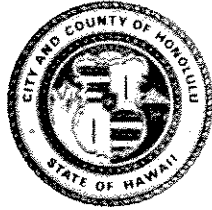


DEPARTMENT OF GENERAL PLANNING  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813



FRANK F. FASI  
MAYOR

DONALD A. CLEGG  
CHIEF PLANNING OFFICER

GENE CONNELL  
DEPUTY CHIEF PLANNING OFFICER

WM/DGP 89/CO-1

June 13, 1989

Mr. W. Y. Thompson, Consultant  
98-1051 Kahapili Street  
Aiea, Hawaii 96701

Dear Mr. Thompson:

Final Environmental Impact Statement (FEIS)  
Kipapa Industrial Park  
Tax Map Key 9-4-05: 52

We have determined that the above is an acceptable Final 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 required by the Department of General Planning.

There are a number of concerns that must be addressed prior to the subsequent zoning process. These concerns are included in the attached Acceptance Report.

If there are any questions, please contact Bill Medeiros at 527-6089.

Sincerely,

A handwritten signature in cursive script, appearing to read "E. B. Connell".

E. B. CONNELL  
Acting Chief Planning Officer

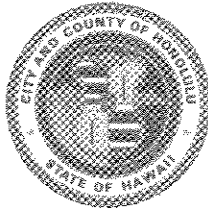
EBC:js

Attachments

cc: /OEQC

DEPARTMENT OF GENERAL PLANNING  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813



FRANK F. FASI  
MAYOR

DONALD A. CLEGG  
CHIEF PLANNING OFFICER

GENE CONNELL  
DEPUTY CHIEF PLANNING OFFICER

WM/DGP 89/CO-1

RECEIVED

June 13, 1989

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OFC. OF ENVIRONMENTAL  
QUALITY CONTROL

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

Dear Dr. Miura:

Final Environmental Impact Statement (FEIS)  
Kipapa Industrial Park  
Tax Map Key 9-4-05: 52

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

Unresolved issues to be addressed prior to subsequent rezoning include:

1. While there is an existing well on the property, the developer is required to secure a State Water Use permit.
2. The developer intends to hook up to the City sewerage system. Therefore, appropriate approvals by the City Department of Public Works are required. In addition, there must be sufficient excess capacity at the Honouliuli Wastewater Treatment Plant in order to handle the additional sewage generated by the project.
3. A State Land Use District Boundary Amendment is required in order to reclassify the property from Agriculture to Urban.
4. There are still unresolved issues related to the adequacy of the mitigative measures proposed by the developer for the intersection of the project's access road and Kamehameha Highway. Some agencies, most notably the Honolulu Police Department, have doubts

Honorable Marvin T. Miura, Director  
Office of Environmental Quality Control  
Page 2  
June 13, 1989

that the right turn only restriction, the restriping of the intersection, and even the provision of traffic signals at the intersection will satisfactorily reduce the traffic hazards. Acceleration and deceleration lanes have been suggested, but this would require additional road right-of-way. The proposed widening and realignment of Kamehameha Highway will directly impact the project. Until such plans for the improvements to the highway are made available, it will be difficult to adequately assess the potential impacts. Proposed traffic improvements should be reviewed and approved by the Department of Transportation Services and the State Department of Transportation.

Please find attached a copy of the acceptance report. Should there be any questions, please contact Bill Medeiros at 527-6089.

Sincerely,



E. B. CONNELL  
Acting Chief Planning Officer

EBC:js

Attachments

cc: Mr. W. Y. Thompson  
Yuichi Ige, Dairy Co.

ACCEPTANCE REPORT: CHAPTER 343, HRS  
ENVIRONMENTAL IMPACT STATEMENT (EIS)  
KIPAPA INDUSTRIAL PARK  
KIPAPA GULCH, WAIPIO, OAHU, HAWAII  
TAX MAP KEY: 9-4-04: 9

A. Background

Dairy-Co., Inc. is proposing to develop a 21-lot light industrial park within Kipapa Gulch near Roosevelt Bridge in Waipio, Oahu. The applicant has requested an amendment to the Development Plan Land Use Map for Central Oahu in order to redesignate a 50.152-acre parcel of land from Agriculture to Industrial and Residential. The proposed light industrial park will be located on 39.584 acres within Kipapa Gulch. The residential portion of the DP amendment involves 10.568 acres of land located outside of the gulch atop the southeast escarpment. At present there are no plans to develop the proposed residential area.

The proposed industrial area has historically been in agricultural production, first in sugarcane and pineapple cultivation and later as a dairy. Dairy operations ceased in 1975. The property was then converted into an agricultural condominium through a horizontal property regime. At present there are only two agricultural tenants, one selling and servicing agricultural equipment and the other processing firewood. Both tenants are operating under Conditional Use Permits. The remainder of the site is vacant.

The residential area consists of 13 dwelling units located in an old quarry. The site was formerly used as dairy employees' housing and is now being used as low cost rental units. Twelve of the houses are occupied. The applicant states that the change to Residential is needed to allow much needed repairs and renovations to the structures which are not permitted under current regulations. No expansion of the number of residential units has as yet been proposed by the applicant.

The proposed light industrial park is planned for 21 one-acre lots. Due to the steepness of the gulch walls, roughly 50 percent of each of the lots will be usable. Lots may be combined to form larger lots or reduced into smaller lots to suit the needs of prospective purchasers. The Kipapa project does not intend to compete directly with other industrial parks in Central Oahu (such as Gentry Business Park or Mililani Hi-Tech Park) but rather will be an alternative site for those businesses that cannot be accommodated in the other industrial areas. The project's relative isolation is

intended to be a selling point. The applicant estimates that the development could generate approximately 333 jobs, although the actual number of jobs would depend on the number and types of firms which decide to locate in the industrial park. In addition, this figure may not represent all "new" jobs, as there is the possibility of the present tenants seeking suitable space in the industrial park.

#### Topography and Soils

The approximately 39.6-acre site proposed for industrial use is located within Kipapa Gulch. Approximately 20 acres involve relatively flat alluvial land on the gulch floor. The remainder involves gulch walls with grades between 60 and 70 percent.

Kipapa Stream runs along the east gulch wall. The stream depth and width varies. A representative section involves a stream width of between 60 and 70 feet and a depth of approximately 19 feet. The stream is presently unlined and bordered with heavy vegetation.

The residential portion of the proposal consists of approximately 10.6 acres of land located outside the gulch near the top of the southeast escarpment. The site is relatively flat although there are some boulders remaining from the former quarrying operations.

The alluvial soils of the gulch floor are of the Haleiwa silty clay series. These lands are designated Prime Agricultural Land in the State ALISH plan with a productivity rating of "B" based on the Land Study Bureau Detailed Land Classification report. The gulch walls and the old quarry site involves soils of the Helemano Silty Clay series. These lands are unclassified in the State ALISH plan and have a productivity rating of "E" in the Land Study Bureau report.

#### Water

The project will be serviced by a private onsite water system. There is an existing well on the property with a pump capacity of 240 gallons per minute. During the height of the dairy and poultry operations water consumption averaged about 110,000 gallons per day. The developer has stated that water consumption of the proposed industrial park is not expected to exceed that figure.

The site is located in the Pearl Harbor Groundwater Control Area. Withdrawal of water is, therefore, strictly controlled by the State Department of Land and Natural Resources.

Water rights to Kipapa Stream are reserved and are not available to the project.

### Wastewater

The project will generate somewhat less than 0.1 million gallons per day (mgd) of wastewater. Underground disposal is not permitted as the project is located in the "no pass" zone. Therefore, the developer intends to install a pump station and sewer main in order to pump project wastewater out of Kipapa Gulch to an existing public sewer main near Gentry-Waipio. The wastewater would then be pumped to the Honouliuli Sewage Treatment Plant for treatment and disposal. While expansion of the treatment plant has been programmed, allotment of the extra capacity will be on a first-come, first-served basis.

### Drainage

The developer is proposing channel improvements to Kipapa Stream in order to prevent flood inundation of the project site. These improvements would include a concrete lining with a wider stream cross section. The new channel would be constructed in accordance with all applicable standards.

Onsite runoff is expected to be directed into Kipapa Stream.

### Access and Traffic

Access to the proposed industrial site is currently via a substandard road which intersects Kamehameha Highway near the western end of Roosevelt Bridge. The developer plans to upgrade the access road and maintain this intersection as the only access point to the proposed project.

Kamehameha Highway and Roosevelt Bridge fronting the subject property consists of two lanes of opposing traffic with minimal shoulder area. The bridge and highway are constructed along a long, sweeping bend. The bridge is the low point of this section with the highway sloping upward in each direction out of the gulch. The narrow shoulders, curve and slope of the highway and the location of the access road, adjacent to a "cut" in the gulch wall, in combination, contributes to reduced sight distances and hazardous conditions for ingressing and egressing the access road. This is especially true for left turn movements into and out of the highway's southbound lane.

The developer proposes to restrict left turn movements from and to the site. This, in effect, would make access to the site available to northbound traffic only. There would be no direct access to or from the southbound land of Kamehameha Highway. Southbound traffic would be required to take a circuitous route in order to access the site via the northbound lane.

The developer is proposing to restripe the intersection in order to provide additional sight distance. However, it is not clear how much lane or shoulder widths would have to be reduced by restriping in order to significantly improve sight distances. The developer also proposes to monitor traffic at the intersection and provide traffic signalization if it is warranted.

The State Department of Transportation has long-term plans to widen Kamehameha Highway fronting the property and relocate Roosevelt Bridge. Conceptual plans indicate that the new bridge would be built at a higher elevation and the new alignment located somewhat northeast of the present alignment. While this will improve traffic conditions on Kamehameha Highway, the realignment may impact portions of the proposed industrial subdivision and will require reconstruction of a portion of the access road in order to maintain the project's connection with Kamehameha Highway.

The project, once developed, will increase traffic along Kamehameha Highway. The developer estimates 100 vehicle trips per day being generated by current uses on the property. This is expected to increase to 1,321 vehicle trips with the development of the industrial park. This represents an increase of approximately 6 percent over total traffic volume along Kamehameha Highway (20,790 vehicle trips per day in 1987).

As noted earlier, a right turn only restriction on vehicles entering and leaving the site would result in southbound traffic taking a more circuitous route. This could result in certain secondary traffic impacts caused by southbound traffic having to "backtrack" in order to enter or exit the site via the northbound land of Kamehameha Highway.

