implies that, to fully accommodate the 2005 population, 500 housing units are needed, in addition to the existing and potential housing supply.

The proposed 360 residential units would house an estimated population of 1,224, based on an average household size of 3.4 persons.

It is noted, however, that, of the 360 units, 120 could be built under the existing Development Plan designations, and these units are already accounted for in the housing supply identified by DGP (Group 70, 1986). The population of these 120 units is estimated at 408 persons.

The net increase of proposed units is 240, and these would contribute to the estimated housing deficit of 500 units. The estimated net population resulting from these units is approximately 816 persons.

It is estimated that Koolaupoko's 1984 population was 113,280 persons, which is 10,931 persons less than the projected 2005 population of 124,200 persons. The population resulting from the proposed net increase of housing units would be well within the projected population.
An Assessment of Social Impacts of the Proposed Heeia Kea Project

Section 3

Character and Culture of the Neighborhood
SECTION 3. CHARACTER AND CULTURE OF THE NEIGHBORHOOD

This section addresses the islandwide and Study Area issues and concerns regarding Heeia Kea.

Section 3.1 and 3.2 provide some indications of the social setting of this project. Islandwide priorities, independent of this project, are discussed in Section 3.1.

For the Study Area, the histories, census characteristics, and important community concerns and issues, again independent of the project, are presented in Section 3.2.1 (Kahaluu) and 3.2.2 (Kaneohe).

Heeia Kea's history and unique characteristics are described in Section 3.2.3.

Those concerns raised specifically about Heeia Kea are presented and discussed in Section 4.3.

3.1 Islandwide priorities and values

3.1.1 Public opinion polls

This section provides information on public attitudes toward planning issues as determined by various statewide and islandwide opinion surveys conducted in recent years. Particular attention will be given to those issues most relevant to the proposed Heeia Kea project: housing, agricultural land preservation, traffic, and jobs.

The most useful data sources include the following:

- three "Hawaii State Plan Surveys" commissioned by the State Department of Planning and Economic Development and conducted by the Honolulu firm SMS Research (1976a, 1981, and 1984);

- the City's Development Plan survey (SMS Research, 1978b); and

- the various "Hawaii Polls" conducted by The Honolulu Advertiser since the mid-1970s.

The most recent published Advertiser poll results (Keir, 1986a, 1986b) contain comparisons with previous results.

Although sometimes using slightly different wording, most Hawaii Polls have contained a question asking respondents to state in their own words the most important problems in Hawaii today.

In both 1986 surveys, "need for jobs" ranked first, followed by traffic problems. Crime and education, which ranked third and fourth in the most recent survey, have also been consistent public concerns in the 1980's.
As for housing, "The lack of affordable housing has been a frequent source of concern to voters through the entire 12-year history of the Hawaii Poll. It generally has ranked in the Top 5 issues and does so again this year, coming in fifth" (Keir, 1986b, P. A-4).

Hawaii Polls results are highly similar to those for the Oahu sample in the 1984 State Plan Survey. Here the top issue was also jobs, followed by a virtual tie between at least four other concerns: crime, education, housing, and traffic.

An issue relevant to the Heia Kea project is the relative importance of affordable housing versus the loss of agricultural land. A wide variety of poll results indicate that housing has been the greater public priority over the past decade.

In the Advertiser polls, preservation of agricultural land (and/or open space) was a somewhat prominent concern in the 1970s but has failed to show up at all on the list of most frequently-mentioned concerns in the 1980s.

In the City's 1978 Development Plan Survey, "affordable housing" was seen as the Number 1 community problem at that time. The need to save agricultural land was also then an important concern (ranked #3 to #5 on different lists containing 20 or more planning issues) but was not ranked as highly as housing.

The three State Plan surveys have also contained lists of planning needs and issues, asking respondents to rank the importance of each. In each survey, affordable housing emerged as the second or third most important problem and has ranked well ahead of agricultural land preservation, in terms of percentages of people saying each is "extremely important".

In the 1984 State Plan Survey, 57.6 percent of the Oahu sample said "making more reasonably priced housing available" was extremely important, while "saving agriculture and agricultural land" had a high importance rating of just 39.5 percent, somewhat surpassed by "preserving the natural beauty and open space of our islands" (45.7 percent).

Finally, the last two State Plan Surveys have also each contained a forced-choice trade-off between housing affordability and agricultural land preservation. In each case, between 50 and 60 percent of Oahu respondents said housing was more important, versus 37 percent for agricultural land.
After a period in the late 1970s and early 1980s in which it was little mentioned, traffic has recently emerged as a frequently-mentioned issue in Oahu polls, sometimes ranking slightly ahead of affordable housing and sometimes slightly behind. No survey question has yet directly forced respondents to make a trade-off choice as to which is more important.

In summary, while employment has consistently emerged as the top public concern in recent polls, both housing and traffic are also high on the list. It should be noted, however, that no survey question has yet defined "affordable" housing nor charted changes in public attitudes toward loss of agricultural land according to differing price levels for resulting housing.

Over the same time period, the loss of agricultural land has not elicited consistent public emphasis in islandwide polls.
3.2 Characteristics of the Study Area

As stated earlier, the Study Area of this report includes Kahaluu and Kaneohe, as defined by the Neighborhood Board areas.

To provide the geographical and cultural setting of the proposed project, this section discusses the history and census characteristics of these regions, as well as identifies some of the major forces for change without Heeia Kea. The history and characteristics of Heeia Kea is also presented.

Also examined are current community concerns and issues independent of this project, as provided by information in the minutes of the Neighborhood Boards and community polls.

3.2.1 Kahaluu

History

In early Hawaiian society, a key principle governing man's relationship to the land was that everyone had the right to all the things required to live. This principle is revealed in the Hawaiian system of land division into districts (moku'aina), sub-districts (ahupua'a), and divisions within sub-districts ('i'il and mo'o'aina). Through their mountain to ocean orientation, these land divisions emphasize the concept of accessibility of all the resources provided by nature.

The Koolaupoko District on Windward Oahu continues to reflect the influence of early Hawaiian land divisions. Each valley around Kaneohe Bay became individual ahupua'as. In all, there were nine ahupua'as and the names given to each of these areas are still in use today.

The ahupua'a of Kahaluu was centrally located in Pali Koolau (Koolaupoko). Kahaluu has historically been noted for its winds, because the nearby mountains give them a swirling motion causing all sides of a house to become wet during a rainstorm. Thus, Ua poai hale o Kahaluu is a well-known old saying (house-surrounding rain of Kahaluu) (Sterling and Summers).

Agriculture has been an important activity in Kahaluu throughout its known history. Surveys during the early part of this century found remnants of terraces well back into the higher parts of the valley. Estimates are that at one time there must have been terraces throughout the broad part of the valley for several miles inland and the total area under cultivation in ancient times must have been very considerable.
In early historic times, the green fertile Koolaupoko district became a favorite spot of Kamehameha I. His sons, Liholiho and Kauikaouli (Kamehameha II and III) inherited much of the area from their father, including the entire ahupua'a of Kahaluu. A small number of commoners were still allowed to grow taro in the area. The earliest known census of the Kaneohe Bay region showed there were only 267 residents in Kahaluu in 1832.

Kahaluu remained in the hands of the Hawaiian monarchy after the Great Mahele in 1848. However, by 1863, Kahaluu was put up for auction to pay debts of the crown. It was purchased by James Steward for $4,000.

As was the case throughout Hawaii after the Great Mahele, private ownership of land in Kahaluu brought about significant changes in the use of land. The commercial production of sugarcane began in the Kaneohe Bay area during the 1860s. The wife of James Steward, Catherine, began the Kahaluu Plantation during the period. The lands of Kahaluu provided a poor yield compared to surrounding areas and the operation ceased production around 1882.

Immigrants who came to Oahu for work in sugar plantations used their knowledge of rice production to introduce the new crop on lands that had traditionally been used for taro. By 1892, an estimated 300 acres were in rice production in Kahaluu.

Around the same time, pineapple was being introduced to the area. By 1910, approximately 1,000 acres were cultivated in Kahaluu on land owned by James B. Castle. A year later, the Libby, McNeil & Libby company gained control of lands in Kahaluu and built the first large-scale cannery on the site of the existing St. John's By-the-Sea Church in Kahaluu. By 1923 it was evident, however, that pineapple production in the Kaneohe Bay area could not keep up with that in other parts of Oahu. During that year the cannery was closed and many of the pineapple lands reverted to native growth and pasture lands (Devaney, et al).

Since large scale commercial agriculture ended, Kahaluu has been characterized by small farming operations and a gradual increase in single family homes and neighborhood commercial operations along Kehekili Highway. The completion of the Pali and Likelike Highways increased the rate of growth in Kahaluu, yet it has been able to retain a strong degree of its rural character.

A survey of residents taken in 1981 found that 52 percent of the respondents defined Kahaluu as an agricultural community, while 34 percent said it was suburban. Feelings are strong in the community for Kahaluu to retain its rural character.
Census characteristics

This section will focus on Kahaluu's socio-economic characteristics, although limited comparisons will be made to Kaneohe and Oahu as a whole. Tables 5 through 8 show selected 1980 demographic, income, labor force, and housing characteristics for the City and County of Honolulu and the Neighborhood Board areas encompassing both Kahaluu and Kaneohe.

The proportion of Caucasians in Kahaluu closely matched that for both Kaneohe and the island as a whole. Census breakdowns for Neighborhood Board areas do not allow further breakdowns into Japanese, Hawaiian, and so on.

Kahaluu has smaller proportions of both working-age and senior citizens, and larger proportions of children, than do Kaneohe or the island as a whole. As of 1980, 39 percent of Kahaluu's population was under 20 years of age, compared to only 32 percent islandwide.

Among Kahaluu adults aged 25 or more, there was a slightly wider distribution of educational levels than for the islandwide population, since Kahaluu had a higher proportion of individuals both with less than high school educations (16 versus 14 percent) and more than high school educations (42 versus 40 percent).

Compared to islandwide percentage figures, Kahaluu's 1980 population was much more likely to be Hawaii-born (71 percent versus 55 percent) and to have been living in the same house five years previously (57 percent versus 46 percent). In this respect, Kahaluu resembles Kaneohe, where the population also appears less mobile than Oahu residents at large.

Information on Kahaluu's families show the following:

- Kahaluu's population is overwhelmingly family-oriented, in the sense that 99.5 percent of the population (versus 85.6 percent islandwide) were living in family households as of 1980.

- Kahaluu's families were more likely than families elsewhere on Oahu to be headed by a single male or female (18.6 percent versus 17.2 percent).

- The area's families were much more likely to have children under 18 living at home (62 percent versus 55 percent).

- The proportion of families below the federal poverty level was about the same as the islandwide proportion.

- Median family income in Kahaluu ($25,572) was greater than the islandwide median of $23,554.
### Table 5

**Population and Demographic Characteristics:**

City and County of Honolulu and Kahaluu and Kaneohe Neighborhood Boards, 1980

<table>
<thead>
<tr>
<th></th>
<th>CITY AND COUNTY OF HONOLULU</th>
<th>KAHALUU NEIGHBORHOOD BOARD</th>
<th>KANEHOE NEIGHBORHOOD BOARD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL POPULATION</strong></td>
<td>742,545</td>
<td>11,782</td>
<td>33,553</td>
</tr>
<tr>
<td><strong>ETHNICITY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>252,435 33.1</td>
<td>3,982 33.8</td>
<td>11,416 32.1</td>
</tr>
<tr>
<td>Japanese</td>
<td>189,608 24.9</td>
<td>N/A N/A</td>
<td>N/A N/A</td>
</tr>
<tr>
<td>Chinese</td>
<td>52,814 6.9</td>
<td>N/A N/A</td>
<td>N/A N/A</td>
</tr>
<tr>
<td>Filipino</td>
<td>97,565 12.8</td>
<td>N/A N/A</td>
<td>N/A N/A</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>80,172 10.5</td>
<td>N/A N/A</td>
<td>N/A N/A</td>
</tr>
<tr>
<td>Other</td>
<td>89,731 11.8</td>
<td>7,800 66.2</td>
<td>24,137 67.9</td>
</tr>
<tr>
<td><strong>AGE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 5 yr.</td>
<td>59,507 7.8</td>
<td>1,223 10.4</td>
<td>2,628 7.4</td>
</tr>
<tr>
<td>5 - 19 yr.</td>
<td>104,712 14.2</td>
<td>3,250 27.6</td>
<td>9,814 27.7</td>
</tr>
<tr>
<td>20 - 64 yr.</td>
<td>443,046 60.7</td>
<td>4,757 57.4</td>
<td>20,957 59.0</td>
</tr>
<tr>
<td>65 or more yr.</td>
<td>55,250 7.2</td>
<td>552 4.6</td>
<td>2,134 6.0</td>
</tr>
<tr>
<td>Median age</td>
<td>28.1 yr</td>
<td>27.6 yr</td>
<td>28.6 yr</td>
</tr>
<tr>
<td><strong>PLACE OF BIRTH</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hawaii</td>
<td>426,120 55.1</td>
<td>8,411 71.2</td>
<td>25,706 72.5</td>
</tr>
<tr>
<td>Other U.S.</td>
<td>229,234 30.1</td>
<td>2,040 24.0</td>
<td>7,746 21.9</td>
</tr>
<tr>
<td>Foreign country</td>
<td>112,211 14.8</td>
<td>553 4.8</td>
<td>1,993 5.6</td>
</tr>
<tr>
<td><strong>RESIDENCE 5 YRS. PREVIOUS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same house</td>
<td>339,033 48.2</td>
<td>6,027 57.1</td>
<td>20,967 55.8</td>
</tr>
<tr>
<td>Same island</td>
<td>179,184 25.5</td>
<td>3,456 32.0</td>
<td>7,415 22.6</td>
</tr>
<tr>
<td>Different island</td>
<td>9,100 1.3</td>
<td>89 0.6</td>
<td>351 1.1</td>
</tr>
<tr>
<td>Different state</td>
<td>129,119 18.4</td>
<td>821 7.8</td>
<td>3,164 9.6</td>
</tr>
<tr>
<td>Different country</td>
<td>46,426 6.6</td>
<td>157 1.5</td>
<td>958 5.6</td>
</tr>
<tr>
<td><strong>EDUCATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 years or less</td>
<td>61,905 14.4</td>
<td>1,663 16.0</td>
<td>3,957 20.0</td>
</tr>
<tr>
<td>High school only</td>
<td>195,074 46.0</td>
<td>2,765 41.7</td>
<td>7,048 39.6</td>
</tr>
<tr>
<td>Some post High School</td>
<td>78,386 18.3</td>
<td>1,277 19.2</td>
<td>3,559 17.9</td>
</tr>
<tr>
<td>College, 4+ yr.</td>
<td>92,201 21.7</td>
<td>1,328 25.0</td>
<td>4,467 22.5</td>
</tr>
</tbody>
</table>