#### Historic and Archaeological Resources

Kipapa Gulch and the surrounding area is recorded as a site of battles between warriors from the Island of Hawaii and the forces of the reigning chief of Oahu. In addition, Kipapa Gulch was also the site of two heiaus. The heiaus apparently were destroyed when the lands were cleared for cultivation.

A surface reconnaissance of the site was conducted on April 4, 1989. No archaeological surface features or exposures of subsurface deposition were observed. However, there is the possibility of subsurface deposits in the former flood plain area. Lava tubes and overhangs in the face of the gulch walls may also contain archaeological remains.

The developer is proposing the systematic trenching of selected areas prior to construction in order to verify the presence of subsurface deposits. A search of the gulch walls will also be conducted. Should any remains be found, the State Historic Preservation Office will be notified and appropriate measures taken.

## B. Procedures

An EIS Preparation Notice for the proposed project (then proposed for the 1988 Annual Amendment Review) appeared in the November 8, 1987 issue of the Office of Environmental Quality Control (OEQC) Bulletin. Copies of this notice were distributed to interested Federal, State, and City and County agencies as well as community interest groups.

As this request was deferred from the 1988 Annual Amendment Review to the 1989 Annual Amendment Review, the processing of the EIS was continued to 1989. Thirteen parties submitted written comments in response to the Preparation Notice. The applicant responded to these comments in writing.

Notice of the Draft EIS was published in the January 23, 1989 issue of the OEQC Bulletin. The deadline for review was set for March 9, 1989.

Thirty parties responded to the request for comments on the Draft EIS. The applicant responded to all substantive comments received during the public review period.

## C. Content

The Final EIS for the proposed Kipapa Industrial Park conforms to the content requirements specified in Section 11-200-17 and 11-200-18 of the EIS rules.

## D. Responses

The applicant provided adequate point-by-point responses to all comments received within the 45-day review period established for the Draft EIS.

## E. Unresolved Issues

The following unresolved issues require resolution prior to the acceptance of an application for rezoning:

1. While there is an existing private well on the property, the developer is required to secure a State Water Use permit.
2. The developer intends to hook up to the City sewer system. Therefore, appropriate approvals by the City Department of Public Works are required. In addition, there must be sufficient excess capacity at the Honouliuli Wastewater Treatment Plant in order to handle the additional sewage generated by the project.
3. A State Land Use District Boundary Amendment is required in order to reclassify the project site from Agriculture to Urban.



4. There are still unresolved issues related to the adequacy of the mitigative measures proposed by the developer for the intersection of the project's access road and Kamehameha Highway. Some agencies, most notably the Honolulu Police Department, have doubts that the right turn only restriction, restriping of the intersection, and even the provision of traffic signals at the intersection will satisfactorily reduce the traffic hazards. Acceleration and deceleration lanes have been suggested but this would require additional road right-of-way. The proposed widening and realignment of Kamehameha Highway will directly impact the project. Until such plans for the improvements to the highway are made available, it will be difficult to adequately assess the potential impacts. Proposed traffic improvements should be reviewed and approved by the Department of Transportation Services and the State Department of Transportation.

F. Determination

The Final 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 required by the Department of General Planning.



E. B. CONNELL  
Acting Chief Planning Officer

OFFICE LIBRARY

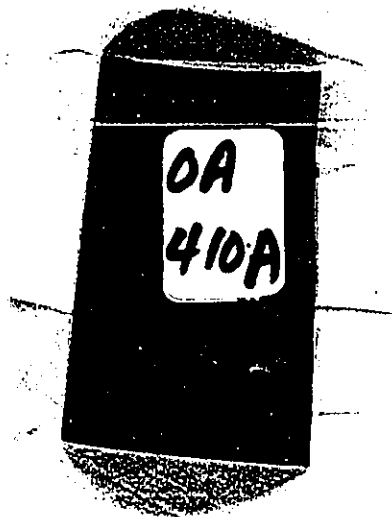
**"FINAL"**

**ENVIROMENTAL  
IMPACT STATEMENT**

**KIPAPA**  
*Industrial Park*

**CENTRAL OAHU**

**TMK: 9 - 4 - 05: 52**



**DAIRY CO., INC.**


FINAL ENVIRONMENTAL IMPACT STATEMENT  
FOR THE  
PROPOSED KIPAPA INDUSTRIAL PARK

KIPAPA GULCH, WAIPIO, EWA DISTRICT, OAHU

TMK: 9-4-05: 52

Accepting Authority: \_\_\_\_\_  
Department of General Planning  
City & County of Honolulu

Prepared for:  
DAIRY-CO., INC.  
1638 Kam IV Road  
Honolulu, HI 96819

  
YUICHI IGE  
President, Dairy Co. Inc.

April 1989

Coordinated by:  
W. Y. Thompson, Consultant  
98-1051 Kahapili Street \* Aiea, HI \* 96701  
Phone: 488-0388

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- APPENDIX A: Market Analysis
- APPENDIX B: Dairy Operations Alternative Study
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## SUMMARY

The proposed project is the development of a light industrial park at Kipapa Gulch, Waipio, Ewa, Oahu. The site is owned by Dairy-Co., Inc. The lot size is 50.152 acres of which 39.584 acres is proposed for industrial development while the remaining 10.568 acres will remain as a single family low rental housing site.

The area is in the State Land Use Agricultural District and currently zoned AG-1 by the City & County. A Development Plan amendment is being sought. This will be followed by a State Land Use Boundary Amendment.

The site was formerly in sugar cane and pineapple cultivation. It was sold to dairy interests 35 years ago. Part of the dairy site was developed as a poultry farm and subsequently sold to others. Dairy operations ceased in 1975. The present status of the site is a horizontal property regime (agricultural condominium lots) called "Kipapa Acres." Only a small portion of the proposed industrial park site is presently in use.

Major impacts anticipated include: traffic on Kamehameha Highway; flooding of a portion of the site based on a 100-year storm; easements across property which will affect the development plan; water use permit from State Water Commission; wastewater disposal which necessitates a high lift and future limitation of Honouliuli WWTP processing capacity; odor from adjoining poultry farm; and potential fire hazard from dry vegetation and military fuel tanks.

Mitigating measures have been proposed which should eliminate or lessen the anticipated impacts. No rare or endangered plant or animal species have been found to inhabit this site. Since the area was in intensive cultivation for a long period of time, no surface or near-sub surface archaeological remains exist.

The project is estimated to cost in excess of \$5,000,000, and will require 4 to 5 years to develop. A market study shows the need for additional industrial space in the future and suggests a competitive selling price for the proposed industrial lots.

Unresolved issues involve the pending water use permit from the State Water Commission; availability of the Honouliuli WWTP capacity to handle the project wastewater effluent; the construction date for improvements to Kamehameha Highway; and the State Land Use Boundary Amendment reclassifying the site from the Agricultural to the Urban District.

SECTION 1  
DESCRIPTION OF PROPOSED PROJECT

1. LOCATION: The proposed project site is located in Kipapa Gulch, Waipio, Ewa District, Island of Oahu. The project site is identified as being Oahu Tax Map Key: 9-4-05: 52; and further described as being Lot 942-B, of Land Court Application No. 1000 of John Ii Estate, Ltd. The lot is 50.152 acres in size. Figure 1 shows the general location of the property, and Figure 2 is a portion of the tax map showing land ownership.

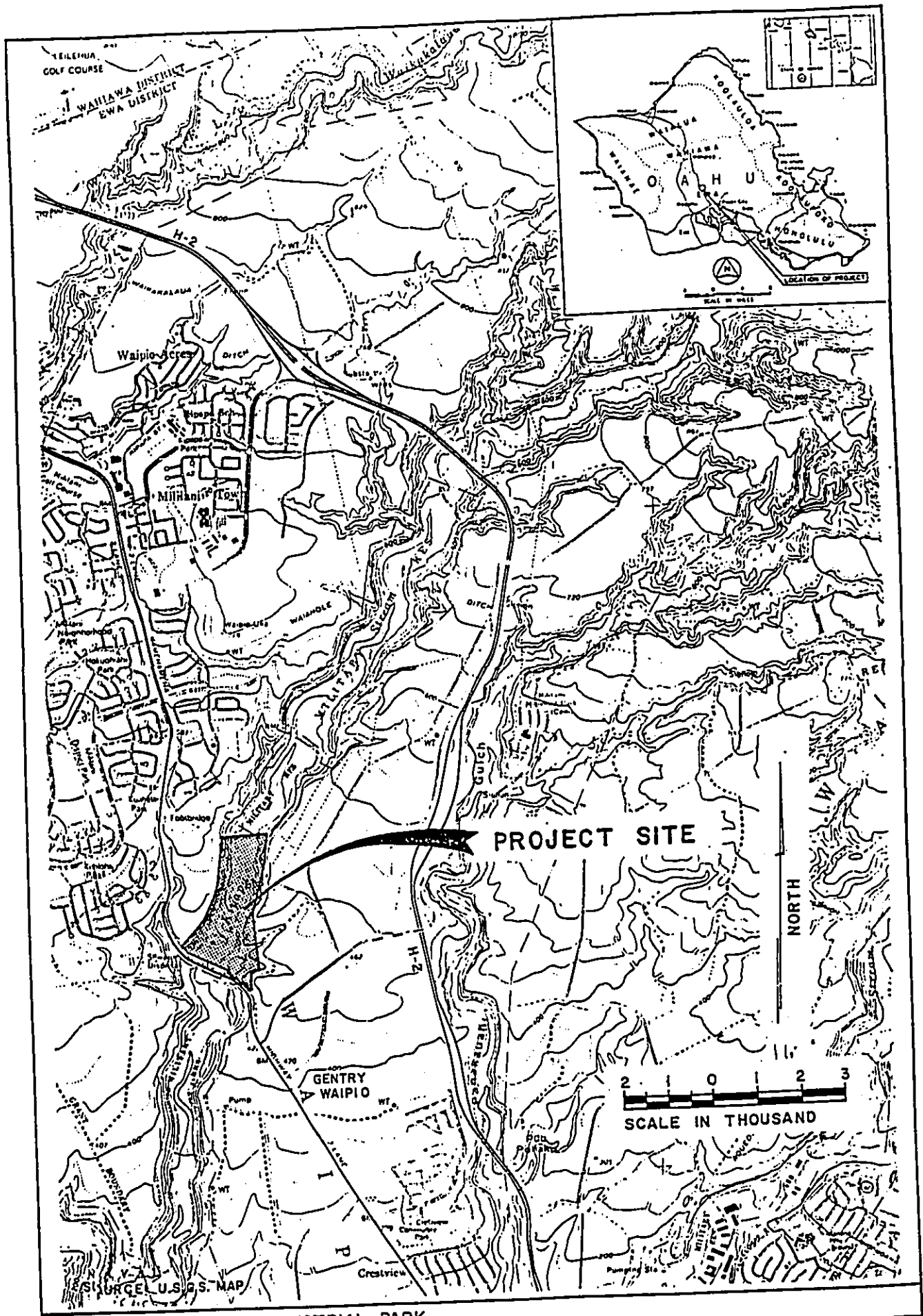
2. LAND OWNERSHIP: The project for the proposed light industrial park development is owned by Dairy-Co., Inc. The president of the firm is Mr. Yuichi Ige whose address is:

1638 Kam IV Road  
Honolulu, HI 96819.

There are also certain easements granting rights to others for use under, on and over the property. These are:

- a. A grant to Waiahole Water Company, Ltd., as set forth in that certain indenture dated May 21, 1913 and recorded in the Office of the Registrar of Conveyances in Book 392, at Page 276. (Affects premises and other property.)
- b. Easement "N", part of Portion 10, as shown on Maps 37 and 79 of Land Court Application No. 1000. (Affects premises and other property.)
- c. A grant in favor of Oahu Sugar Company, Ltd., Waiahole Water Company, Ltd., and United States of America, granting a perpetual easement to Oahu Sugar Company, Ltd., for an irrigation ditch known as "Kipapa Ditch" etc.; all right in and to free flowing water in Kipapa Gulch to Waiahole Water

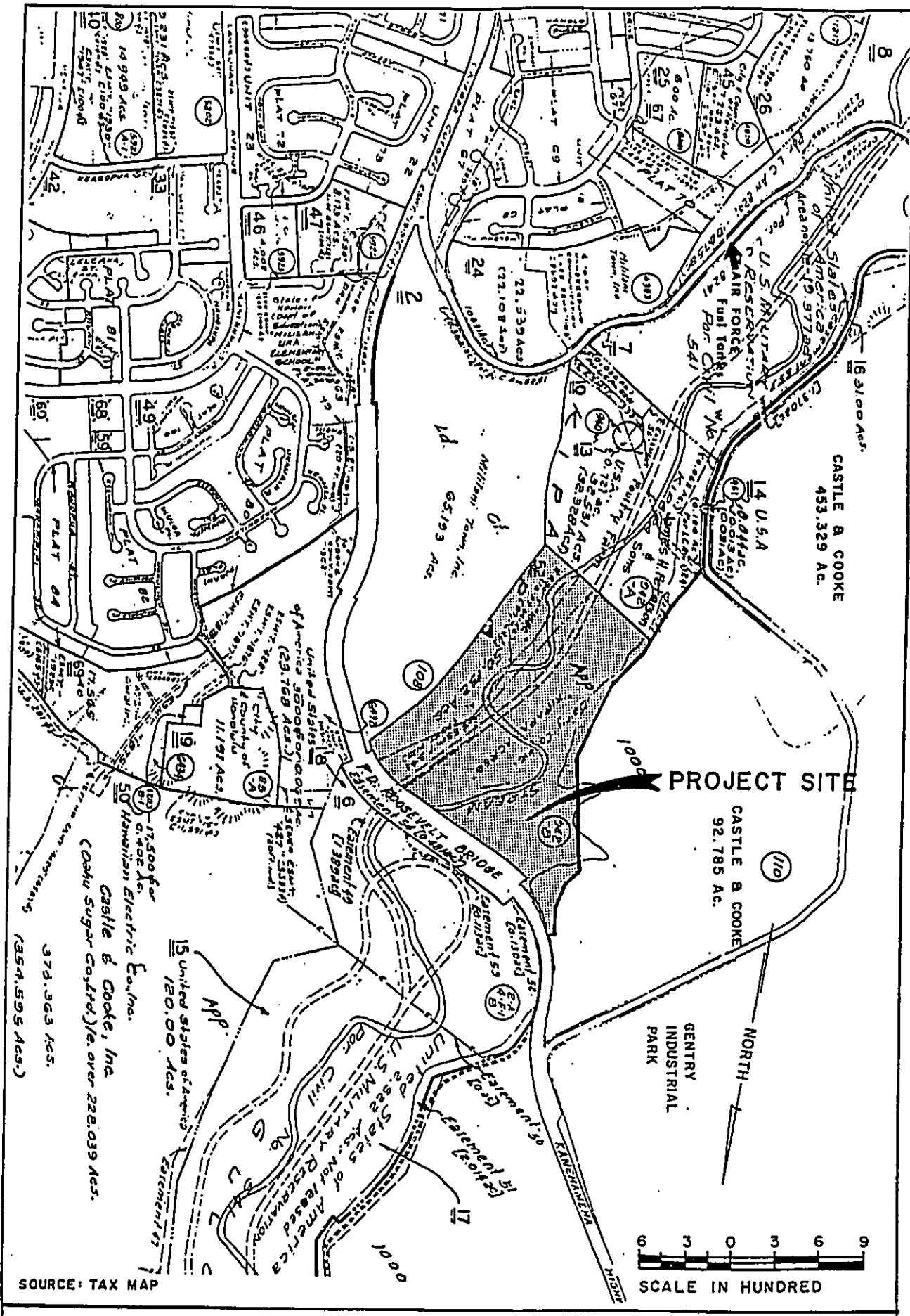




PROPOSED KIPAPA INDUSTRIAL PARK

LOCATION PLAN

FIG. 1



PROPOSED KIPAPA INDUSTRIAL PARK

OWNERSHIP MAP

FIG. 2

Company, Ltd., etc.; perpetual right to Hawaiian Pineapple Company, Ltd., and to the United States of America to certain free flowing water in Kipapa Gulch; said rights and easements along, over through, across and under Lot 942-B etc., dated August 26, 1953 and filed as Document No. 152030.

d. A grant of easement in favor of Hawaiian Electric Company, Inc., and Hawaiian Telephone Company, for utility purposes over and across Lot 942-B, dated November 8, 1957, filed as Document No. 208558. (Affects premises and other property.)

e. Designation of Easement 163 over Lot 942-B, as shown on Map 79, as set forth by Land Court Order No. 16484, filed August 20, 1958. (Affects premises and other prsoperty.)

f. A grant of easement in favor of United States of America, to install etc., fuel pipeline etc., over and across Easement 163, dated September 26, 1958 and filed as Document No. 223406. (Affects premises and other property.)

g. A grant of easement in favor or Hawaiian Electric Company, Inc., to construct etc., pole and wire lines etc., over and across Lot 942-B, dated April 9, 1962, filed as Document No. 289053, and as amended by Instrument filed as Document No. 331855; consent thereto being Document No. 331856.

h. Designation of Easement 341 over and across Lot 942-B, as shown on Map 201, as set forth by Land Court Order No. 23479 filed November 20, 1964. (Affects premises and other

property.)

i. A grant of easement in favor of United States of America, for installing, etc., communications, etc., over Easement 341 over Lot 942-B, dated November 16, 1964, and filed as Document No. 347714. (Affects premises and other property.)

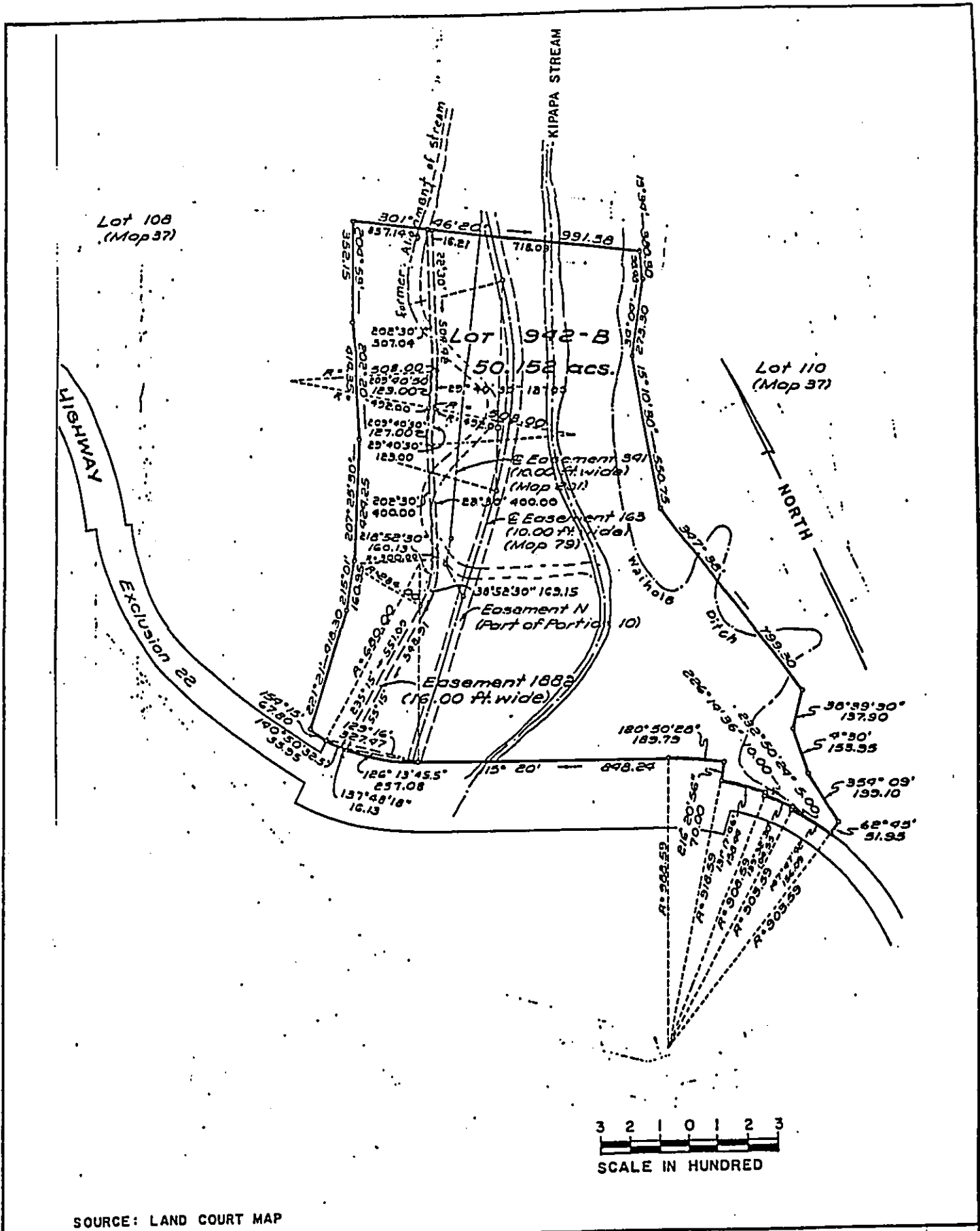
j. Access for Lot 942-A to Kamehameha Highway using Easement 163, 10 wide, as set forth in Land Court Order No. 43800.