*N/A* = Not Available

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Table 6

Labor Force Size and Characteristics

City and County of Honolulu and Kahaluu and Kamehame Neighborhood Boards, 1980

<table>
<thead>
<tr>
<th></th>
<th>CITY AND COUNTY OF HONOLULU</th>
<th>KAAHUU NEIGHBORHOOD BORDS</th>
<th>KAMEHAME NEIGHBORHOOD BORDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>POTENTIAL LABOR FORCE (aged 16+)</td>
<td>574,903</td>
<td>100.0</td>
<td>8,154</td>
</tr>
<tr>
<td>not in labor force</td>
<td>177,014</td>
<td>30.8</td>
<td>2,472</td>
</tr>
<tr>
<td>armed forces</td>
<td>56,026</td>
<td>10.1</td>
<td>185</td>
</tr>
<tr>
<td>civil. labor force</td>
<td>331,863</td>
<td>59.1</td>
<td>5,497</td>
</tr>
<tr>
<td>CIVILIAN LABOR FORCE</td>
<td>339,823</td>
<td>100.0</td>
<td>5,497</td>
</tr>
<tr>
<td>unemployed</td>
<td>15,756</td>
<td>4.6</td>
<td>179</td>
</tr>
<tr>
<td>TOTAL EMPLOYED CIVIL. LABOR FORCE</td>
<td>324,113</td>
<td>100.0</td>
<td>5,318</td>
</tr>
<tr>
<td>OCCUPATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>service</td>
<td>56,739</td>
<td>17.6</td>
<td>818</td>
</tr>
<tr>
<td>manager/profes.</td>
<td>79,534</td>
<td>24.7</td>
<td>1,510</td>
</tr>
<tr>
<td>technical,sales &amp; adminis.</td>
<td>109,521</td>
<td>33.7</td>
<td>1,733</td>
</tr>
<tr>
<td>farm/fish/forest</td>
<td>5,638</td>
<td>1.6</td>
<td>134</td>
</tr>
<tr>
<td>precision, craft, repair</td>
<td>36,546</td>
<td>11.3</td>
<td>666</td>
</tr>
<tr>
<td>operators, fabricators, laborers</td>
<td>35,535</td>
<td>10.9</td>
<td>453</td>
</tr>
<tr>
<td>INDUSTRY (selected)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>agric., forest, fish, mining</td>
<td>5,462</td>
<td>1.7</td>
<td>189</td>
</tr>
<tr>
<td>construction</td>
<td>21,423</td>
<td>6.6</td>
<td>379</td>
</tr>
<tr>
<td>manufacturing</td>
<td>24,782</td>
<td>7.7</td>
<td>362</td>
</tr>
<tr>
<td>retail trade</td>
<td>66,259</td>
<td>20.5</td>
<td>960</td>
</tr>
<tr>
<td>financial, insurance, real estate</td>
<td>26,145</td>
<td>8.1</td>
<td>517</td>
</tr>
<tr>
<td>personal, entertainment, &amp; recreational services</td>
<td>28,259</td>
<td>8.1</td>
<td>262</td>
</tr>
<tr>
<td>health, education, professional</td>
<td>59,027</td>
<td>18.5</td>
<td>1,093</td>
</tr>
<tr>
<td>public admin.</td>
<td>35,467</td>
<td>10.9</td>
<td>745</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>CITY AND COUNTY OF HONOLULU</th>
<th>KALUAU NEIGHBORHOOD BOARD</th>
<th>KANEHO NEIGHBORHOOD BOARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>POPULATION IN FAMILIES</td>
<td>653,118</td>
<td>11,276</td>
<td>33,742</td>
</tr>
<tr>
<td>as percentage of total population</td>
<td>85.6%</td>
<td>99.5%</td>
<td>94.9%</td>
</tr>
<tr>
<td>NUMBER OF FAMILIES</td>
<td>178,516</td>
<td>2,222</td>
<td>6,720</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>HEAD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband/wife</td>
<td>147,829</td>
<td>82.0</td>
<td>2,378</td>
</tr>
<tr>
<td>Male only</td>
<td>7,992</td>
<td>4.5</td>
<td>136</td>
</tr>
<tr>
<td>Female only</td>
<td>22,695</td>
<td>12.7</td>
<td>407</td>
</tr>
<tr>
<td>WITH OWN CHILDREN UNDER 18</td>
<td>97,982</td>
<td>54.9</td>
<td>1,825</td>
</tr>
<tr>
<td>Female head</td>
<td>13,459</td>
<td>7.5</td>
<td>280</td>
</tr>
<tr>
<td>BELOW POVERTY LEVEL</td>
<td>13,405</td>
<td>7.5</td>
<td>213</td>
</tr>
<tr>
<td>MEDIAN FAMILY INCCE</td>
<td>$23,554</td>
<td></td>
<td>$25,572</td>
</tr>
</tbody>
</table>


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Table 8
Housing Stock and Characteristics:
City and County of Honolulu and Kahaluu and Kaneohe Neighborhood Boards, 1980

<table>
<thead>
<tr>
<th></th>
<th>CITY AND COUNTY OF HONOLULU</th>
<th>KAHALUU NEIGHBORHOOD BOARD</th>
<th>KANEOHE NEIGHBORHOOD BOARD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>TOTAL YEAR-ROUND</td>
<td>259,864</td>
<td></td>
<td>3,607</td>
</tr>
<tr>
<td>HOUSING UNITS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vacant (total)</td>
<td>20,652</td>
<td>8.2</td>
<td>247</td>
</tr>
<tr>
<td>vacant for sale</td>
<td>1,383</td>
<td>0.5</td>
<td>64</td>
</tr>
<tr>
<td>vacant for rent</td>
<td>9,632</td>
<td>3.6</td>
<td>94</td>
</tr>
<tr>
<td>held for occasional</td>
<td>3,331</td>
<td>1.3</td>
<td>23</td>
</tr>
<tr>
<td>other</td>
<td>7,964</td>
<td>3.1</td>
<td>66</td>
</tr>
<tr>
<td>TOTAL YEAR-ROUND</td>
<td>230,214</td>
<td></td>
<td>3,360</td>
</tr>
<tr>
<td>OCCUPIED UNITS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TENURE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>owner-occupied</td>
<td>114,792</td>
<td>49.9</td>
<td>2,224</td>
</tr>
<tr>
<td>renter-occupied</td>
<td>115,421</td>
<td>50.1</td>
<td>1,136</td>
</tr>
<tr>
<td>SELECTED CONDITIONS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lacking some or all</td>
<td>3,664</td>
<td>1.6</td>
<td>34</td>
</tr>
<tr>
<td>plumbing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5 or more persons/</td>
<td>16,951</td>
<td>7.2</td>
<td>202</td>
</tr>
<tr>
<td>room</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERSONS PER HOUSEHOLD</td>
<td>3.15</td>
<td></td>
<td>3.31</td>
</tr>
<tr>
<td>MEDIAN CASH RENT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(renter-occupied)</td>
<td>$279</td>
<td></td>
<td>$325</td>
</tr>
<tr>
<td>as % of median family income</td>
<td>14.2</td>
<td></td>
<td>15.2</td>
</tr>
<tr>
<td>MEDIAN VALUE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(owner-occupied)</td>
<td>$130,400</td>
<td></td>
<td>$139,100</td>
</tr>
<tr>
<td>MEDIAN MONTHLY MORTGAGE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(owner-occupied)</td>
<td>$494</td>
<td></td>
<td>$532</td>
</tr>
<tr>
<td>as % of median family income</td>
<td>25.2</td>
<td></td>
<td>25.0</td>
</tr>
</tbody>
</table>

Labor force data indicate that, like Kaneohe, Kahaluu had both a higher labor force participation rate and a lower unemployment rate than the islandwide population in 1980.

Excluding those in the military, Kahaluu's civilian labor force participation rate was 69.0 percent (versus 65.8 percent islandwide), and its unemployment rate was 3.3 percent (versus 4.6 percent islandwide). Additional analysis of census data indicates the Kahaluu unemployment rate was somewhat higher for females than for males.

The occupation and industry profile for Kahaluu's civilian labor force indicates that -- in line with its slightly higher median family income -- the area houses somewhat higher percentages of professional, administrative, and other white-collar workers (and lower percentages of service and blue-collar workers) than would be expected among the Oahu population.

This pattern is also reflected in Kahaluu's housing cost data for 1980. Compared to islandwide figures, owner-occupants had higher median monthly mortgage costs ($532 versus $494) and the median values of their homes were higher ($139,100 versus $130,400).

Renters also faced greater median monthly outlays ($325 versus $279), although this may reflect the small percentage of housing units vacant and available for rent (2.6 percent versus 3.6 percent islandwide) as much or more than it reflects renters' ability to pay.

It should be noted, however, that only 34 percent of Kahaluu’s housing units were renter-occupied (versus 50 percent islandwide), which may reflect both the somewhat greater median incomes and the less transient character of Kahaluu when compared to the Oahu population as a whole.

The average household size of 3.31 persons in Kahaluu exceeded the islandwide median of 3.15, possibly due to the large number of households with children. However, there is little direct evidence of crowded households in Kahaluu, where the proportion of units with 1.51 or more persons per room (6.0 percent) is below the islandwide figure (7.4 percent).

Major Forces for Change Without Hastic Kea Development

Forces shaping the future of Kahaluu are relatively limited. The two primary forces appear to be the slow but gradual growth of the population and a relatively high percentage of individual land owners.
There have been no major residential developments in the area since around 1980 and there are none being planned for the near future (other than Heeia Kea). Most new housing in the area will likely be from the in-filling of past projects, or by landowners of small parcels who seek to subdivide their land into smaller lots for perhaps five to ten single-family homes. Unless one individual or company consolidates its landholdings in Kahaluu, future developments will likely be haphazard in timing and design.

There is a limited number of acres near the Kahaluu Pond with commercial zoning. Several small businesses are currently located on the site, but mostly the land is undeveloped. This will provide some job-producing activities. Several other small parcels towards Waiahole also will provide room for more commercial activities. Overall growth of jobs in the area, however, is expected to be relatively small. Recently, the Market City development project, which would have provided a major shopping center to the Kahaluu area, was rejected by the City Council.

Kahaluu is an area of long-time residents, with only a sprinkling of newcomers. Along with the neighborhood board, various types of community organizations exist. Maintaining the overall rural character of the area appears to be a strong desire to many residents.

A major unresolved project which would probably have an impact in Kahaluu is the H-3 Freeway. Completion of the freeway, along with improved driving conditions from Windward Oahu to Honolulu, would most likely increase the demand for single-family housing. Kahaluu would feel this pressure since lands south to the Likelike Highway are largely already developed.

3.2.2 Kaneohe

History

To early Hawaiians, the area known today as Kaneohe consisted of two ahupua'a, Heeia and Kaneohe.

From all indications, these lands were the center of activity in the Kaneohe Bay region during pre-contact times. Archaeologists have found numerous significant heiaus in the area and the eight walled fishponds along the shores of Kaneohe Bay highlight the concentration of population in Kaneohe and Heeia. In the first census of the area in 1832, the Kaneohe ahupua'a had more than twice as many inhabitants as the next most populated ahupua'a (Heeia) in the Bay area. Together, the two areas contained 55 percent of the Bay area population at that time.
In early historic times, when Kahahana ruled Oahu, he sometimes lived in Kaneohe. After defeating Kahahana in 1783, Kahekili and most of his famous warriors lived in Koolau and Heeia. When Kamehameha I apportioned the conquered Oahu lands in 1795 to his warrior chiefs and counsellors, he retained as his personal property the ahupua'a of Kaneohe (Devaney, et al).

As throughout the entire Bay area, agriculture played an important role during much of Kaneohe's history.

Its size and diversity of resources allowed for a wide variety of agricultural operations compared to other areas. During the Great Mahele, the predominant type of land claimed was taro land. However, many other claims mentioned growing various vegetable crops and raising animals.

Sugarcane was first introduced into the Bay area in Kaneohe around 1840. The first major commercial operation, Kaneohe Sugar Plantation, began harvesting in 1885. By 1880, three sugar companies were operating in Kaneohe and another in Heeia.

At the height of production in the region, over 800 acres of sugarcane were planted in Kaneohe. In 1903 the closing of the Heeia Sugar Company marked the end of sugar production in the area.

During the last half of the 19th century, one of the characteristics of agriculture in Kaneohe was a emphasis on commercial crops and animals that were, for the most part, introduced. Rice production reached 200 acres by 1892 and around the same time the Kaneohe Ranch Company grazed some 2,000 cattle on 12,000 acres at Mokapu. A variety of new vegetables and fruits were also introduced during this period.

During the first two decades of the 20th century, over 1,000 acres of pineapple were produced from Kaneohe to Heeia.

During the 1930s and 1940s, the coastal areas of Kaneohe gradually urbanized. The Navy built a small sea plane base on the Mokapu peninsula in 1939. In 1951, the Marine Corps took over the base. The base provided a stimulus for support services that encouraged further growth of Kaneohe. With the completion of the Pali and Likelike Highways, Kaneohe became a suburban community, providing homes for a many people who worked in Honolulu.

Census characteristics

This section will focus upon Kaneohe's socio-economic characteristics, although limited comparisons will be made to Kahaluu and Oahu as a whole. Tables 5 through 8 show selected 1980 demographic, income, labor force, and housing characteristics for both the City and County of Honolulu and the Neighborhood Board areas of Kaneohe and Kahaluu.
Kaneohe's median age of 28.6 years is slightly greater than that for Kahalu'u (27.5 years) or the island as a whole (28.1 years). Since Kaneohe's population contains proportionately more senior citizens and children or young persons under age 20 than the islandwide population, this suggests a skewing of its working-age population toward persons in their forties or fifties rather than in their twenties or thirties.

The Caucasian proportion of Kaneohe's population is roughly equal to that for Oahu as a whole and Kahalu'u. Again, the Neighborhood Board Census statistics do not permit analysis of specific other ethnic groups such as Filipinos or Hawaiians or Japanese.

To an even greater extent than Kahalu'u, the population of Kaneohe appears both more Hawaii-born and less mobile than the islandwide population. In Kaneohe, 72.5 percent of the population (versus 55.1 percent islandwide) was born in Hawaii, and 83.8 percent (versus 48.2 percent islandwide and 57.1 percent in Kahalu'u) had been living in the same house five years previously.

The average educational level in Kaneohe appears lower than in Kahalu'u or islandwide. The proportion of the Kaneohe adult population with a less than high school education is 20.0 percent, compared with 16.0 percent in Kahalu'u and 14.4 percent islandwide.

Although not quite to the same extent as Kahalu'u, Kaneohe is a family-oriented area, with 94.9 percent of its population living in family situations (versus 99.5 percent in Kahalu'u and 85.6 percent islandwide). A higher percentage of its families (84.8 percent, versus 82.8 percent islandwide and 81.4 percent in Kahalu'u) are comprised of traditional husband/wife household heads.

Some 56 percent of Kaneohe families had children under 18 at home as of 1980, somewhat lower than the Kahalu'u percentage but greater than the islandwide one.

Kaneohe residents appear more affluent on average than residents islandwide or in Kahalu'u. The median family income of $29,453 clearly exceeds that for both Kahalu'u ($25,572) and Oahu as a whole ($23,554).

Additionally, the proportion of Kaneohe families below federal poverty levels (3.6 percent) is about half the islandwide figure.

Like Kahalu'u, Kaneohe residents had a higher labor force participation rate than was found islandwide, suggesting that additional household wage earners could be partly responsible for the higher incomes.

Excluding military, the civilian labor force participation rate for Kaneohe was 68.0 percent in 1980 (versus 65.8 percent islandwide). Unemployment was only slightly lower in Kaneohe than for the island as a whole (4.4 percent versus 4.6 percent islandwide and 3.3 percent in Kahalu'u).
An interesting difference between Kaneohe and Kahaluu was that male unemployment rates were somewhat higher than female ones in Kaneohe, while the reverse was true for Kahaluu.

The occupation and industry profile for Kaneohe's labor force suggests less involvement in service and retail work than is the case islandwide. However, Kaneohe's work force appears slightly more engaged in better-paying blue-collar work (such as construction and manufacturing) than is Kahaluu's, which suggests that family incomes in Kaneohe may be more evenly distributed than in Kahaluu.

An extremely high proportion of Kaneohe housing units are owner-occupied (72.0 percent, versus 49.9 percent islandwide).

The median value of these owner-occupied units ($122,500) is below that for Oahu as a whole ($130,400) or Kahaluu ($139,100), and the 1980 Kaneohe median monthly mortgage figure of $442 is also below the corresponding figures for Kahaluu and the island as a whole.

The reverse situation is true for Kaneohe's relatively few renters. Their 1980 median cash rent of $349 was seven percent higher than the Kahaluu figure and 25 percent higher than the islandwide figure. In Kaneohe, the median monthly rental was nearly 80 percent of the median monthly rental cost, whereas it was only 56 percent islandwide. Again, this may be partially accounted for by the low number of vacant units available for rent in Kaneohe as of 1980 (2.1 percent, versus 3.6 percent islandwide).

Kaneohe's average household size of 3.43 persons exceeded that for Kahaluu (3.31) and the island as a whole (3.15). As in Kahaluu, though, this does not suggest crowding or other substandard conditions, since the percentage of units with 1.51 or more persons per room was quite low, as was the percentage of units lacking some or all plumbing.

**Major Forces for Change Without Hecia Kea Development**

Major forces for change in the Kaneohe area will most likely be the natural growth in population and an in-filling of residential areas with slightly higher densities. Population during the 1970s remained remarkably stable, but as noted earlier, growth in the future is expected to increase more than some expect.

Presently, three housing developments are underway in the Kaneohe area. Two of these projects, the Haukele and Nani Pua II, are being developed by the Hawaii Housing Authority. Castle Hills along the Likelike Highway, is the only major private development. At this time, no new major projects are being planned for Kaneohe.

This community has become the retailing and service business hub for Windward Oahu. The Windward Mall, with its 530,000 square feet of space, is now the third largest shopping center in the State.
If the H-3 Freeway is completed, it would likely increase the densities of housing throughout Windward Oahu. In Kaneohe, a potential result would be an increase in apartment projects near the main commercial center.

3.2.3 Background on Heeia Kea

The sites of the Heeia sugar mill and the proposed project have an historical linkage in Hawaiian legend. As the legend goes, Heeia is the place where the souls of the dead leap into the sea. There are two distinctions in Heeia: Heeia-uli, the dark Heeia, and Heeia-kea, the white Heeia.

The Heeia sugar mill was located in Heeia-uli, which is judged to be the area extending from around the Windward Mall to the Heeia Fishpond, located on the Kaneohe side of the project site. Heeia-kea was described to be directly below Puu Maelieli, after the rise at Kealohi Point.

The legend states that, after a man died, he went to the places where dead men dwell. But before he jumped into the sea, his life was judged and his fate decreed.

Some souls were judged white and some were judged black, and at Heeia, the dividing came. The black souls leaped into the ocean south of Kealohi point, and the fortunate white souls found their haven beyond (Sterling and Summers, 1978).

Little written history was provided on Heeia Kea in the historical references used in this assessment. Much of this information is therefore from current residents of the valley, some of whom have lived there all their lives, and have ties of many generations to Heeia Kea.

It is presumed that the project site was somewhat isolated in pre-World War II days, as there is no distinct census information for Heeia Kea. The road fronting the site was not built until the visit of President Roosevelt to the islands in World War II. The site itself was used as a military training ground during the war, and there is still a bunker at the top of the mountain.

When the military left the valley, the remaining barracks began housing civilians who rented their units from sublessees.

Some people feel that around 75 to 100 units, including the houses on the existing subdivided lots, were standing in the valley. Some commercial agricultural activities occurred, but apparently most of the agricultural products were grown for personal use.

Because of the valley's proximity to both Kaneohe and Kahaluu, Heeia Kea is aligned with both communities, depending on the various boundary designations.
Whereas it shares the same City Council member as Kaneohe and Kahaluu, its residents vote with Kaneohe residents for its State House Representative, and with Kahaluu residents for its State Senator.

Although it shares much history with Kaneohe and the overall Heeia ahupua'a, it is outside of the Heeia CDP. The project site lies in the Kahaluu CDP and is in the jurisdiction of the Kahaluu Neighborhood Board.

3.2.4 Regional Issues and Concerns
Independent of Proposed Project

Minutes from Neighborhood Board Meetings

A review of the Neighborhood Board minutes during the last year (July 1985 through June 1986) was conducted to ascertain those issues or topics of current importance to the Neighborhood Boards. The following list of topics provides an overview of the issues which outline major concerns as indicated by lengthy or repeated discussion.

The project area is situated within the boundaries of the Kahaluu Neighborhood Board No. 29. This assessment also looked at the minutes of the Kaneohe Neighborhood Board No. 30; however, because of the geographical proximity of the project area to Kaneohe.

During the past year both the Kahaluu and Kaneohe Neighborhood Boards dealt with general land use issues and various proposed development projects.

The Kahaluu Neighborhood Board dealt with regional planning and growth issues, water resources, infrastructure, transportation issues and the preservation of agricultural lands. Other Kahaluu concerns were related to general community safety - crime, drunk driving, and drug enforcement.

The Kaneohe Neighborhood Board dealt with site-specific proposals; in the context of cumulative impacts on regional resources - transportation, public facilities/services, and growth.
Kahaluu Neighborhood No. 29. Topics

- Area/Community concerns: issues relating to general community safety dealt with crime, theft of agricultural products, drug cultivation/operations and traffic safety.

- Water Resources: The Board expressed concern over what they perceived as the Board of Water Supply’s lack of responsibility toward the community and their handling of the water situation. The community felt they have right to be informed of the situation in order to prepare and avoid havoc in the event of a crisis.

- Water Development: The Board framed a draft resolution in support of a water use moratorium until necessary instream and streamflow levels are ascertained.

- Proposed Land Use Ordinance Amendments: Board expressed concern regarding proposed zoning changes because they would further displace agricultural land, increase housing speculation and impact water resources.

- Tri-Party Agreements: Lengthy discussion regarding proposed concept to involve community in decision-making/discussion of proposed projects. Board drafted letter stating concerns regarding equality, possible litigation, feasibility and the effect on the Board’s advisory status. It was noted that no provision was made in the event that the parties do not reach an agreement.

- Public Works Projects: Board supported some projects relating to maintenance and improvement of infrastructure and/or roadways. Board expressed the desire to be informed of such projects and moved to contact the appropriate agencies of this decision.

- Correspondence received by Board: Department of Land Utilization notice was regarding a revised bill allowing agricultural product processing facilities on agricultural land of 15 acres or more. The Board discussed this notice expressing concern for the smaller farms and the possibility that slaughter houses might be allowed.
- Kualoa Ranch: This was a major topic in numerous Board meetings. Owners are interested in diversifying ranch activities because of financial pressures. Owners hope to maintain the integrity of the area, while increasing self-sufficiency through involvement in the tourist industry. The proposed activities include: horseback riding, trail rides on dune cycles, wind surfing, scuba diving, jet skiing and helicopter tours. The Board expressed concern that proposed expansion of ranch activities maintain compatibility with the surrounding environment, impact on water resources, ancient Hawaiian burial sites, and the expansion of proposed activities. Others supported this use as opposed to an alternative condominium proposal and stated that it would provide jobs.

- Development Plan Review/Amendments:

  - Board noted that the only major land use change request was HECO's Heeia Kea, which involved re-designation from agriculture to residential for affordable housing. It was noted that HECO is requesting more units than a past proposal which was opposed by the board. The Board expressed concern that this would "pave the way for the sale of land" for other uses. Board recommended denial.

  - Deletion of Heeia Biological Park: Board opposed unanimously.

  - Board expressed concern regarding the proposed development of additional water wells until the appropriate instream and streamflow levels are defined. This was due, in part, to recent water shortage problems experienced in Windward Oahu. Board denied.

  - Special Provisions: amendments for criteria defining prime agricultural land and other important lands passed unanimously, as long as they did not contravene General Plan. Board supported amendment defining rural areas.

  - Transportation Issues: Board consensus that alternative transportation solutions should be effected regardless of the H-3 decision. The Board was opposed to the 4(f) exemption, stating that it would establish a bad precedence. It was stressed that this was without regard to the Board's stand on H-3.