(Figure 3 is a survey map showing easements on the property. The HECO easments are shown on Figure 5.)

3. **EXISTING USE:** The project site (39.584 acres) is currently a horizontal agricultural condominium registered with the State of Hawaii Real Estate Commission in March 1986. The remaining 10.568 acres remains a separate agricultural lot and is the location for the former dairy employees housing which is currently a low rental housing enterprise.

There is a agricultural equipment service firm on the premises, owned by Roy A. Joaquin, using 4.5 acres under a conditional use permit (Type 1: Sale and service of machinery used in agricultural production) granted by the City & County Department of Land Utilization on March 31, 1987. Only 2.77 acres are in use as the remainder is unuseable being the gulch walls and stream.

Another tenant on the land is a firewood processing firm owned by Vernon Blomgren. Logs harvested elsewhere is trucked in and cut into appropriate sizes for use in stoves. This activity to provide kiawe wood for restaurant use occupies and area of



SOURCE: LAND COURT MAP

PROPOSED KIPAPA INDUSTRIAL PARK

**SURVEY MAP.**

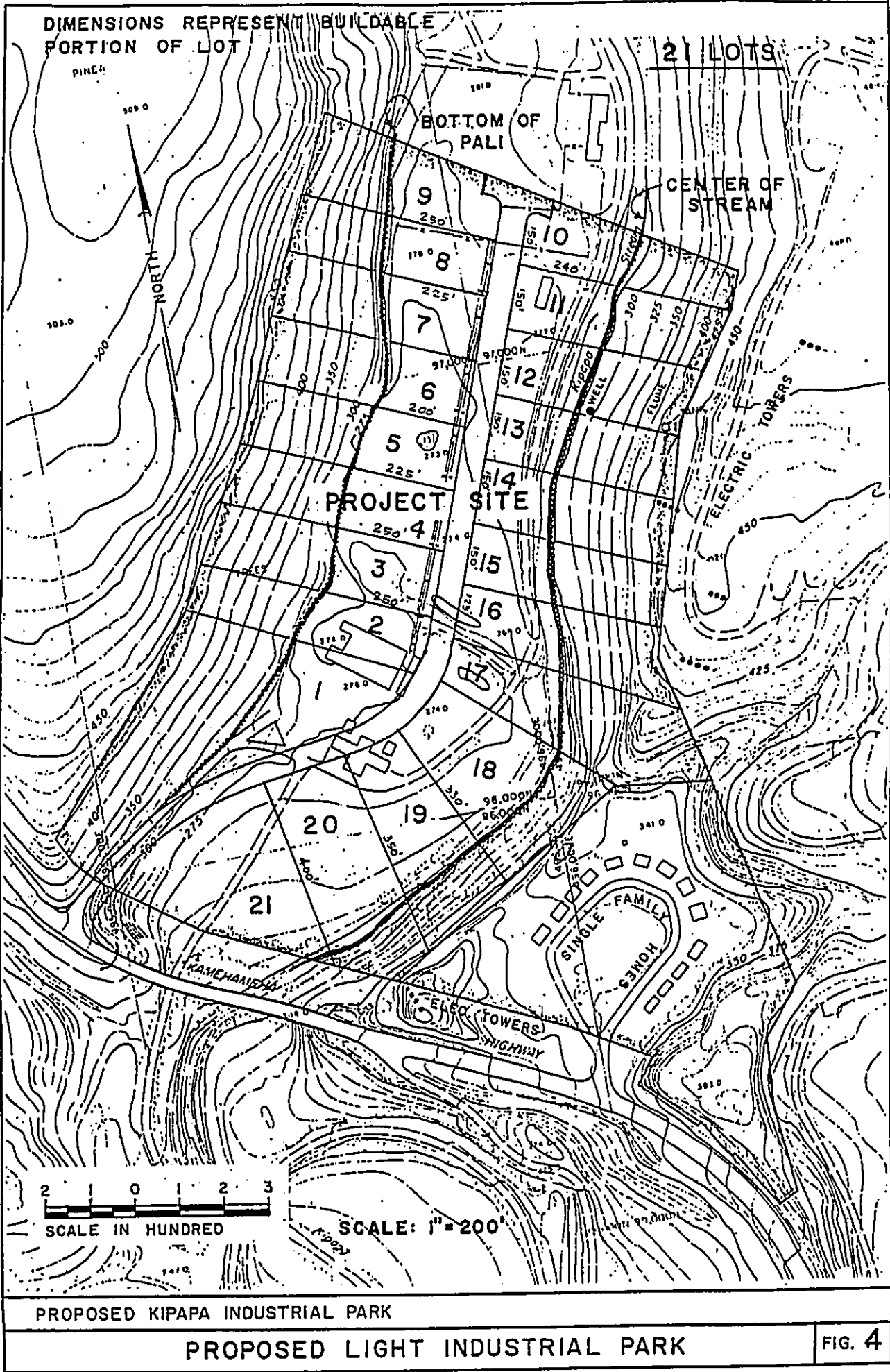
**FIG. 3**

5,400 sq. ft. (135 x 40 feet). This activity is also operated under a conditional use permit approved by the City & County Department of Land Utilization on November 15, 1988.

The remaining area (34.960 acres) of the proposed industrial park are vacant and not in use. As noted, the upper 10.568-acre tract is used for low rental housing. There are 12 houses rented to families; the 13th house is unoccupied as it is in poor condition.

4. STATEMENT OF OBJECTIVES: The applicant proposes to develop a light industrial park on approximately 39 acres of the 50.152-acre lot. As described in this report, portions of the lot are unsuitable for any sort of development due to the topography. The gulch walls make up approximately half of the 39.584-acre tract which is the site for the proposed industrial park. The developable area is estimated to be 20 acres, more or less. A layout of the proposed industrial park subdivision is shown in Figure 4.

The growth of Central Oahu indicates the need for additional industrial sites. The major industrial area for general use in this area is the Gentry-Waipio business park development which totals 120 acres. Additional commercial industrial acreage of 115 acres will be available upon approval of the 1395-acre Gentry-Waipio development by government agencies. There are 5 acres of commercial zoned lands in Mililani Town at present. The 256-acre Hawaii Technology Park at Mililani is geared to "high tech" firms. The proposed Kipapa Industrial Park will with its 20 acres will supplement the



industrial acreage of its large neighbors. It is not intended that the Kipapa project compete directly with the Gentry and Mililani commercial/industrial developments with their campus-like setting. The Kipapa project will be an alternative for those businesses that cannot be accommodated in the other industrial parks for one reason or another. The relative isolation of the Kipapa project will be a selling point. This isolation feature of the property made it a prime consideration for a film studio. In 1974, an option to purchase this site for a film studio was made as an alternative to the Kuliouou Valley site which was the first choice.

A market analysis by John Child & Company, Inc., shows the feasibility of the proposed project. This report is shown in Appendix A. As noted in the report, the Kipapa project is expected to provide the additional industrial lands required for the future and is not designed to compete head-on with its larger neighbors but to offer a choice to firms seeking to locate in Central Oahu.

The proposed industrial park will be developed according to the needs of the purchasers. A 21-lot subdivision of with lots averaging 1-acre is envisioned as the base plan. Lots of one-acre size (about half-acre useable) may be combined to form larger lots to suit the needs of the prospective purchasers. Similarly, the 1-acre lots may be reduced to less than 1/2-acre to meet market demands for smaller lots as pointed out in the market study prepared by John Child & Company, Inc.



## 5. GENERAL DESCRIPTION OF ACTION

TECHNICAL CHARACTERISTIC: The location of the project site in Kipapa Gulch entails considerable engineering study and design to dispose wastewater and to construct adequate water facilities to handle domestic and fire flows. Being in the Pearl Harbor Ground Water Control Area, permission from the State Commission on Water Resource Management for water allocation is required. Further, the heavy traffic density on the State Kamehameha Highway will necessitate an evaluation of the traffic entering and exiting the project site. Existing easements under, on and over the project area will have to be taken into consideration in designing the subdivision to avoid conflicts.

ECONOMIC CHARACTERISTIC: The project area is used by two firms presently. These two firms use only a small portion of the project area and employ two and three persons, respectively. The proposed light industrial project is expected to create jobs in an area with high residential population. Since major residential expansion developments are now in the permit process: the 1200-acre Mililani mauka development and the 1395-acre Gentry-Waiawa development, - increase in population for Central Oahu can be expected. An industrial park on the average employs 19.0 persons per developed acre; this could result in the proposed project generating 333 jobs, more or less. This should not be taken to mean that 333 new jobs will be created since some existing businesses are expected to relocate with their same employees. However, new firms or firms seeking expansion will create new jobs and such jobs may become available to residents

of Central Oahu.

According to records at the Tax Office, the present assessment of the 50.152-acre lot is valued at \$ 1,758,584.00; \$1,254,000 for the land and \$504,584 for the improvements on the property which includes the low rental cottages assessed at \$291,191. The completed project will increase the assessment of the land alone to over \$8 million dollars.

The tax paid on the property and improvements totalled \$15,827.27 for 1988.