  - Kualoa Regional Park - concerns relative to the condition of park include: beachfront erosion, improvement/maintenance of grounds and public facilities, cultural and historical value of the land, upgrading/beautification of grounds and hiking trails. Other concerns related to future significance of the park as a cultural/archaeological site and the impact of the Kualoa ranch's proposed activities, particularly noise.

"
- Development Agreements - Board received information regarding the proposed bill for an ordinance. There was concern regarding the vague language of the bill and the possibility of increased costs of housing.

Kaneohe Neighborhood No. 30 Topics

- State Hokulele Housing Project: The Haiku Village Association asked for Board support in opposition of proposed project. Concerns regarding increased traffic to already heavily congested Kahekili Highway, increased demand for public facilities already at capacity, access and circulation of traffic into facility.

- Kokokahi YMCA Housing Project - Kokokahi Community Association expressed concern regarding impact of the project on the community. Proposed easements considered to be hazardous.

- Keapuka Housing: Housing project raised concerns regarding setback and easement of lots, lack of open space, as well as the cumulative impact on public facilities/services.

- Transportation Issues: Board discussed the need for alternative solutions to transportation problems and moved to network with local organizations and with neighborhood boards to develop alternatives. A forum on transportation which was sponsored by the Department of Transportation on H-3 was attended by a Board representative. He indicated that the State's presentation of the issue was biased, while those attending the meeting were in opposition. In the discussion following this report Kaneohe residents expressed concern regarding the windward traffic situation and growing impact on community.

- Hawaii Convention Center: Board supported convention center in Waikiki for the state employment and tax benefits.

- Oahu Cellular Phone/Radio Transmitter Application: Board opposed and requested that an EIS be effected prior to granting approval.

- Educational Concerns: Efforts to gather community and school in a forum to openly discuss problems. Concerns which were discussed included student-teacher ratio, competency testing of teachers, attention to fundamentals, budget, and school maintenance/improvements.

- Nani Pau Gardens II: concerns expressed by the Board relate to proposed exemptions (requested by HHA and PMY Inc.), use of preservation lands for residential use, and waiving future park facility.
- Kalaheo Landfill: Concerns related to the impacts of the proposed landfill on adjacent residents, as well as odor, rodents, noise, dust, aesthetics and health. Of most concern was the fact that original scope of project had changed thus requiring additional studies and an amended EIS.

- Heeia Landing: proposed residential subdivision raised concern regarding the impacts on environment and ecology of fishpond, access, and loss of future planning options for the pond's use.

- Koolau poko Development Plan Amendments: opposed by the Board as a package. This was due to the lack of a comprehensive assessment of the cumulative impacts of the individual developments in terms of the necessary public facilities, infrastructure, water and other resources which are currently strained. Board consensus was that current problems should be addressed prior to the approval of additional projects.

Community surveys and polls

Several surveys taken in the Kahaluu area provide further indications of community values and issues.

In January 1986, the Kahaluu Neighborhood Board conducted a mail-out survey of households in its area. A total of 542 survey forms (representing a return rate of 15 percent) was received back.

None of the questions asked specifically about the proposed Heeia Kea project (or any other specific residential development). However, several questions touched on the general issue of housing versus preservation of agricultural land, with somewhat conflicting results.

Asked first about the importance of the preservation of agricultural lands in the Kahaluu area, 51 percent said it was very important; 37 percent somewhat important; and 11 percent said not important.

The next question asked, "If some of the agricultural lands in our area had to be given up, which of the following should it be used for?" Three-quarters of the respondents checked only one response, including 48 percent for parks, 20 percent for houses, four percent for commercial, and 2 percent for industrial. However, 21 percent of respondents checked multiple categories, and these responses were not further broken down.

A subsequent key question was "Do you feel that taking lands out of agriculture to provide affordable housing is desirable?" Results were: yes, 66 percent; no, 33 percent; no response, one percent. Additionally, 71 percent thought the Neighborhood Board should "encourage and support legislation directed at providing affordable housing."
In other 1986 Neighborhood Board survey questions on area planning issues, 65 percent favored a public sewer system for the entire area; 71 percent supported construction of the H-3 freeway; 89 percent wanted Kahekili Highway widened from two to four lanes; and 65 percent favored preservation of historic sites in the Kahaluu area.

The only available previous Kahaluu survey taken during the 1980's was carried out by Rural Land & Water (1981) for another land developer. This was not technically a representative survey of public opinions, since the 212 respondents were not randomly selected. However, attempts were made to match the sample characteristics with known community demographics.

Asked to choose which phrase best characterized Kahaluu, 52 percent of these 1981 respondents said "agricultural," versus 34 percent "suburban" and ten percent "urban." More than 80 percent of those saying "agricultural" (and 72 percent of those saying "suburban") did not want any changes in the current status.

On a question about desired public facilities, the most frequent desired new facilities were recreational and educational, 37 percent; transportation improvements, 18 percent; emergency, medical, and protective facilities, 15 percent; shopping facilities, ten percent; and new or affordable housing, eight percent.

Taken together, these two survey results tend to suggest a familiar pattern of ambivalent attitudes toward population growth and development which is often encountered in rural or semi-rural Hawaii communities. On the one hand, there is a strong desire to maintain the present community character; on the other hand, there is an equally strong desire to have more of the facilities, amenities, and public services associated with a larger population base.

The Kaneohe Neighborhood Board also conducted a mail-out survey in the summer of 1985. This survey contained no questions directly about the proposed project, and only a few questions had even indirect relevance to the project.

One open-ended question did ask about "Kaneohe's most serious traffic/transportation problem." However, results as presented by the Neighborhood Commission stated only that 85 percent of the 866 respondents said "Heavy traffic." Also, an open-ended question at the survey's end asked about "other comments or concerns." Results published in the Board's newsletter indicate that some comments were received both for and against "affordable housing," but no percentage figures were published.
3.2.5 Summary of Existing Characteristics of Study Area

The populations of Kahaluu and Kaneohe share some similar characteristics. Compared to Oahu as a whole, both communities tend to have larger households, be more family-oriented and less mobile, and their median incomes are higher. Kahaluu and Kaneohe have relatively higher labor force participation and less unemployment than the islandwide community. The housing vacancy rate is very low in these communities and both experience a very high proportion of owner-occupied units.

In many cases, however, the population of these communities are different. Kaneohe has a lower educational level, and Kahaluu has proportionally more professional, administrative, and other white-collar workers. The median value of Kahaluu's owner-occupied units are much higher than those in Kaneohe and its median rent is lower than that of Kaneohe.

This information indicates that Kahaluu tends to have a more diverse population than Kaneohe, or Oahu as a whole.

While this community has more people who have attended college, it also has more people who did not attend high school. Its proportion of families below poverty level resembled the island's proportion, even though its median income exceeded the island median. Further, while some of Kahaluu's residents have higher-than-average mortgage payments, the community's renters must allocate a higher percentage of their incomes to rent, even though their median rent is lower than that of Kaneohe or Oahu.

Another major difference between these communities is their growth patterns. While Kahaluu and Kaneohe share agricultural roots, the pace of urbanization in Kaneohe was much quicker than Kahaluu. Today, Kaneohe's suburban nature, with its shopping malls and planned communities, is a sharp contrast to the slower-paced changes in Kahaluu.

The community polls and Neighborhood Board minutes indicate that, for the most part Kahaluu wishes to retain this rural pace, but improve public services and facilities, whereas Kaneohe's concerns center around their ability to accommodate their already growing population.

It appears that, while Kaneohe will continue to grow with its residential development and subsequent increase in commercial activities, the relatively high number of small, individual parcels in Kahaluu provide little indication of major growth.
3.3 Social Impacts Related to Heeia Kea

This section discusses those concerns expressed by islandwide organizations and by Study Area individuals and organizations as related specifically to the development of Heeia Kea.

Section 3.3.1 presents concerns raised by islandwide organizations on previous proposals for the valley. Concerns raised by Study Area organizations and individuals are discussed in Section 3.3.2.

Section 3.3.3 summarizes and discusses the collective set of concerns on Heeia Kea.

3.3.1 Issues and Concerns of Islandwide Organizations (as expressed on previous proposals for Heeia Kea)

This section presents issues and concerns on development of Heeia Kea expressed by community organizations with islandwide or wider membership.

It is stressed, however, that these concerns are not intended to represent the feelings of the total islandwide population, particularly because these organizations have specific or special interests. No polls or other systematic mechanisms have measured community feelings and concerns on this project, and it is highly unlikely that such an islandwide poll would be conducted.

It is further noted that, as of this writing, no islandwide organizations have submitted comments on the Preparation Notice for the Supplemental EIS.

This section therefore presents comments received from islandwide organizations on previous proposals for Heeia Kea. While some of these comments may not be totally relevant to the current proposal, most comments generally refer to residential development of this valley, regardless of the number of units and other differences between the current and previous proposals.

Issues and Concerns Expressed by Islandwide Organizations during the EIS Process

The EIS for Heeia Kea was prepared in 1982 and 1983. At that time, those islandwide organizations which commented on the Draft EIS are as follows and their letters are contained in the Final EIS:

Life of the Land
Citizens Against Noise
Oahu Metropolitan Planning Organization
Sierra Club

Based on a review of their letters, the following are major concerns of these organizations:
- Noise impacts on future residents, particularly from aircraft from the Kaneohe Marine Corps Air Station
- The future of residents now living in the valley
- The effect of the project on electricity rates
- Impacts on traffic in the immediate area, as well as regional implications
- Silt runoff resulting from construction activities
- Archeological impacts


As stated earlier, an application for an amendment to the Koolaupoko Development Plan was submitted in the 1985-1986 Annual Review Process.

The City Council hearing for the Koolaupoko Development Plan was held on March 20, 1986, at the Puohala Elementary School. Representatives from the following islandwide organizations presented testimony on that proposal:

Sierra Club
Conservation Counsel for Hawaii
Carpenter's Union
Hawaii Construction Industry Legislative Organization

A summary of concerns expressed is as follows:
- Compliance of the proposal with Coastal Zone Management regulations, particularly as related to runoff into the Kaneohe Bay
- The need to retain the open space and rural nature of this valley
- The need to provide more housing units to allow young Windward families to remain on the Windward side
- The need for jobs, particularly in the construction industry

Comment on Concerns of Islandwide Organizations Received Thus Far

Two areas of concern have been addressed by the applicant since receiving the aforementioned comments. The first is the future of residents now living in the valley. As discussed in Section 1.3, the applicant has an agreement with ten of the eleven families currently residing in the valley and, if the valley is developed, the families will be executed by the applicant. Relocation assistance was also offered to the remaining family, but was again not accepted.
The second is the effect of this project on electricity rates. This question was raised during the mediation process, described in Section 1.3, and HECO has explained that the project is being done by Malama Pacific Corp, a non-regulated sister corporation of HECO, and will not affect electricity rates in any way.

The other comments are similar to those raised by Study Area individuals and organizations, and these are further addressed in Section 3.3.2.
3.3.2 Project Issues and Concerns of the Study Area

This section discusses those concerns expressed by the Study Area individuals and organizations on the previous and the current development proposals for Heeia Kea.

Concerns Raised by Study Area Organizations on Previous Proposals

As of the writing of this assessment, no Study Area organizations have submitted comments on the Preparation Notice for the Supplemental EIS for the current proposals.

Comments on previous Heeia Kea proposals were raised, however, by the following organizations in the Study Area:

- Kahaluu Neighborhood Board No. 29
- Kaneohe Neighborhood Board No. 30
- Heeia Kea Community Association
- Hui Malama Aina O' Koolau
- Waiahole-Waikane Community Association

Most of these organizations responded to the Draft EIS published in 1983, and their letters are contained in Final EIS. Further, all of these organizations have commented on previous Development Plan proposals in letters and testimony.

The following is a summary of concerns raised by these organizations, based on a review of EIS responses, Neighborhood Board minutes and notes on the public hearings:

- Inconsistency between the proposed housing market and community need for low-income housing
- Increase in population and the effects of this increase on the following:
  - Traffic and transportation corridors
  - The waters of Kaneohe Bay
  - The Windward water supply, particularly as it relates to agricultural activities
  - Impact on public services, such as police protection and sewerage
  - The capacity of public facilities/infrastructure to meet the subsequent demand
- aesthetic impacts
- the need to keep this area in an agricultural designation, and the land's suitability for agricultural activities
- the inconsistency between this project and a desire to retain the regional rural character of Kahaluu

Comment:

Comment raised by the Study Area organizations are similar to those presented by Study Area individuals on the current proposal and are further discussed in the next section, "Interviews with Study Area Individuals".

It is noted that most of these organizations have expressed consistent concerns for all of the previous proposals for Heeia Kea. The Heeia Kea Community Association, however, has since taken a position to support the project upon reaching a relocation agreement with HECO.

Interviews with Study Area Individuals

Many community issues were raised on the previous proposals for developing Heeia Kea.

It is important to further explore these issues to see whether they are still apply to the current proposal, to gain a better understanding of the community’s concerns, and to identify other concerns which have not been voiced.

To achieve this, one to one interviews with residents of the Study Area were held. An effort was made to select individuals who collectively represented a diversity of interests. These individuals were selected either because of their visibility in community affairs or the proximity of their residence or activity to the project area. Some of them were identified or recommended by other people.

It is noted that all of those interviewed were familiar with previous proposals to develop Heeia Kea and some of them had provided comments on these proposals. All were provided a description of the current proposal. All individuals understood that their views were being solicited as individuals, rather than as organizational representatives.

Table 9 lists those interviewed. A breakdown of their backgrounds is as follows:
- 4 current members of the two Neighborhood Boards,
- 5 people who have key roles in community-oriented organizations or agencies,
<table>
<thead>
<tr>
<th>Name</th>
<th>Organization/Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harold Aloiau</td>
<td>Crown Terrace resident&lt;BR&gt;Kaneohe Lions Club&lt;BR&gt;Former member, Kaneohe Neighborhood&lt;BR&gt;Board</td>
</tr>
<tr>
<td>David Daignault</td>
<td>Chair, Kaneohe Neighborhood Board&lt;BR&gt;President, Owners Association of the&lt;BR&gt;Yacht Club Terrace Owners&lt;BR&gt;Association, Board of Directors</td>
</tr>
<tr>
<td>Lee Gomes</td>
<td>Kahaluu Business Group, representative for Businessmen South</td>
</tr>
<tr>
<td>Ronald Hales</td>
<td>Acting Chair, Kahaluu Neighborhood Board&lt;BR&gt;Member, Kualoa Regional Park Commission</td>
</tr>
<tr>
<td>Lehman Bud Henry</td>
<td>Alii Bluffs resident&lt;BR&gt;Board member, Friends of Heeia State Park&lt;BR&gt;Former member, Kaneohe Neighborhood Board</td>
</tr>
<tr>
<td>Charlene Ho</td>
<td>Executive Director, Key Project&lt;BR&gt;Hakipuu Community Association</td>
</tr>
<tr>
<td>Chester Koga</td>
<td>Kahaluu resident&lt;BR&gt;Immediate past Chair of the Kahaluu Neighborhood Board</td>
</tr>
<tr>
<td>Robert Mau</td>
<td>Owner/operator of The Deli at the Heeia Kea Pier</td>
</tr>
<tr>
<td>Carolyn Mau</td>
<td>Owner/operator of The Deli at the Heeia Kea Pier</td>
</tr>
</tbody>
</table>
Ken Ordenstein  Immediate past president of the Kaneohe Business Group  Charter member, Kaneohe Jaycees
Bonnie Pamatigan  Nearby resident on the Kahaluu end of Heeia Kea
Van Peterson  Kaneohe Neighborhood Board, Chair of the Development and Planning Committee
Charles Reppun  President, Hui Malama Aina O’ Koolau
James Sanders  President, Heeia Kea Community Association  Head Coach, Kaneohe Pop Warner Association
Edwin Tsukasa  Chair, Windward Health Subarea Council Board of Directors, Kaneohe Senior Center  Former member, Kaneohe Neighborhood Board
Martha Turner  Windward District Coordinator, Honolulu Community Action Program, Inc.
Violet Van Epps  Board member, Friends of Heeia State Park  Manager, Kaneohe Satellite City Hall  Former member, Kahaluu Neighborhood Board

Note: Organizational affiliation is provided strictly to reflect the informant’s degree of community involvement and is not intended to imply organizational concurrence.
- 4 people who live either on or near the project site,
- 2 people who are involved in business organizations, and
- 2 people who operate a business directly across the street from the project site.

A summary of issues raised is hereby listed, followed by further discussion on each issue. Note that these are not presented in any particular order and are not intended to indicate priority. A systematic poll is recommended if such priority identification is desired.

- All those interviewed believed there is a strong need for housing in the area, and most felt that housing is appropriate for Heeia Kea. People differed, however, as to the type of housing the valley should accommodate. Some felt that Heeia Kea should have homes priced for average and higher income families. Others felt that Heeia Kea should address the need for low-priced homes.

- The project's traffic impacts on the immediately surrounding areas, as well as the regional Trans-Koolau system, was raised by all those interviewed. Some indicated that they would be satisfied if the developer made necessary improvements to accommodate this particular project. While the others acknowledged that the regional problem "was not the applicant's problem", they also felt that the applicant should either participate in solving the regional problem, or that the project should not proceed until the regional problem is solved.

- All of those interviewed expressed appreciation for the site's existing beauty and a desire to retain it. Some felt that, with proper planning, the proposed project could maintain and enhance this beauty. Others felt that any change to the existing character would be a negative one, although some of these people also felt that the trade-off would be worthwhile if the project were primarily affordable housing.

- Some people felt that Heeia Kea's most important value was that it serves as a transition, or buffer area, between suburban Kaneohe and rural/agricultural Kahaluu. This concern was expressed even though the proposed density would be lower than that of the abutting community on the Kahaluu side. These people were primarily Kahaluu residents and they wanted to retain this quality, either with a very low density residential project, or by establishing agricultural activities, or by planning for both uses through "whole valley planning".
Other concerns raised, though not as frequently, were the need to continue to stimulate the construction activities in Windward Oahu which would, in turn, provide jobs; the noise impact of KMCAS aircraft on future Heeia Kea residents; the project's compatibility with the Heeia Kea pier and Kaneohe Bay's ocean resources, particularly as related to Coastal Zone Management regulations; the future of the current residents; runoff into Kaneohe Bay; and the type of onsite industrial activities.

Each of these concerns are hereby discussed. They are first presented in the manner in which they were raised, followed by comments addressing each item.

Need for housing -- All those interviewed felt that Windward Oahu needs more housing, although the reasons for this need varied.

Some felt that housing is needed so that young people can remain on the Windward side when they start new families. This way, the area can still continue to grow and prosper, but with people who were born and raised in the area. Other people wanted to see more houses because it would stimulate the construction industry on the Windward side.

These people included both Kahaluu and Kaneohe residents. Those that liked the suburban-type development generally tended to support the proposed development.

It is noted that the Kahaluu residents who felt this way expressed frustration at the community's predominance of low-priced homes. They felt that people believe that Kahaluu is a 'second-class' community and that its residents have no stimulation for upward mobility. They felt that more middle class homes and subdivisions would help diversify the community, which would in turn create a healthier community and instill pride among Kahaluu's residents.

Others felt that more housing is needed because the prices of existing houses are prohibitive for many Kahaluu families. They cited existing situations where young families must double up with their parents, and where renters pay high rent and still cannot afford to buy a house.

These people generally opposed the proposal because they felt the project does not address this need. They expressed concern that the economic disparity between the future Heeia Kea residents and existing Kahaluu residents would lead to resentment and, ultimately, crime.

Almost everyone interviewed felt that housing would be an appropriate use for Heeia Kea.
Comment: While people generally agreed that Heeia Kea should be used for residential purposes, they disagreed on the type of housing.

This disagreement is largely due to a difference in what people think is "good for their community". Those that wanted to see a suburban-type development apparently are comfortable with this conventional form of addressing housing needs, or they generally wanted to see the Windward side continue to grow. It is not known, however, if all of the people who expressed this desire actually live in this type of setting.

Those that wanted to see Kahaluu "upgraded" seem to share this feeling and apparently feel that their community should have housing comparable to Kaneohe, so that eventually the upwardly mobile qualities of suburban living will be held by Kahaluu residents. This was seen as an improvement to the way things are now.

On the other hand, people who wish to see low-priced homes in Heeia Kea apparently feel that their community's housing needs will not be addressed by conventional mechanisms. To them, the proposal is not just inappropriate, but would contribute to a housing supply which discourages the accommodation of low income families.

The census information indicates that there is indeed a wider income disparity in Kahaluu than in Kaneohe and that Kahaluu’s renters must put more of their income into rent. Further, Kahaluu has a relatively higher proportion of households with children over 18 years of age, which indicates some amount of doubling up.

In the mediation process on a previous proposal, the applicant did explore possibilities of predominant low-priced housing in Heeia Kea.

It is understood, however, that, to achieve this, a relatively high density of units would be needed. This would have been contrary to the desire to retain the rural character of the area with a low density development. Note that, in the current proposal, a portion of the project is intended for low and moderate income families.

Regional and Immediate Area Traffic Implications -- Everyone mentioned the existing traffic problem, characterized by bumper to bumper traffic and a one-hour commute to Honolulu.

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Those interviewed generally suggested one of the following three solutions:

1. The applicant should concentrate on solving the problems around the site (excluding Long Bridge), since the regional solutions are beyond the applicant's control.

2. The applicant should solve the problems around the site, and participate in community and government planning efforts to solve traffic problems on Long Bridge and in Kaneohe.

3. The project will only add to the existing problem and so should not progress until the problem is solved.

Comment: As the islandwide polls and community surveys indicate, traffic is a growing concern for everyone and those interviewed from the Study Area were very consistent with this.

A traffic impact analysis is currently being conducted for the supplemental EIS. It is noted, however, that, the traffic concerns were translated into very personal terms -- how much longer will I have to wait in bumper to bumper traffic. Many people seemed to feel that no single roadway improvement will solve the current congestion and, to the residents of the Study Area, any addition of cars will exacerbate existing problems.

Haeia Kea's Visual Attractiveness -- All of those interviewed expressed appreciation for the site's existing beauty and a desire to retain it.

Some felt that, with proper planning, the proposed project could maintain and enhance this beauty. Some suggested that the way to enhance this beauty is to build average- and higher-priced homes, as opposed to low-priced homes which might cause visual deterioration. These people stressed the need for attractive landscaping and buffer areas.

Others felt that any change to the existing character would be a negative one, although some of these people also felt that the trade-off would be worthwhile if the project were primarily affordable housing.

Comment: It is understood that the applicant intends to establish a planned community with appropriate elements to retain the area's beauty and complement surrounding areas. For example, a proposed 40-foot greenbelt along Kamehameha Highway would retain some of the open space quality of the area.
For those who are willing to compromise the site’s status quo if the project provides substantial affordable housing, this trade-off does not seem feasible.

The affordability of housing prices is somewhat dependent on "spreading the costs" of construction and financing among a large number of units. As stated earlier, the applicant had previously looked into this and found that a relatively high number of units would be needed to bring the per housing unit price to an level acceptable by public agencies. This would be inconsistent with the community’s desire to retain the area’s character.

Heeia Kea’s Function As An Urban-to-Rural Transition -- Some people, particularly Kahaluu residents, felt that Heeia Kea’s most important value or function to the neighboring community was that it serves as a transition, or buffer area, between suburban Kaneohe and rural/agricultural Kahaluu. They explained that, as they travel towards Kahaluu on Kamehameha Highway, they feel a sense of relief from the fast-paced Kaneohe as they drive around Long Bridge and near Heeia Kea.

It was feared that, if this transition quality were greatly changed, then there would be less distinction between the urban and rural portions of Windward Oahu, and, eventually, more development would occur in Kahaluu.

Some of those interviewed pointed out that this concern is consistent with that expressed for previous proposals. They did not feel that the decrease of proposed units would decrease the project’s aesthetic impacts.

With a feeling that the development of Heeia Kea is inevitable, these people wanted to retain this quality, either with a very low density project, or by establishing agricultural activities, or, through “whole valley planning”, which would allow the compatible co-existence of both residential and agricultural uses.

Regarding agricultural activities, some of those interviewed pointed out that a portion of the area is suitable for agriculture based on designations of Agricultural Lands in the State of Hawaii (ALISH). They felt that, since the project area was once used for agriculture, and since it lies in a community which desires to maintain agricultural activities, Heeia Kea should therefore be put into agricultural activities. This would be in harmony with a community desire and consistent with what they believe as the site’s potential.

Some people further indicated their feeling that, even if the proposal would leave 33 acres in the Agricultural designation, there is no assurance from the applicant that these lands would be used as such.
Comment: This concern is somewhat an expansion upon the previously discussed desire to maintain the area's beauty. The difference is that the former desire is purely a visual preference, whereas the desire to retain Heelu Kea as a buffer area stems from a sense of social well-being provided by all of the existing qualities of the area. For example, visually the proposed project may be less dense than the housing development on the Kahaluu side. Interviewees never raised this apparent conflict, however, presumably because the housing development on the Kahaluu side does not share the same transition function.

While the proposed project can retain some of the visual qualities of the area, the extent to which it addresses the overall aesthetic qualities of the site depends largely upon the community's belief that this is a "good project".

Although this judgment is highly subjective, the key element or quality of the project which will have great influence on people's final decision is whether or not these people feel that this is "their" project. The community would feel this sense of ownership if the project addressed community concerns.

Some people felt that the proposal has already made an effort to address community concerns and they were satisfied with the results. As pointed out earlier, however, others felt that the current proposal is very similar to previous proposals and, as with these previous proposals, does not address the real problem of affordable housing.

Regarding the fear that the development of Heelu Kea would set a precedence for further development along the Kahaluu coast, this decision lies in the public planning policies and plans. Currently, the plans do not call for further development and it is highly unlikely that major development will occur because of the high number of small individual parcels. Heelu Kea, on the other hand, lies in the Urban Fringe designated by the City and County of Honolulu General Plan.