A market feasibility study was made to assess the potential of the proposed industrial park. This report is shown in Appendix A. Salient points of this report indicate that the growing population will require additional industrial lands. The estimated sale price of the land, \$14 to \$16 per square foot, makes it competitive with other industrial areas. The nearby Gentry-Waipio industrial land prices range between \$20 to \$23 per square foot.

SOCIAL CHARACTERISTIC: The Central Oahu area, Crestview to Wahiawa, is a popular residential area as evidenced by the growth of Mililani Town and Gentry-Waipio. This area contains some of the prime agricultural lands of the State. As such its beginnings were agriculturally based to service the sugar and pineapple industries. The military presence is very prominent with the Army's Schofield Barracks and the Air Force's Wheeler Field occupying a large portion of Central Oahu.

With the diminishing returns on sugar and pineapple in recent years, agricultural lands have been turned into urban

communities with all its amenities: single family residences, rental apartments, townhouses, commercial and industrial centers and parks. A large segment of the new residents have turned this area into what may be called a "bedroom community" for Honolulu. While the Second City at Ewa has been emphasized, Central Oahu and its "urban fringe" area continues to attract new residents. The Mililani Town Master Plan projects an ultimate population of 50,000. The new Gentry development will add 18,000 persons to the estimated 1984 population of 12,783 within its development areas.

The present population of Central Oahu is estimated to be 114,611; this is expected to climb to 134,851 by the year 2000.

The proposed project is expected to house businesses which will service not only the major market of Honolulu but also service the Central Oahu communities including the military. Of greater significance is the possibility of Central Oahu residents finding employment in the proposed industrial park enabling them to get to and from work faster.

ENVIRONMENTAL CHARACTERISTIC: The proposed project area is a highly disturbed property from past agricultural activities. The last use of the area was as a dairy. Approximately 400 to 800 head of cows were quartered in this low-lying area of Kipapa Gulch.

No rare or endangered native plant species were found within the project. Outside of the farm equipment repair firm and the firewood processing firm sites, the gulch lands formed by alluvial deposits can be described as being over-grown with

exotic species such as guinea grass, castor bean and other noxious weeds and shrubs. The banks of Kipapa Stream and the east gulch wall are heavily overgrown with albizzia, haole-koa, castor bean, guinea grass and other exotics.

The west pali wall is not as heavily over-grown as the east pali wall. The vegetation on the pali wall include haole-koa with some Christmas berry and guinea grass.

On the east bank and housing area, a'ali'i and hialoa were the only natives species encountered. These are common-species.

Survey of the area and review of other studies of the general area indicates that there are no native fauna species that inhabit this area. The animals which appear to inhabit this area include the roof rat and the mongoose. Birds seen in the area were the introduced or exotic species such as the common mynah, barred dove, white-eye sparrow, bulbul, cardinal and cattle egret. No endemic native birds were observed or are thought to inhabit this site.

Kipapa Stream does not appear to contain any native species. Only mosquito fish (Poecilia sp.) have been observed in the stream. Records of other developments in this general area do not show any native aquatic species in this section of Kipapa Stream. The fact that the stream goes dry at times indicates that it probably is not a suitable habitat for native fish species. Any construction involving the stream must take into consideration the reserved use of the stream flow by others; no reduction of stream flow or deposition of silt and sediment is permitted by provisions of the deed.

in?  
hi'aloa  
Walteria  
Mexico  
family

← No

6. **USE OF PUBLIC FUNDS:** No public funds are required by this project. All construction costs will be borne by the developer. Since this area has been in agricultural use, police and fire protection services are available. However, with the new development, additional surveillance or inspection may be required due to the added value of the area upon completion.

No additional public lands are required by this project; utility services will use existing public roads if required.

7. **PHASING OF ACTION:** The proposed industrial park is expected to take at least four to five years to complete. The permitting process for a development plan amendment, land use boundary amendment, and zoning will take at least two years. The design of the development will necessitate one year while construction will require one to two years.

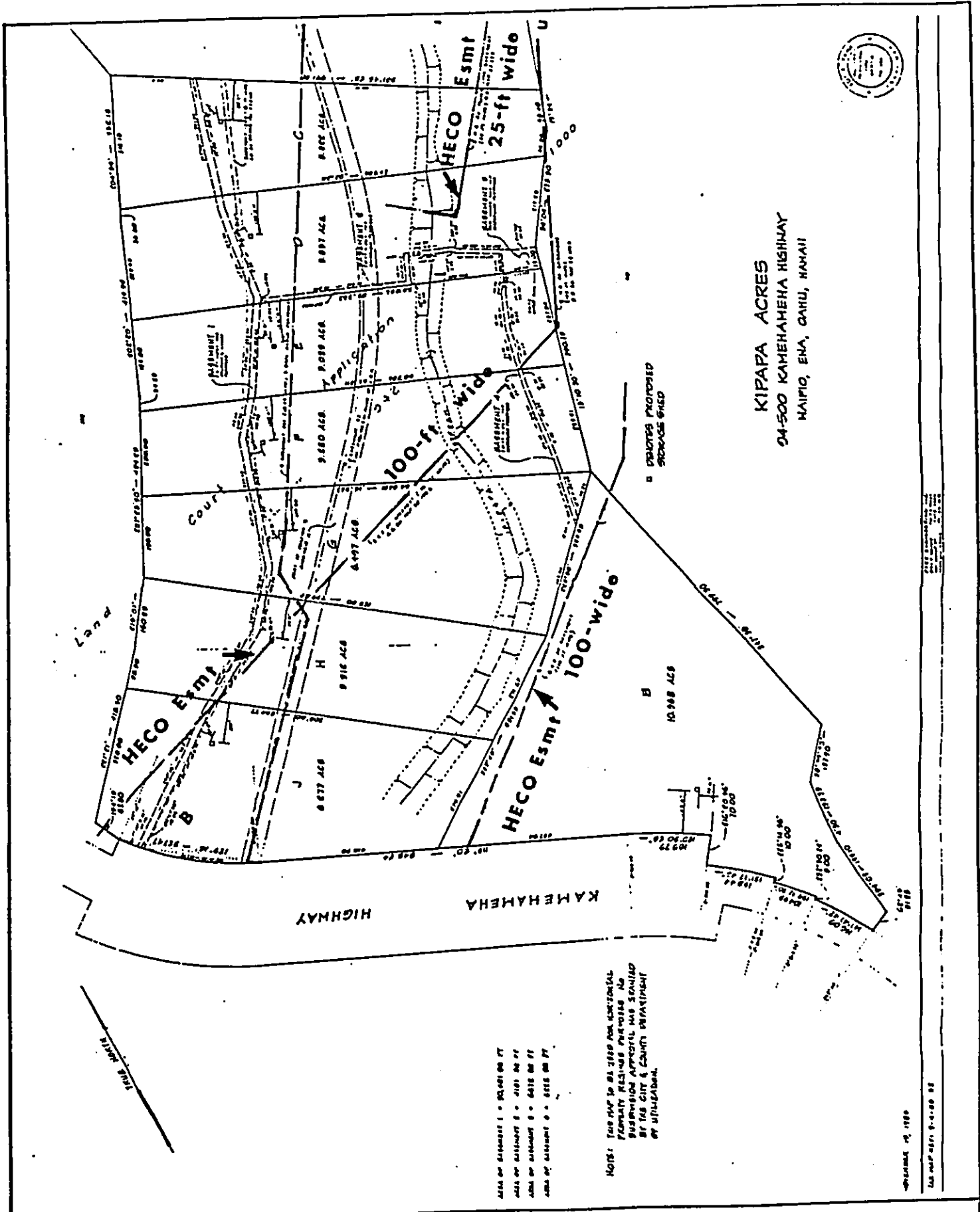
The cost of the project is estimated to be \$5,000,000, more or less.

8. **HISTORIC PERSPECTIVE:** The project site was originally part of the John Ii Estate. Recent records indicate that in 1953, 83.452 acres of land (the area occupied by Dairy-Co., Inc., and the Peterson poultry farm) were sold by Hawaiian Pineapple Company to Frank Munoz and Associates, Ltd. In 1955, the property was sold to Theodore Con Hin Char; and then to Haruo Kaneshiro in 1955 and back to Char in 1957. Waialae Dairy acquired the site in 1958. Dairy-Co., Inc., purchased the 82.695 acres from Waialae Dairy in 1969. The area was subdivided in 1976 to separate the poultry farm from the dairy operations. The poultry operation required 32.543 acres and was

named the Ige Feed and Poultry Farm, Ltd. Subsequently, the poultry farm was sold to James H. Peterson and Sons in 1983 which included 32.328 acres. Minor areas have been set aside for easement purposes. The remainder of the area owned by Dairy-Co., Inc., is the 50.152 lot identified as TMK: 9-4-05: 52, as shown in Figure 2. This area was converted into a horizontal property regime (condominium) of agricultural lots in 1986 (and named "Kipapa Acres") which is the present status of the project site. This is shown in Figure 5.

9. EVALUATION OF POTENTIAL ENVIRONMENTAL IMPACTS: The potential impacts upon the project include the following:

Traffic: This could be the major impact arising from this project upon the neighboring communities. Traffic on Kamehameha Highway has decreased from its peak count of 37,735 measured during a 24 hour period in 1976. This, of course, is due to the H-2 Highway which serves Mililani Town, Melemanu Woods, Wahiawa, and other communities on the North Shore. The entry to the project site is at the Wahiawa end of Roosevelt Bridge, a two lane structure. The problem that may arise is the entry into the project area during the peak morning hour from the southbound traffic lane. This could slow down the southbound traffic as the northbound cars may prevent quick entry into the project area resulting in a back up of the southbound traffic. Also, the exit from the project site heading south during the afternoon peak traffic hour could be difficult due to the homeward bound traffic heading north. The critical problem would be exit from the proposed project during peak hour traffic in the morning and



KIPAPA ACRES  
 94-500 KAMEHAMEHA HIGHWAY  
 HAIPO, ENA, OAHU, HAWAII

AREA OF LOTS A - 10,000 SQ FT  
 AREA OF LOTS B - 10,000 SQ FT  
 AREA OF LOTS C - 10,000 SQ FT  
 AREA OF LOTS D - 10,000 SQ FT

NOTE: THIS PLAN IS BEING PREPARED FOR THE  
 PURPOSES OF THE CITY OF HONOLULU AND  
 SUSPENSION APPEAL MAY BE FILED  
 BY THE CITY & COUNTY DEPARTMENT  
 OF UTILITIES.

FEBRUARY 19, 1980  
 THE ENGINEER'S SEAL

PROPOSED KIPAPA INDUSTRIAL PARK

# KIPAPA ACRES

FIG. 5

afternoon and entry into the site from southbound traffic.

Flooding: Since the project area is traversed by Kipapa Stream, improvements will have to be constructed to protect the project site from a potential 100-year storm.

Water Resources: Since the Pearl Harbor Water Management Area sustainable yield has been proposed for reduction, the use of water from this aquifer is under intensive evaluation. A water use permit must be obtained from the State Water Commission.

Wastewater Disposal: The nearest existing sewer facility is over a mile away. Wastewater must be pumped from the project in the bottom of the gulch and lifted to Kamehameha Highway and then discharged into the existing facility. The Honouliuli Wastewater Treatment Plant is nearing capacity and may not be able to accommodate effluent from the proposed industrial lots. Private sewage treatment plants are not permitted at present and the location of the project site above the Underground Injection Control (UIC) line prevents discharge of wastewater on the property.

Proximity to Poultry Farm: The proposed industrial park will be located next to an existing poultry farm. The poultry farm maintains approximately 60,000 birds. Odor commonly associated with such an enterprise is expected to affect some of the lots.

Existing Easements: The project must be designed to accommodate the existing easements which include access over the property, overhead power lines and underground communication .



lines. The users of these easements include Hawaiian Electric Company, Waiahole Ditch Company, U.S. Government, and the Peterson poultry farm. This will necessitate location of structures to unaffected areas thereby diminishing the utility of the project site. The easements for the HECO transmission lines which are 100-feet and 25-feet wide as noted on Figure 5, are perpetual easements with provisions specifying no buildings within the easement area (under the power lines) unless waivers are signed by tenants who may erect structures within said easements. No interference with the existing easements owned by HECO, Hawaiian Telco, U.S. Army, et al., is permitted. The easement owners shall have the right to maintain their facilities at all times.

SECTION 2  
ALTERNATIVES TO PROPOSED ACTION

Several proposals for use of the project site were evaluated. These alternatives are as follows:

1. Continued use as an agricultural condominium subdivision. This alternative represents the status quo. Since November 1984, the project site has been set-up as a horizontal property regime, in other words, an agricultural condominium development with no subdivision plan approval. To date, there is only one permanent tenant utilizing 4.5 acres under a conditional use permit from the City and County Department of Land Utilization issued March 31, 1987. This is a conditional use permit, Type 1: Sale and service of machinery used in agricultural production. The conditional use permit now in effect would be a permitted use in the proposed light industrial park. There have been no other applicants for any portion of the remainder of the property. It has been for this lack of interest in the property that uses other than agricultural are being considered.

2. Return to dairy operations. As described in Appendix B, the return to dairy operations is not only prohibitive from a cost standpoint but under the new Milk Control Act, a milk quota must be obtained before a production license can be issued. No quota was available for purchase at the time the draft EIS was prepared. In recent months, two existing dairies have announced that their milk quotas are for sale according to the State Department of Agriculture. Due to the uneconomical aspects of

operating a dairy as shown in the consultant's study, Appendix B, no attempt to pursue this matter will be made at this time.

3. Develop a poultry farm. The adjoining poultry farm was started by Dairy-Co., Inc. However, it was sold off after a period of unfortunate financial reverses beyond the control of the owner occurred. The worst of these was the loss of power caused by Hurricane Iwa in 1982. The power outage resulted in complete loss of the poultry stock. Another power outage which occurred earlier in 1979 experienced similar disastrous results. The poultry farm was sold to help Dairy-Co., Inc., meet its payment for the balance of the property purchased from Waialae Nui Dairy. Based on past experience, this alternative was not selected.

4. Develop a residential community. There appears to be some merit in this idea since the nearby lands on both sides of Kipapa Gulch are being developed as urban properties: Mililani Town expansion and Gentry Waipio. However, being in a gulch makes the site unattractive for residential development. Further, the additional traffic that would be generated by residents of the project during peak hours would most likely be unacceptable to community groups and government agencies based on past testimonies that were presented regarding development in Central Oahu. This alternative for the lower area of the property within Kipapa Gulch was not considered for the reasons cited. The existing rental cottages on the upper 10 acres will be retained.

5. Other uses. Since the much of the property is uncommitted and idle, some uses will have to be made by the owner

to generate revenues to pay for his investment as it is with any business enterprise. Presently, cut logs are brought to the site and processed into size for firewood. This is a small and temporary use under a conditional use permit from the City. Another conditional use permit issued recently was for the processing and pelletizing of chicken manure and this should be underway at any time. The grazing of cattle on the grassy area supplemented by feed to generate some income from the land is also a possibility. Other uses will be explored with the goal of making the land generate income to meet obligations of Dairy-Co., Inc., pending the future of the proposed industrial park.

Final note: In considering the dairy operations and the poultry farm, much thought was given to the uses, proposed and existing, of the nearby and adjoining lands. The residential expansion now under construction on the western boundary of the Dairy-Co., Inc., property may be affected by the additional adverse impacts associated with dairy or poultry operations. While such agricultural uses are permitted under the present AG-1 zoning regulations, it does appear to be incompatible with the long range plans of Central Oahu as centered around Kipapa Gulch. As such, serious consideration of such alternatives was discounted.

SECTION 3  
DESCRIPTION OF ENVIRONMENTAL SETTING AND  
PROBABLE IMPACT OF THE PROPOSED ACTION

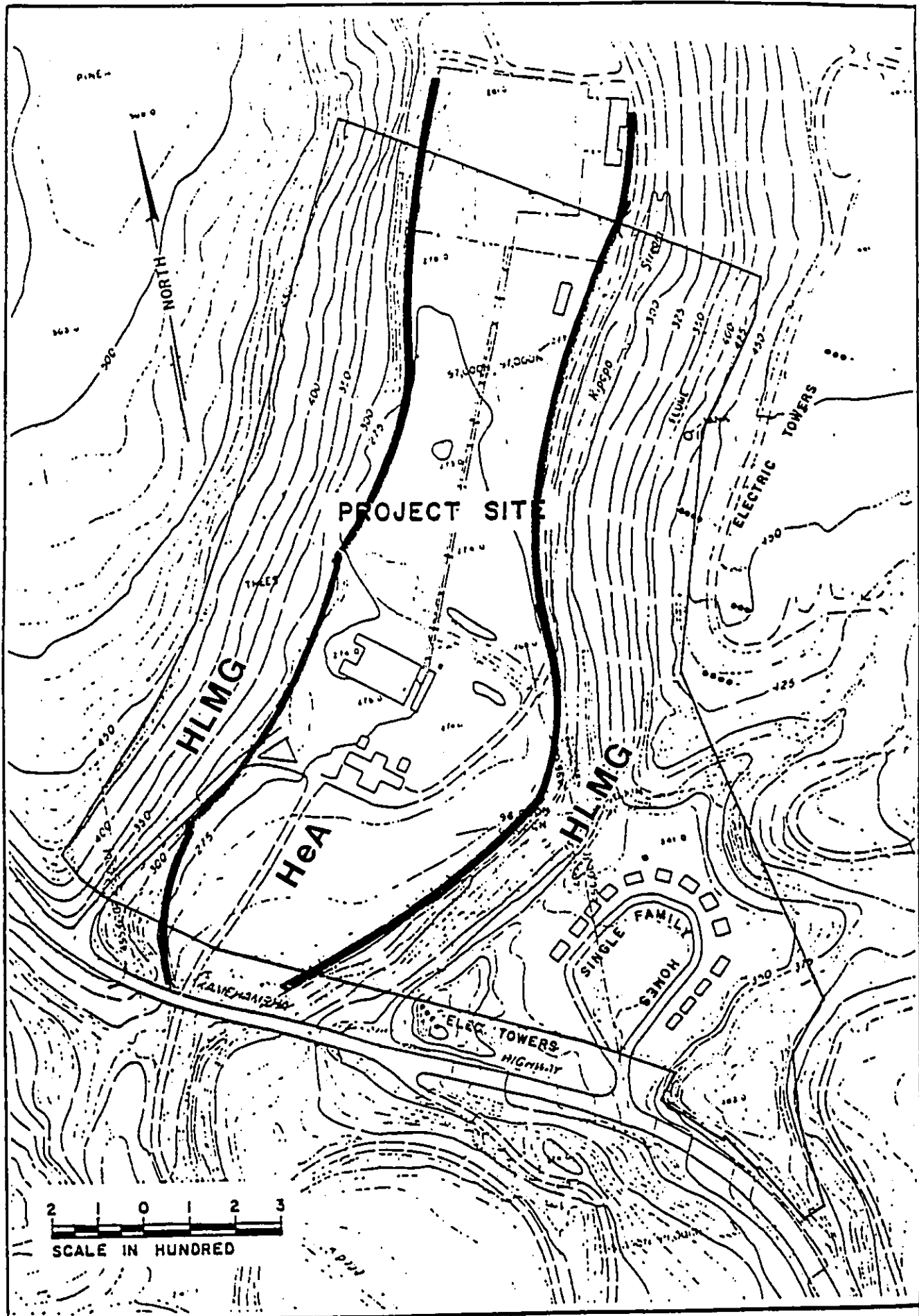
**ENVIRONMENTAL SETTING**

1. Topography: The project area is divided into two sections. The upper 10.568-acre tract, presently occupied by tenants in rental cottages, is a relatively flat area from rock quarrying operations which took place about 20 years ago. Some large boulders remain from the quarrying operations. The remaining 39.584 acres is comprised of the steep pali walls of Kipapa Gulch and the flat lands of the gulch itself which is traversed by Kipapa Stream. These flat bottom lands for which a light industrial use is proposed totals 20+ acres.

The pali walls on the east and west of the proposed industrial park have grades of 60 to 70 percent making them unsuited for development. For the bottom flat lands, there is a slight downward grade running from north to south approximating the Kipapa Stream gradient.

Kipapa Stream flows at the bottom of the east pali wall of the gulch. The stream depth and width varies. At the crossing for the well installation, the width of the stream is 60 to 70 feet and the depth about 19 feet. The stream is unlined and bordered with a heavy growth of shrubs, trees and weeds.