An agricultural feasibility study is contained in the EIS and addresses the site's potential for agricultural activities. It is noted that in previous proposals, the applicant explored ways to establish the non-developed lands for agricultural use, although no agreements or conclusions were reached at that time.
It is noted that not all of the Kahaluu residents interviewed felt that Heeia Kea should be used for agriculture. Some of these people felt that the valley's agricultural activities would benefit only those who would actually use the valley and that the valley should be put to greater use. Further, the community polls indicate that most people felt that land could be taken out of agriculture if it were used for affordable housing.

Other concerns raised -- Though not as frequently, the following were raised:

- The need to continue to stimulate the construction activities in Windward Oahu which would, in turn, provide jobs.

- The noise impact of KMCAS aircraft on future Heeia Kea residents.

- The overall adequacy of public facilities, particularly the sewerage system -- While people were pleased that the proposed sewerage improvements would also benefit neighboring communities, they were concerned that the cumulative impacts on the Aikahi treatment plant would be negative.

- The project's compatibility with the Heeia Kea pier and Kaneohe Bay's ocean resources -- One person felt that the project should be compatible with community desire to develop land fronting Kaneohe Bay around a theme emphasizing the recreational and natural resources of the Bay. He felt that, because no regional plan currently exists, the applicant should participate with regional efforts to formulate this plan. He felt that the current proposal, with its proposed industrial and commercial components, would generally complement the pier.

- The future of the current residents

- Runoff into Kaneohe Bay

- Type of onsite industrial activities -- One person felt that the industrial activities might bring in more slow traffic, i.e., cars with boat trailers.

Comment: The EIS contains information regarding the noise impacts, the impacts on the sewerage system, and runoff into Kaneohe Bay resulting from the project.
The desire to see increased and continued construction activity on the Windward side is related to some people's desire to encourage more growth on the Windward side. They saw this as a "healthy" alternative to very little or no growth.

Regarding the regional development of land around Kaneohe Bay, it is understood that a private individual is currently proposing such a plan to the Kaneohe community. It is recommended that the applicant explore possible participation in this effort. The future of the current residents was discussed in Section 1.3.

3.3.3 Analysis of Community Issues and Concerns Specific to Heeia Kea

The bulk of concerns raised on the development of Heeia Kea center around quality of life issues. Quality of life issues generally revolve around a personal and community sense of well-being.

Such issues range from people's perception of how a project may affect an individual's daily activities and routine to how a project may ultimately impact a particular community's social fabric and goals for the future.

The social issues previously discussed generally fall into three categories of how people see this proposal affecting their quality of life: need for housing, inconveniences of inadequate public systems and infrastructure, and the creation or maintenance of a community identity.

Need for housing

While this need ultimately boils down to a personal need for housing, it is usually expressed by a community which feels that such a need exists in their midst. In other words, while survey respondents may not need housing themselves, they indicate that affordable housing is needed because they may know someone or a group of people in this situation.

Some people felt that more housing will allow young families to remain on the Windward side, as well as stimulate the economy, particularly the construction industry. Heeia Kea will improve this situation for those who believe that more market housing units are needed, or for those who are looking for a house at market rate.
For those that feel that the project should address the need of those who cannot afford to participate in the current housing market, most of whom are renters or are doubling up with their families, Heeia Kea is not a solution.

**Inconveniences of Inadequate Public Systems and Infrastructure**

The best example of this quality of life issue is traffic. This is increasingly an islandwide and Windward area concern, mostly because people find themselves spending more time in bumper to bumper traffic.

Traffic was the most common concern on the Heeia Kea project, although people did not blame this or any other particular project.

The kinds of solutions recommended by the Study Area individuals depended largely upon their "acceptance" of the traffic problems. Those who were satisfied by the applicant making improvements for this project seem to feel that traffic is and will be a perennial problem and people must learn to live with it. Those who wanted to not pass any new projects until the problem is solved seem to feel that the situation will eventually change for the better.

The medium of these two extremes is the position that the applicant should make improvements as necessary, but also participate in community efforts to solve traffic problems.

The extent to which Heeia Kea will affect this quality of life issue largely depends upon the timing of the project relative to regional roadway improvements. If the project "suddenly" added many cars to the road, then people will indeed feel more pressure. The applicant has indicated, however, that the project will require a couple of years to obtain approvals and permits, and a couple of years beyond that for project build out. It is believed that some of the roadway improvements will already be completed and this will minimize the impacts.

**Maintenance or Creation of Community Identity**

As discussed earlier, the intangible transition quality of Heeia Kea signals the arrival to "country", even though there are suburban-type developments on both the Kahalu'u and Kane'ohe sides of Heeia Kea.

The question of impacting the regional identity therefore goes beyond the project's compatibility with the surrounding area. It deals with whether or not this project will contribute to the desired direction of the Kahalu'u community.
It is difficult to pinpoint a community goal or aspiration and this assessment relied on the community surveys and interviews with Study Area individuals to obtain a sense of how Heeia Kea "fits in" the existing and desired social fabric.

Based on the community surveys (Section 3.2.4), it appears that Kahaluu residents wish to retain the rural and agricultural qualities of the area, although they seem to have an equally strong desire to have more of the facilities, amenities and public services associated with a larger population base.

Some of the Kahaluu residents interviewed reflected this two-fold desire, and they may feel that the current proposal will "threaten" the rural identity they wish to retain.

Others, however, stressed the desire for more facilities and amenities and felt that more market developments will help "upgrade" Kahaluu by adding diversity. To them, the current proposal is an asset.

For the Kaneohe residents interviewed, most did not discuss the project's value as a transition area. Rather, they centered on the project's infrastructure impacts. They did not seem to feel that the proposal would threaten their community identity, presumably because the proposed project resembles existing development in Kaneohe.

It is noted that the project's future residents will most likely have consistent demographic characteristics as the existing Study Area population. Their incomes would probably be similar to those already in the Study Area, and the family-orientation characteristic would probably be consistent with existing situations.

Further, the project site itself has a mixed identity. Because of the valley's proximity to both Kaneohe and Kahaluu, Heeia Kea is aligned with both communities, depending on the various boundary designations. Whereas it shares the same City Council member as Kaneohe and Kahaluu, its residents vote with Kaneohe residents for its State House Representative, and with Kahaluu residents for its State Senator.

Although it shares much history with Kaneohe and the overall Heeia ahupua'a, it is outside of the Heeia CDF. The project site lies in the Kahaluu CDF and is in the Jurisdiction of the Kahaluu Neighborhood Board.

Thus, in terms of community identity, some Kahaluu residents may feel that their rural identity would be threatened, even though the project site is abutted by single family residential development on the Kahaluu side and despite the distance between the project site and the actual agricultural activities.
Other Kahaluu residents, and most Kaneohe residents, may not feel this identity impact either because they are accustomed to this type of project, or because the project is a step in the direction they wish for Kahaluu.
REFERENCES


City and County of Honolulu, Kaneohe Neighborhood Board. Community Survey Results" in Huki Like Newsletter. April 1986.


Hawaii State Housing Authority. Hawaii Housing Authority; Annual Report July 1, 1984/June 30, 1985. Honolulu, Hawaii


APPENDIX D

MARICULTURE FEASIBILITY STUDY
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SEPTMBER 3, 1986

GRAY, HONG, AND ASSOCIATES
119 MERCHANT STREET, SUITE 607
HONOLULU, HAWAII 96813

ATTENTION: MR. DAVID B. BILLS
PROJECT ENGINEER

SUBJECT: AQUACULTURE/MARICULTURE FEASIBILITY FOR LAND
PARCEL AT HEEIA KEA, TAX MAP KEY 4-6-16-32,
KOOLAUPKO DISTRICT, ISLAND OF OAHU, STATE OF
HAWAII.
List of Exhibits and Tables

EXHIBIT 1  Assessment of Lands for Aquaculture
EXHIBIT 2  Topographical Map - Locating Subject Parcel
EXHIBIT 3  Topographical Map - Soil-Slope Suitability for Mariculture
EXHIBIT 4  Proposed DP Land Use Map
EXHIBIT 5  Agricultural Lands of Importance to the State of Hawaii
EXHIBIT 6  Soil Classifications
EXHIBIT 7  Rainfall, Solar Radiation Site Data
EXHIBIT 8  Chemical Analyses of Water-supply Sources in Windward Oahu

TABLE 1  Available Mariculture Land Based on Topography
TABLE 2  Suitability of Soils in Subject Parcel for Mariculture Use
TABLE 3  Potential Mariculture Acreage
SCOPE OF REPORT

This report investigates the feasibility of aquaculture/mauriculture on the approximately 219 acres of land constituting the subject parcel, owned by Hawaiian Electric Company, Inc. The land investigated is situated in Heeia Kea, directly mauka of Kamehameha Highway near Heeia Kea Small Boat Harbor.

Total potential mariculture land is calculated from topographic and soils characteristics of the site. Feasibility for potential mariculture acreage follows, based upon analysis of water supply and discharge constraints for the subject parcel. The potential of the project is put into perspective in a brief analysis of the criteria for and constraints to successful mariculture given current technology. A general evaluation is made for the project given historical and current economic realities of the mariculture industry in the State of Hawaii. Finally, based upon the above analysis, conclusions are presented regarding the economic soundness of mariculture activities on the subject parcel.

TOPOGRAPHY

Earthen pond construction costs become unreasonably high on slopes greater than or equal to 5 per cent. The State of Hawaii Department of Economic Development has assessed State lands for aquaculture suitability. 135,000 acres have been declared primary lands for aquaculture development and over 500,000 acres were assessed as secondary lands. The subject land parcel has been assessed as secondary land (Exhibit 1).

The property topography ranges from fairly level (makai) to gently sloping to steeply sloping upper portions (mauka) as shown in Exhibit 2. A detailed analysis of suitable lands for pond construction based on topographic characteristics of the site
shows approximately 30 of the 219 total acres to be on a slope suitable for mariculture development (Exhibit 3). The remaining 189 acres are considered too steep for economically justifiable pond development (Table 1). Mariculture ponds are generally 1 meter deep with 0.5 meter freeboard, have 2:1 - 3:1 sloped dikes, and 0.5 to 2.0 acres in water area. Ponds are built with adjacent units sharing a common levee to save on construction costs. Each pond must have a separate water inlet and outlet.

SOILS

The Hawaii State Department of Agriculture ratings under the ALISH System (Agricultural Lands of Importance to the State of Hawaii) classifies about 46 acres of land in the central part of the property as Other Important Agriculture Land (Exhibit 5).

While pond/mariculture soil productivity considerations differ from agricultural ones, there are some areas of correlation. Major differences between soil needs for mariculture and agriculture lie in soil structure. Soil fertility needs are more similar for the two food production systems and often prime soils for agriculture are most suitable for aquaculture.

The subject land parcel contains six subseries of soils as classified by the U.S.D.A. Soil Conservation Service (SCS) as shown in Exhibit 6. Descriptions of these soils are as follows.

Ewa Silty Clay Loam, Moderately Shallow, 0 to 2 Percent Slopes (Ewa)

This subseries of the Ewa series is located in a narrow strip of land bordering Pahana Highway on the Kaneohe (east) side of the property. The topsoil consists of dark reddish-brown silty clay loam about 18 inches thick. The subsoil is dark reddish-brown and dark red silty clay loam, with a subangular blocky structure, moderately shallow and varying in depth. The substratum consists of coral limestone at a depth below the surface of 20 to 50 inches. Both the topsoil and subsoil have a pH of neutral.
Mokuleia Clay Loam (Kt)

This subspecies of the Mokuleia series occupies a narrow strip of land bordering the mauka side of the highway on the Kahuku (west) side of the property. The topsoil consists of a very dark grayish-brown loam about 16 inches thick. The subsoil is a dark brown to light gray single grain or loamy sand of 34 to 48 inches in depth. The topsoil is neutral and the subsoil is moderately alkaline.

Kokokahi clay, 6 to 12 Percent slopes (KtC)

A small pocket of this subspecies of the Kokokahi series is located along the highway in the extreme makai-Kahuku corner of the property. The topsoil consists of very dark gray and dark gray clay about 14 inches thick. The subsoil is a dark grayish brown clay with a subangular blocky structure and is about 12 inches thick. The substratum is a grayish-brown and light brownish-gray clay, 14 to 20 inches thick. The topsoil is slightly acid to neutral and the subsoil and substratum are slightly acid to mildly alkaline. The soil has a high shrink swell potential. Workability is difficult because of the sticky, plastic nature of the clay and because of the resulting narrow range of moisture content.

Alaeloa Silty Clay, 15 to 35 Percent Slopes (AeE)

This subspecies of the Alaeloa series is located mostly in the makai section of the area zoned Conservation. The topsoil consists of dark reddish-brown silty clay about 10 inches thick. The subsoil is dark red and red silty clay with a subangular blocky structure and about 48 inches thick. The substratum is soft, weathered basic igneous rock. The topsoil is medium acid and the subsoil is strongly acid.

Alaeloa Silty Clay, 40 to 70 Percent Slopes (ALF)

This subspecies is located entirely on land zoned as Conservation on the upper slopes of the project. This soil is the same as Alaeloa silty clay soil of the lesser slope, except that run-off is rapid to very rapid and the erosion hazard is severe.
Lahaina Silty Clay, 7 to 15 Percent Slope (LaC)

This subseries of the Lahaina series occupies the area extending mauka from the highway on the Kaneohe side and from the strips of land designated EmA at the central-makai border and Mt at the makai-Kahuku border. The topsoil consists of dark reddish brown silty clay about 15 inches thick. The subsoil is a dusky red and dark reddish brown, subangular blocky silty clay and silty clay loam about 45 inches thick. The substratum is soft, weathered basic igneous rock. The topsoil is medium acid and the subsoil is slightly acid to medium acid. This subseries includes some steep areas and areas with a few stones on the surface.