2. Soils: The soils of the area are composed of two predominant soil series. These are the Helemano silty clay and Haleiwa silty clay. The Helemano series are found on the upper 10-acre tract and the pali walls of the gulch; the Haleiwa silty clay makes up the flat alluvial lands. Figure 6 is a soils map



PROPOSED KIPAPA INDUSTRIAL PARK

# SOIL MAP

FIG. 6

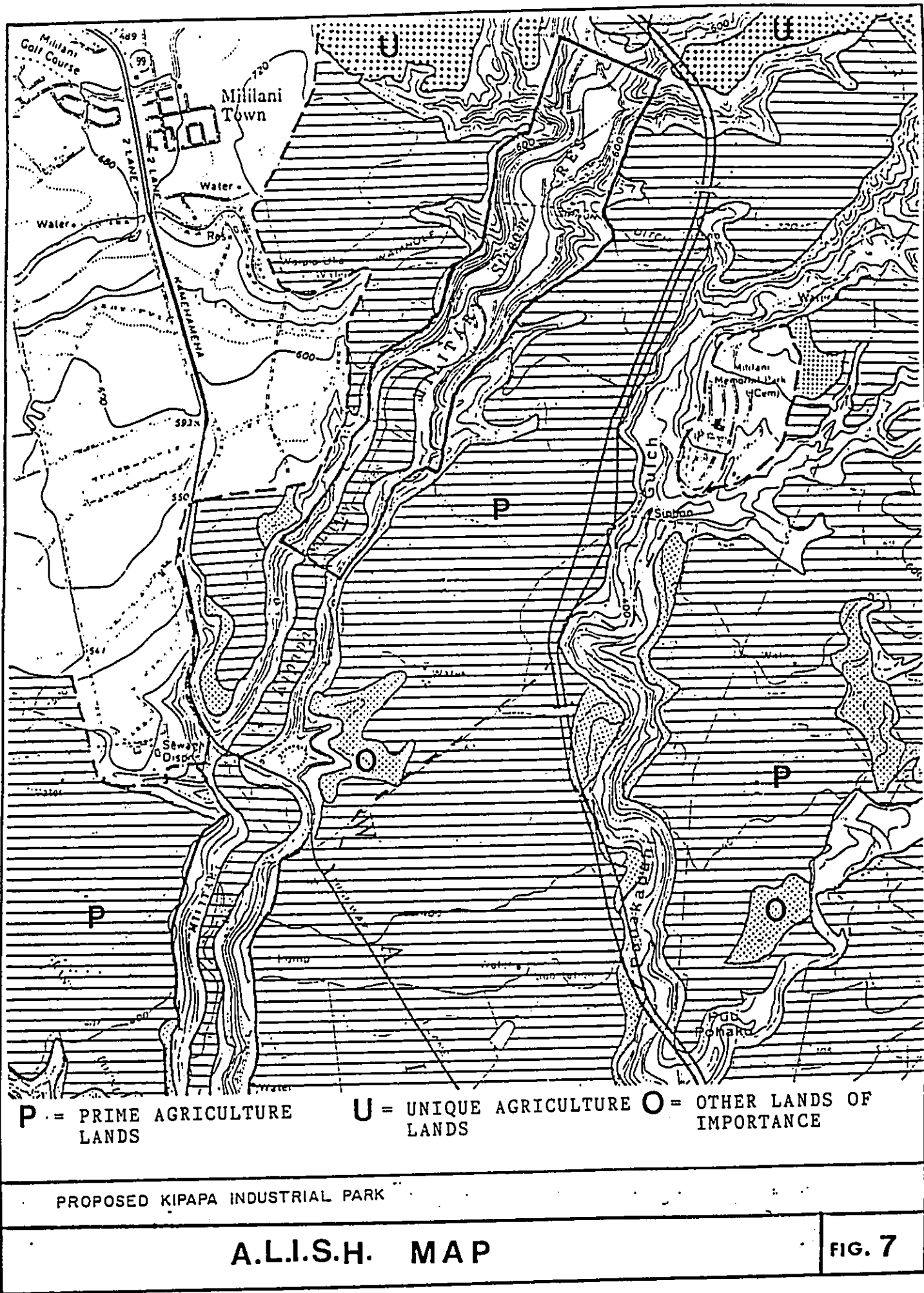
of the area. A description of each soil series is as follows:

Helemano silty clay (HLMG) - This series consists of well-drained soils on alluvial fans and colluvial slopes on the sides of gulches. They are extremely steep with 30 to 90 percent slopes. The soil is on V-shaped gulches. Typically, the surface layer is dark reddish-brown silty clay about 10 inches thick. The subsoil, about 50 inches thick, is dark reddish-brown and dark-red silty clay. The substratum is soft, highly weathered basic igneous rock. The permeability is moderately rapid, runoff is medium to very rapid, and erosion hazard is severe to very severe. This soil is used for pasture, woodland and wildlife habitat.

Haleiwa silty clay (HeA) - This series consists of well-drained soils on fans and in drainageways along the coastal plains. They developed in alluvium derived from basic igneous material. They are nearly level to strongly sloping. Typically, the surface layer is dark-brown silty clay about 17 inches thick. The subsoil and substratum, to a depth of more than 5 feet are dark-brown and dark yellowish-brown silty clay. Permeability is moderate, runoff is very slow, and the erosion hazard is no more than slight. The soil is subject to occasional nondamaging overflow in some places. The soil is used for sugarcane, pasture, and truck crops.

According to the State ALISH plan, the alluvial flat lands are designated as Prime agricultural lands while the pali walls and upper flat area are unclassified as shown in Figure 7.

The Land Study Bureau Detailed Land Classification report

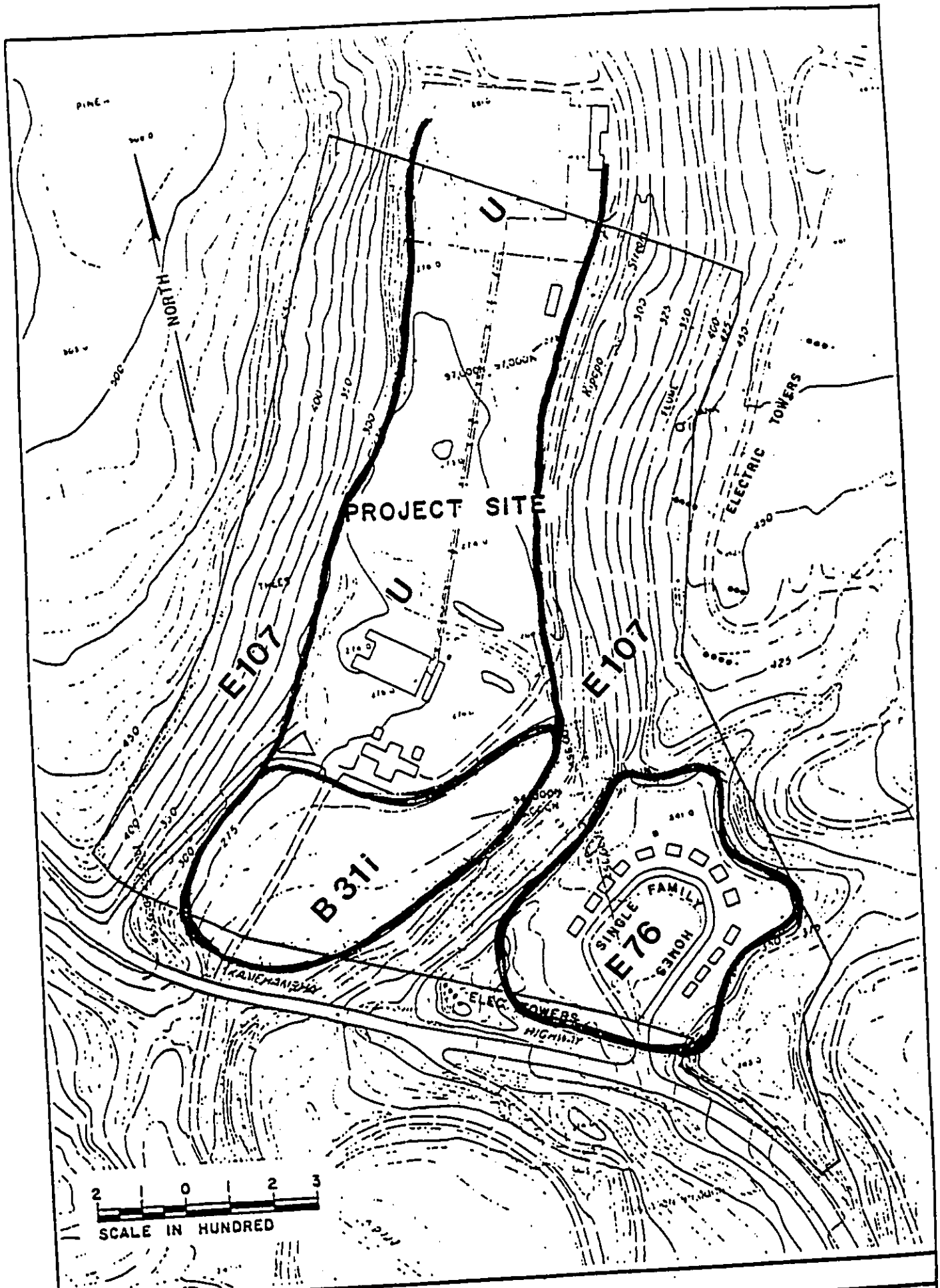




indicates that only a small portion of the project site has an Overall Productivity Rating of B. This is the small piece of land between the buildings and the Kamehameha Highway road right-of-way. Figure 8 shows the boundaries of the different classes of soil productivity rating. Since the dairy was in operation when the study was made, a portion of the project site is designated Urban. The steep and rocky gulch walls and the cottage area are classified E. The productivity ratings run on a scale of A to E where A is the highest or best use.

3. Weather: The project area receives about 40 inches of rain per year. Most the rain is recorded during the period of late fall to early spring. Refer to Figure 9. The temperature readings at nearby Wheeler AFB show that the average temperature of the coolest month is 68.2 degrees F.; while the average temperature of the warmest month is 75.5 degrees F. The extreme low and high temperatures recorded are 52 degrees F. and 89 degrees F., respectively. Since the project area is in a low sheltered area, elevation 275 feet as compared to the elevation 845 feet at Wheeler AFB, slightly higher temperatures can be expected. The average annual temperature recorded by the Pineapple Research Institute for this general area was 72.0 degree F.; the average temperature for the coldest month was 67.8 degree F. and the average temperature for the warmest month was 75.5 degree F. The prevailing wind is from the northeast; these are the trade winds which occur about 8 months of the year. According to wind ratings, this area is within the Class 1 district, the lowest rated class with winds less than 10 miles per hour.