The minimum soil requirements for mariculture are (1) compactibility of the topsoil to prevent undue amounts of seepage (2) topsoil depth sufficient to prevent leakage of pond water (one meter depth) into permeable subsoil and (3) workability during pond construction. Only the part on the parcel classified Lahaina Silty Clay (LaC) meets all of the above requirements (Table 2). Preferable soil pH for mariculture use would be slightly alkaline to neutral, however production is feasible in this soil type.

POTENTIAL MARICULTURE ACREAGE

Possible mariculture acreage for the subject parcel is limited to the 30 acres of fairly level or gently sloping land out-lined in Exhibit 3 which lies within the LaC soil classification. Table 3 outlines total land available meeting criteria for both topography and soil type.

GEOLOGY

A generalized geologic map (Geological Survey water-supply paper 1894, Plate 1) of Windward Oahu shows that the subject parcel consists of Alluvium at the lower elevations and Honolulu Volcanic Series at the higher elevations. Lava flows of the Honolulu Volcanic Series are generally not very permeable and wells there have low to moderate yields. The Alluvium is composed of silt and clay, lesser amounts of sand and gravel, and some gravel and cobbles. Young Alluvium is generally more permeable than the near-surface older Alluvium. Yields of wells in Windward Oahu in Alluvium are generally low.
WATER RESOURCES

The most reliable source of ground water is the high-level water in the basaltic lava flows. High level ground water maintains the base flows of streams, water development tunnels and pumped wells. Slightly more than half the total base flow enters streams as diffused ground water effluent between altitudes of 225 and 150 feet. The most favorable area for ground water development is above an altitude of 200 feet in the major stream valleys. Water above an altitude of 500 feet is diverted by tunnels. Numerous streams drain into Kaneohe Bay relatively near the subject parcel. The Kahaluu, Ahuimanu and Waihee streams are closest to the subject parcel. The total long-term average discharge of the Kahaluu stream at its confluence with the Ahuimanu stream is 5.4 million gallons per day (mgd), and a flow (Q90) of 3.3 mgd is equaled or exceeded 90 per cent of the time. Below the confluence, the combined long-term average discharge is 9.5 mgd and the Q90 is 4.2 mgd. The Waihee stream flows northeastward and joins the Kahaluu stream after losing much of its flow to the Higa ditch. The streams are short and have steep gradients. The annual maximum discharge generally occurs in the cooler months from October through April. The minimum mean weekly rainfall around the subject parcel is about 1 inch (Exhibit 7).

WATER QUALITY

Contamination of freshwater by underlying sea water often occurs in the coastal area of Windward Oahu. Chemical analyses of water supply sources in Windward Oahu is shown in Exhibit 8 (Geological Survey water-supply paper 1894, Table 11). The pH generally ranges from 7 to 8. Ground water temperatures ranges from 65 °F to 79 °F in individual wells. Water from basaltic aquifers ranges in temperature from 65 °F to 73 °F, depending on altitude and climate. Water from limestone aquifers ranges from in temperature from 77 to 79 °F, depending on ocean temperature, climate, and the amount and temperature of irrigation water recharging the aquifer.

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WATER SUPPLY FOR AQUACULTURE

Water supply is one of the more important factors in the selection of a site for an aquaculture facility. The following characteristics of the water supply are desirable:

1. Constant flow with minimal fluctuation.
2. High dissolved oxygen concentration.
3. No chemical or organic contamination.
4. Acceptable pH range.
5. Low siltation levels.
6. Does not contain predators or disease agents.
7. Acceptable temperature range.

WATER QUANTITY REQUIREMENTS

An area of less than 12 acres has been estimated to be feasible for aquaculture. Freshwater prawn is the major commercial high market value aquaculture product in Hawaii. Water requirements for freshwater prawn culture on a daily basis is about 25 gallons per minute per acre or 36,000 gallons per acre per day. A 12-acre freshwater prawn nursery and grow-out facility would require 432,000 gallons of water per day. In addition to the daily requirements, about 800 gallons per minute (gpm) should be available for filling up an acre pond with an average depth of 3.5 feet in 24 hours. The water supply for freshwater prawn culture should have a capacity of 1,100 gpm.

Shrimp is a promising aquaculture product in Hawaii. Shrimp grows well in water with salinity close to that of seawater. Freshwater is also required to prevent salinity fluctuations due to evaporation and seepage. The common water exchange rate used in intensive shrimp ponds is 20 percent of the pond volume per day. This would translate to a 160 gpm saltwater flushing rate for an acre pond or 1,920 gpm for a 12-acre farm. Evaporation
and seepage rates can be as high as 2.5 cm or 27,156 gallons per acre per day. To maintain the optimal salinity for growth, freshwater would need to be added to the ponds at a rate of 18 gpm. A 12-acre shrimp farm would thus require around 216 gpm of freshwater. In addition, about 800 gpm saltwater is required to fill up an acre pond in 24 hours. The total saltwater pumping capacity required for an intensive shrimp farm would thus be 2,720 gpm.

FEASIBILITY OF DEVELOPING WATER SOURCE AND WATER DISCHARGE

Alluvium has limited importance as a source of freshwater and the development of freshwater wells where ponds can be located do not appear feasible. The streams could be a source of freshwater but are not located close enough to the parcel suitable for aquaculture. Tapping the streams and conveying the water to the parcel would be costly and technically involved because of the gradients. Alternatively, the freshwater could be obtained from municipal supplies. The agricultural rates for freshwater are $0.84 per 1,000 gallons for the first 13,000 gallons and $0.69 per 1,000 gallons thereafter, per month. Based on the daily 12-acre freshwater prawn farm water requirements of 432,000 gallons, the average monthly cost for water would be about $8945. This cost would be prohibitive for profitable operation.

Rock formations which contain ground water of high salinity near shore are basaltic lava flows and coralline limestone. An Oahu geologic map (Geological Survey water-supply paper 1894, Plate 1) indicates that such rock formations are not present in the subject parcel and it is doubtful if substantial seawater wells can be developed at all.

Even if seawater wells could be developed, disposal of pond effluents would present problems. Ocean disposal is costly because of the need for multi-stage treatment plants and ocean outfalls to meet water quality standards of the receiving waters. The success of on-site disposal using subsurface injection wells depends on the geologic and hydrologic environments. Sub-surface disposal in low-lying areas and the coastal plain will likely lead to contamination of beaches and near-shore areas. Wastes injected into ground water bodies near the coast are likely to spread laterally and eventually discharge at the coast. This is
because ground water bodies near the coast are usually of small volume and thickness. Alluvium also has disadvantageous characteristics for sub-surface injection of waste water. Alluvium has limited distribution, quickly drains after rains and presents high danger of pollution to any underlying water bodies. Stream channels have also cut into Alluvium of low permeability, allowing discharge from the underlying confined ground water. Under such hydraulic conditions, wastes injected into the sub-surface will presumably be discharged as effluent flow in nearby stream channels which eventually drains into the ocean. Waste discharged into the stream channel will not infiltrate into the sub-surface.

HAWAIIAN AQUACULTURE IN PERSPECTIVE

OPPORTUNITIES AND CONSTRAINTS

On a worldwide basis, aquaculture continues to grow annually in economic importance, particularly in the third world. Most of the production requires significant amounts of land, feed, seedstock, quality water, and labor. Within the U.S., trout and catfish farming have grown into stable industries with the assistance of decades of public and private funding and development work. Outside of these two industries, U.S. researchers and farmers have demonstrated the technical possibility of producing many other species. Yet there is a long road between early production demonstration and eventual economic success for a new species of farm animal. It is costly, time consuming, and fairly risky process that continues to spark the imagination and entrepreneurial spirit of individuals as well as the creativity of aquatic research groups. Marine shrimp is currently drawing most popular attention and probably will continue to do so for a number of years. The production requirements, especially the need for warm water, make profitable farming (shrimp in particular) possible and challenging, yet difficult.

Hawaii is in an enviable environment for aquacultural development. The islands offer the best year-round growing temperatures in the U.S. They also have unsurpassed ocean water quality, a large group of careful and capable production technicians, and a unique local seafood market. Directly marketing fresh product to ethnic groups sophisticated in seafood demand can yield high revenues to aquafarmers.
On the other hand, there are constraints to the development of commercial aquaculture in Hawaii. High land costs, competing interests for coastal resources, and permitting obstacles make farm site acquisition difficult and expensive. Farm operation costs are also above those on the mainland. Most feedstuffs are imported at significant expense, and labor costs are high. Because there is little room to cut costs, financial viability will come basically through intensification of production. Despite all constraints, there continue to be individuals working on the cutting edge of a new industry.

BASIC CRITERIA FOR SUCCESSFUL MARICULTURE IN HAWAII

The following criteria are based on the historical failure/success rate of aquaculture in the state and the island’s economic environment. Mariculture holds potential to contribute to diversification of the state’s economic base. Failure to adhere to these criteria have led to several farm closures.

1. Base economic projections on existing technology, not overly optimistic levels of production.

2. Work with fairly intensive systems (high yields per unit area).

3. Produce high market value products (like prawn and shrimp).

4. Locate project in areas requiring least development costs possible.

5. Base site selection decisions on highly favorable ecological factors for productivity.

6. Avoid management top-heavy organization, wasteful operation and research costs.
PROJECT ECONOMICS

For the purpose of putting potential mariculture use of the subject land in economic perspective the following basic assumptions and costs are provided. Detailed analysis is far beyond the scope of this report. Shrimp culture would almost certainly be the species of choice for a brackishwater system on the given site. Fairly intensive levels of production would be necessary on a project of 10 acres. Only the capital costs and operating expenses of major importance are outlined. Figures are provided to be only realistic estimates of actual costs. No attempt is made to determine cost of obtaining permits or development of water supply and discharge system. The feasibility of these systems is questionable and cost determination would be a major study in itself.

CAPITAL COST OUTLINE

Pond construction (11 acres) with access road, drainage, pipes @ $10,000/acre $110,000
Hatchery Building $30,000
Pond equipment $40,000
Hatchery equipment $15,000
Truck $7,000
Electrical system (for aeration system) $10,000
Subtotal $212,000

Water development costs not determined
Permitting costs unknown
Land costs not determined

Operations Costs (Annual, first full production year)

Seedstock $30,000
Feed $67,500
Utilities $15,000
Labor/management $81,000
Estimated depreciation $14,000

TOTAL * $207,500

* No accounting of loan interest payments
PRODUCTION

Three crops per pond per year of *Penaeus vannamei* (white shrimp), harvest size of 30-35 count. The expected yield per acre per crop is 3,000* pounds. Thus the annual yield from 10 acres of grow-out ponds would be 58,500 pounds of tails.

The break even price would be $3.55 per pound.

* These yields are theoretically possible. They are however, approximately twice the level that a start-up venture would probably achieve in its first operating years.
CONCLUSIONS

The greater part of the subject parcel is not suitable for aquaculture or mariculture based on topographic and soil criteria. Approximately 11 acres of productive water surface acres are possible within the parcel.

The greatest constraint for development of aquaculture on the 11 possible acres is the lack of evidence of a freshwater supply. Freshwater aquaculture is basically eliminated as a possible option if agricultural water rates must be paid. This is even a serious constraint to mariculture development on the parcel as significant quantities of freshwater are required to avoid hypersalinity due to evaporation and seepage.

Geologic maps indicate that it would be difficult to obtain brackish ground water in the quantities required for intensive mariculture. Direct pumping from Kaneohe Bay presents costly engineering considerations due to the extensive, shallow reef area along the site.

There are serious problems with the site in regards to water discharge from the farm. Mariculture effluents are very turbid and carry high nutrient levels. It is difficult to assume permit approval for discharge into Class AA waters of Kaneohe Bay. The discharge alternative is an injection well. Based on the geology of the project parcel, an injection well does not appear feasible.

Economically, the project suffers the inability to expand to a more efficient economy of scale. A breakeven price of $3.55 per pound was calculated at high production levels unlikely to be achieved by a start-up organization. Interest, water development and permit costs were not considered.

Intensive shrimp culture is a relatively new agricultural industry. The industry reputation has suffered from the failure of operations which were poorly situated. Many mariculture ventures have difficult times even when sited in optimal locations which do not carry high development costs.

In summary, the foregoing analysis indicates that, based on technological and economic considerations neither aquaculture nor mariculture are appropriate potential uses for land in the project area.
<table>
<thead>
<tr>
<th>Land Classification</th>
<th>Acreage for mariculture</th>
<th>Steep acreage (5 % slope or greater)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preservation</td>
<td>0</td>
<td>117.0</td>
</tr>
<tr>
<td>Proposed Existing Agriculture</td>
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</tr>
<tr>
<td>Proposed L.D. APT.</td>
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</tr>
<tr>
<td>Proposed Commercial</td>
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<td>0</td>
</tr>
<tr>
<td>Proposed Industrial</td>
<td>0</td>
<td>1.0</td>
</tr>
<tr>
<td>Totals</td>
<td>30.0</td>
<td>189.0</td>
</tr>
<tr>
<td>Soil Class</td>
<td>Suitability</td>
<td>Reason</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>EmA</td>
<td>No</td>
<td>Coral limestone at 20 - 50 inches. Unacceptable water loss from pond.</td>
</tr>
<tr>
<td>Mt</td>
<td>No</td>
<td>Loamy sand at 16 inches. High permeability.</td>
</tr>
<tr>
<td>KtC</td>
<td>No</td>
<td>High shrink-swell, unworkability. Excessive dike cracking upon pond</td>
</tr>
<tr>
<td>AeE</td>
<td>No</td>
<td>drain.</td>
</tr>
<tr>
<td>AeF</td>
<td>No</td>
<td>Slope, strongly acid at 10 inches.</td>
</tr>
<tr>
<td>LaC</td>
<td>Yes</td>
<td>Entire area in 40-70 % slope.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meets minimum criteria.</td>
</tr>
</tbody>
</table>
TABLE 3: Potential Mariculture Acreage.

<table>
<thead>
<tr>
<th>Soil Type of Land meeting Topographic requirements</th>
<th>Approximate number of Acres.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>KtC</td>
<td>1</td>
</tr>
<tr>
<td>Mt</td>
<td>2</td>
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<td>EmA</td>
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</tr>
<tr>
<td>LaC</td>
<td>17</td>
</tr>
<tr>
<td>TOTAL</td>
<td>30</td>
</tr>
</tbody>
</table>

* From Exhibits 3 and 6

Total acreage meeting basic mariculture requirements is 17

34 per cent of land area is required for roads, land, levees, water supply and drainage.

Total productive acreage available is 11

Approximate ratio of nursing ponds to production ponds is 1:10

Approximate total mariculture potential:

1 acre nursing ponds (for rearing post-larval animals to juvenile stocking size).

10 acres of production ponds

Nursery pond size: 0.25 acre. Production pond size: 1.0 acre.

Total pond units:

4 nursery ponds @ 0.25 acre. 10 production ponds @ 1.0 acre.
EXHIBIT 1

ASSESSMENT OF LANDS FOR AQUACULTURE

Produced by
Hawaii Aquaculture Planning Program
Center for Science Policy and Technology Assessment
Department of Planning and Economic Development
State of Hawaii 1978

OAHU

LEGEND

Topographic Features
- Average Annual Rainfall in Inches
- Permanent Stream
- Reservoir or Impoundment
- Hydrographic Boundary
- Elevation Contours (100 ft)
- Major Elevation Center
- Major Highway
- Beach
- Groundwater Boundary
- Groundwater Flow Direction
- Groundwater Pumped or Recharged
- Groundwater Perched on Bed or Other

Aquaculture Land Use
- Primary - Lands 6 10% Slope having Clay, Iron, Clay Loam Soil Types
- Secondary - All Other Lands 6 10% Slope

Location of subject parcel
Second class
Aquaculture land
LEGEND:

PRIME AGRICULTURAL LAND - Land which has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed according to modern farming methods.

UNIQUE AGRICULTURAL LAND - Land that has the special combination of soil quality, location, growing season, moisture supply, and is used to produce sustained high quality and or high yields of a specific crop when treated and managed according to modern farming methods.

OTHER IMPORTANT AGRICULTURAL LAND - Land other than Prime or Unique Agricultural Land that is also of statewide or local importance for agricultural use.

EXISTING URBAN DEVELOPMENT - Land which has been developed for urban type use.

U.S. GOVERNMENT - Land which is currently under the jurisdiction of the U.S. Government.

## Table II.—Chemical analyses of water-supply sources in windward Oahu

(Constituents in parts per million. Analytical data by Hawaii State Dept. of Health except as noted)

<table>
<thead>
<tr>
<th>Source</th>
<th>Date</th>
<th>Silica (SiO₂)</th>
<th>Alumina (Al₂O₃)</th>
<th>Iron (Fe₂O₃)</th>
<th>Magnesium (MgO)</th>
<th>Calcium (CaO)</th>
<th>Sodium (Na₂O)</th>
<th>Bicarbonate (HCO₃⁻)</th>
<th>Chloride (Cl⁻)</th>
<th>Fluoride (F⁻)</th>
<th>Total hardness (parts per million as CaCO₃)</th>
<th>Hardness of water</th>
<th>Alkalinity (as CaCO₃)</th>
<th>pH</th>
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<td>20.0</td>
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<td>0.0</td>
<td>0.8</td>
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<td>0.5</td>
<td>10.7</td>
<td>0.3</td>
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<td>0.6</td>
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<td>0.0</td>
<td>0.8</td>
<td>0.7</td>
<td>0.5</td>
<td>10.7</td>
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<td>0.8</td>
<td>0.7</td>
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<tr>
<td></td>
<td>Nov. 1957</td>
<td>31.9</td>
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<td>0.8</td>
<td>0.7</td>
<td>0.5</td>
<td>10.7</td>
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<tr>
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<td>0.5</td>
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<td>0.7</td>
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<td>10.7</td>
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<td>10.7</td>
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<td>0.8</td>
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<td>10.7</td>
<td>0.3</td>
<td>40.0</td>
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<td>Nov. 1961</td>
<td>26.7</td>
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<td>0.8</td>
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<td>0.5</td>
<td>10.7</td>
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<td>40.0</td>
<td>16.0</td>
<td>0.6</td>
<td>7.9</td>
</tr>
</tbody>
</table>

**Note:** All data represent averages of two analyses per sample.
APPENDIX E

SUPPLEMENTAL EIS PREPARATION NOTICE
PREPARATION NOTICE  
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT  
FOR  
HEEIA KEA VALLEY

APPROVING AUTHORITY : City and County of Honolulu  
City Council  
FOR PROPOSED ACTION

EIS ACCEPTING AGENCIES : City and County of Honolulu  
Department of Land Utilization and  
Department of General Planning

APPLICANT : Malama-Gentry Joint Venture

EIS PREPARATION : Gray, Hong & Associates, Inc.

PROJECT LOCATION : Heeia Kea mauka of Kamehameha Highway near the Heeia  
Kea Small Boat Harbor, Heeia, Koolaupoko District,  
Island of Oahu, State of Hawaii.

TAX MAP KEYS :  
4-6-06: 1, 2, 4, 7 through 16 and 22 through 51  
4-6-16: 32

REQUEST : Amendment to the Koolaupoko Development Plan (DP)  
Land Use Map

I. DESCRIPTION OF MODIFICATIONS TO THE PROPOSED ACTION

An Environmental Impact Statement for Heeia Kea Subdivision was accepted  
by the Department of Land Utilization in 1983. The Environmental Impact  
Statement was prepared in conjunction with a Special Management Permit  
Application. The document was also prepared pursuant to Chapter 343, Hawaii  
Revised Statutes, under the premise that the document could be utilized in  
conjunction with future governmental approvals.

A Development Plan (DP) Land Use Map amendment has been submitted to  
the Department of General Planning. The proposed and existing Development Plan  
Land Use Maps are shown on Figures 1 and 2. The requested changes to the map  
are identified below:
<table>
<thead>
<tr>
<th>Existing Designation</th>
<th>Proposed Designation</th>
<th>Acres</th>
<th>Proposed Acres</th>
<th>Acres to be Amended</th>
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<tbody>
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</tr>
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<td><strong>TOTALS</strong></td>
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<td></td>
</tr>
</tbody>
</table>

The following table summarizes land use which will exist in Heeia Kea Valley should the proposed amendment be adopted as compared to the Land Use identified in the previous action.

**TABLE 1**

COMPARISON OF LAND USE

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Acres</th>
<th>Proposed Acres</th>
<th>Proposed Units</th>
<th>Acres</th>
<th>Proposed Acres</th>
<th>Proposed Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Residential</td>
<td>47.8</td>
<td></td>
<td>310</td>
<td>82.2</td>
<td>389</td>
<td></td>
</tr>
<tr>
<td>Existing Residential</td>
<td>8.0</td>
<td></td>
<td></td>
<td>14.3</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Low Density Apt.</td>
<td>2.5</td>
<td></td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park Site</td>
<td>5.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>68.5</td>
<td></td>
<td>360</td>
<td>102</td>
<td>418</td>
<td></td>
</tr>
<tr>
<td>Agricultural</td>
<td>33.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preservation</td>
<td>117</td>
<td></td>
<td></td>
<td>116.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>219.0</td>
<td></td>
<td>360</td>
<td>218.1</td>
<td>418</td>
<td></td>
</tr>
</tbody>
</table>
The developed areas of the proposed action includes 68.5 acres as compared to 102 acres which was proposed under the previous action. The total number of residential units currently under consideration is 360 as compared to 418 units of the previous action.

Technical characteristics of the proposed development scheme include grading, roadway improvements, drainage improvements, water system improvements, sanitary/sewer system improvements, electrical and telephone improvements and landscaping. The technical description of all on-site improvements are identical and have similar or reduced magnitude to that described in the 1983 Environmental Impact Statement. However, a Supplemental Environmental Impact Statement will discuss off-site sewer improvements and in particular, an off-site sewage pump station which will be oversized to accommodate demands in excess of that required specifically to serve the Heeia Koa project area. It is proposed to install a pump station in the vicinity of the Long Bridge which will serve the Heeia Koa area as well as replace the existing Alii Bluffs sewage pump station.

II. SUMMARY OF IMPACTS AND MITIGATION MEASURES

The impacts associated with the proposed action include all impacts discussed in the 1983 Environmental Impact Statement. The differences in impacts between the proposed action and that which was previously proposed are as follows:

1. Traffic

The traffic patterns within Windward Oahu as well as on trans-Koolau corridor require review based on increased population and based on the possibility of improvements to the trans-Koolau system other than the H-3 freeway system.
2. Social Impacts

The general public and community perception of the proposed action may differ from the previously proposed action. Therefore, it is proposed to reanalyze the social implications of the proposed project. The analysis will take into consideration the impact of the project on various segments of the community.

III. ALTERNATIVES

The previously accepted Environmental Impact Statement identified the alternatives of no action, agricultural development, reduced density development and alternative type housing. Alternative type housing was described as cluster-type housing as compared to conventional residential lots. The discussion of all alternatives presented in the previously accepted Environmental Impact Statement are still applicable. A Supplemental Environmental Impact Statement will include discussion of new alternatives including mariculture as well as Country Zoning as defined by the proposed Land Use Ordinance.

IV. DETERMINATION AND RATIONALE

A Supplemental Environmental Impact Statement is warranted when any of the following conditions prevail:

1. The scope of an action has been substantially increased.
2. The intensity of the environmental impacts will be increased.
3. Mitigating measures originally planned are not to be implemented.
4. New circumstances or evidence has brought to light different or increased impacts.

The development proposal currently under consideration has, for all practical purposes, the same or reduced scope as that discussed in the
previously accepted Environmental Impact Statement. However, the proposed project incorporates low density apartment areas and commercial space which were not a part of the previously proposed action and for that reason additional review of the site layout will be provided in a Supplemental Environmental Impact Statement.

The impacts of the originally proposed action are applicable to the action currently under consideration. However, the Supplemental Impact Statement will address traffic impacts and social impacts since the intensity of these impacts may differ from that original action.

The mitigation measures planned as a part of the original action are also applicable for the currently proposed action. However, mitigation measures with respect to traffic and in particular regional traffic, will be discussed in the Supplement Statement due to the fact that other trans-Koolau highway improvements may provide new mitigation measures.

V. AGENCIES AND ORGANIZATIONS INVOLVED IN THE CONSULTATION PERIOD

The following list identifies agencies and organizations which will be notified during the consultation period. The list includes all parties involved in the consultation and review process for the previous action. The following listing is not intended to limit consultation and will be expanded upon notification or request.

The Draft Supplemental Environmental Impact Statement will focus on the issues stated in this preparation notice as well as on issues identified during the consultation period which meet the criteria as identified in Section IV for inclusion in a Supplemental Environmental Impact Statement.
AGENCIES AND ORGANIZATIONS INVOLVED IN THE CONSULTATION PERIOD

City

Building Department
Honolulu Fire Department
Department of General Planning
Department of Parks and Recreation
Board of Water Supply
Police Department
Department of Public Works
Department of Transportation Services
Department of Land Utilization
Department of Housing and Community Development
Department of Health

State

Department of Education
Department of Transportation
Department of Planning and Economic Development
Department of Land and Natural Resources
Department of Health
Office of Environmental Quality Control
Department of Agriculture
Department of Hawaiian Home Lands
Department of Social Services and Housing, Hawaii Housing Authority
State of Hawaii, State Main Library
State of Hawaii, Kaneohe Regional Library
Environmental Center, University of Hawaii
Water Resources Research Center, University of Hawaii

Federal

Department of the Army, Corps of Engineers
U. S. Department of the Interior, Fish and Wildlife Service
U. S. Department of Agriculture, Soil Conservation Service
U. S. Department of Defense, U. S. Marine Corps

Other

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