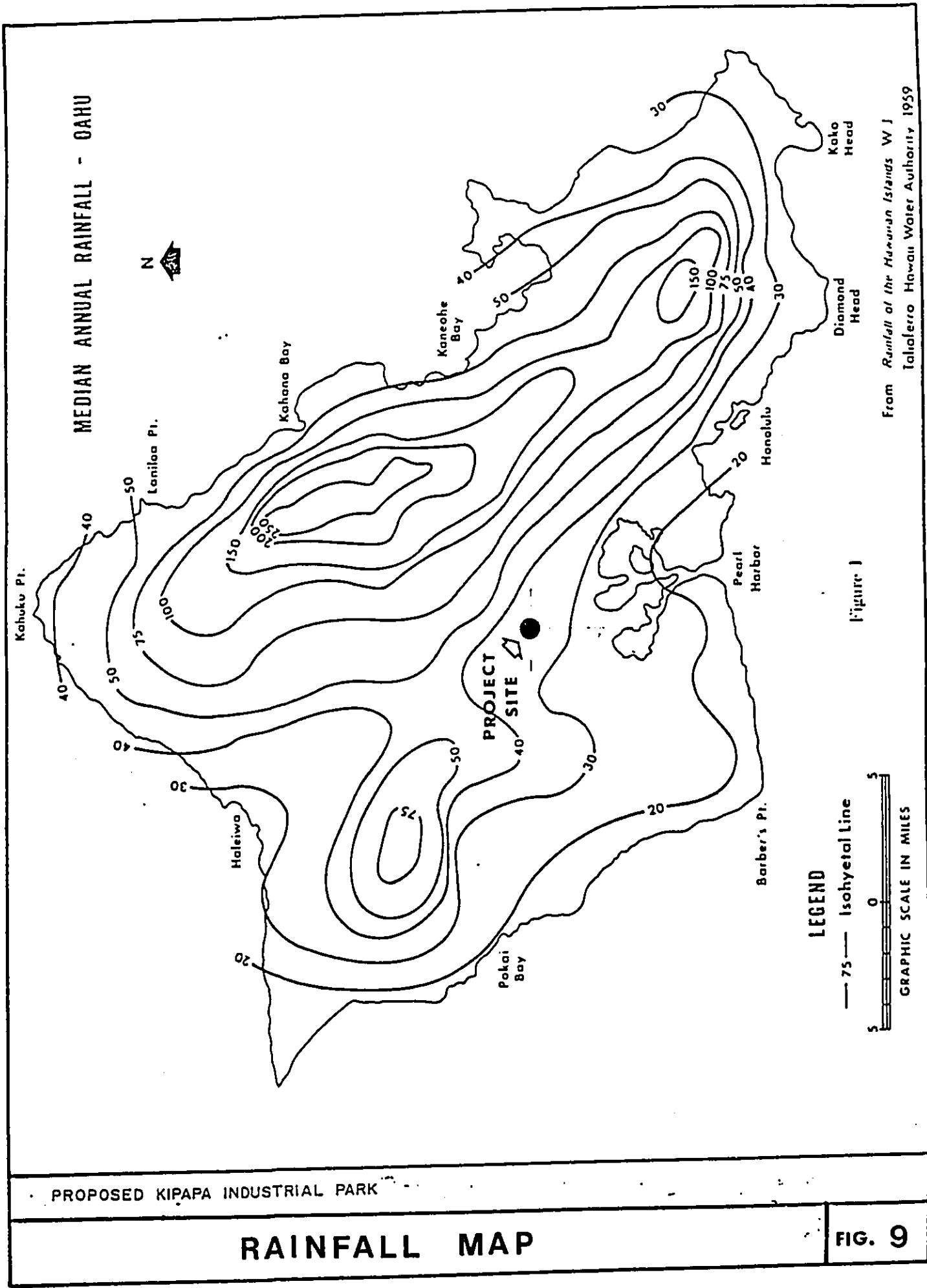
4. Air quality: The project area is heavily vegetated with



PROPOSED KIPAPA INDUSTRIAL PARK

**SOIL PRODUCTIVITY MAP**

FIG. 8



PROPOSED KIPAPA INDUSTRIAL PARK

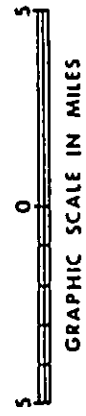
**RAINFALL MAP**

**FIG. 9**

Figure 1

**LEGEND**

— 75 — Isohyetal Line



From *Rainfall of the Hawaiian Islands* W J Talaferra Hawaii Water Authority 1959

grass and shrubs and hence, the only minor impact is the dust raised when vehicles traverse the unpaved access road within the property and results in a slight nuisance of temporary nature. Occasional dust may be registered from nearby cultivated fields after harvesting and before planting. This is infrequent and poses no lasting threat to the air quality.

5. Water resources: The project area is within the Pearl Harbor Groundwater Control Area. This aquifer which underlies central Oahu, is the most important fresh water aquifer on the island. The project area lies just outside of the high level reservoir underlying the Schofield plateau. This top of this high level underground reservoir is 270 to 280 feet above mean sea level. The Pearl Harbor basal water body which serves the project area is over 20 feet above sea level. Due to apparent excessive withdrawals from the aquifer which resulted in declining basal water heads and increasing salinity, the State designated the Central Oahu area as the Pearl Harbor Ground Water Control Area.

The existing well on the property is at ground elevation 297 feet. The well is 401 feet deep with a well pump capacity of 240 gallons per minute. Well water usage has depended on the use of the area; during dairy and poultry operations, the water consumption averaged about 110,000 gallons per day.

The following tables are analyses of tests conducted by the State Department of Health of the well water. These include tests for organic and inorganic chemical substances as well as bacteriological analyses. The chemical tests indicate the

quality of water to be within established limits. The bacteriological tests have experienced violations of standards due to lack of chlorine residual. These can be attributed to the present manual operation of the simple hypochlorinator unit. This will be replaced with a more efficient unit under the proposed well improvement program for the industrial park.

The following test data were obtained from the Department of Health and these include:

- Inorganic Chemical Analysis
- Organic Data
- Bacteriological Examinations
- Chloride Content

SUMMARY OF INORGANIC CHEMICAL ANALYSES  
DOH SYSTEM #328 : Kipapa Well

	<u>STANDARD</u>	<u>8/30/82</u>	<u>3/30/84</u>	<u>4/14/86</u>	<u>6/29/87</u>	<u>6/6/88</u>
ARSENIC	0.05		<0.02	<0.02	<0.02	<0.02
BARIUM	1.		<0.8	<0.8	<0.8	<0.8
CADMIUM	0.010		<0.005	<0.005	<0.005	<0.005
CHROMIUM	0.05		<0.01	<0.01	<0.01	<0.01
LEAD	0.05		<0.02	<0.02	<0.02	<0.02
SELENIUM	0.01		<0.01	<0.01	<0.01	<0.01
SILVER	0.05		<0.03	<0.03	<0.03	<0.03
MERCURY	0.002		<0.0005	<0.0005	<0.0005	<0.0005
NITRATE (AS N)	10.		1.89	1.73	1.80	1.45
FLUORIDE			<0.2	<0.2	<0.2	<0.2
ALKALINITY		73				
HARDNESS		73				
CHLORIDE	250.		39	34	30	41
TOTAL DIS. SOLIDS	500.	200.6	196	196	196	193
pH (SCALE) 6.8 - 8.5		7.12				
CORROSIVITY NON-CORROSIVE		-0.94				
SODIUM			24.	22.	24.	21.
IRON					0.00	0.00
COPPER					0.00	0.00

(Note: Measurements in mg/l unless otherwise indicated.)

ORGANIC DATA  
DOH SYSTEM #328: Kipapa Well  
Sample taken: 7/13/87

<u>SUBSTANCE</u>	
ENDRIN	<0.0002
LINDANE	<0.002
METHOXYCHLOR	<0.004
TOXAPHENE	<0.005
2-4-D	<0.002
SILVEX	<0.0004

(Note: Measurements in mg/l.)

BACTERIOLOGICAL EXAMINATIONS  
DOH SYSTEM #328: Kipapa Well

<u>Year</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
No. of Violations	3	2	1	2	2	0	1

CHLORIDE CONTENT  
DOH SYSTEM #328: Kipapa Well

<u>YEAR</u>	<u>YEAR</u>	<u>YEAR</u>	<u>YEAR</u>
1978: 28 ppm	1980: 26 ppm	1984: 39 ppm	1987: 30 ppm
1979: 28 ppm	1981: 22 ppm	1985: 34 ppm	1988: 41 ppm

(Note: Readings in parts per million, ppm.)

Kipapa Stream has an average flow 6.85 mgd based on measurements taken during the past 29 years at a gaging station located 1.5 miles upstream of the project area. The maximum flow of 5,680 cfs was recorded in 1963. There are times when there are no flow in the stream. The water rights to the stream are reserved and not available for this project. It should be noted that the original alignment of Kipapa Stream was altered prior to Dairy-Co., Inc., assuming ownership of the property.

6. Government and public services: Water is available to the project area from an existing well source. The historical use of water from this source has been over 100,000 gallons per day. The proposed usage will not exceed the historical water withdrawals.

No government sewer service is available at present at the project site. Extension to service the project area will be at the expense of the developer.

Being an industrial site, solid waste will be disposed by private firms.

Fire protection service for this area is provided by the Mililani Fire Station. The station is located just over 2 miles away. Additional assistance, if required, will come from the Pearl City, Wahiawa or Waiiau fire stations.

Electrical and telephone services are presently available at the project site. Expansion of services will be at the cost of the developer.

No recreation or school enrollment will be directly impacted by this proposed industrial park as no residential development is being planned.



The hospitals that can provide emergency service to the project site are the Wahiawa General Hospital and the Kaiser-Permanente Medical Center at Moanalua.

Traffic on Kamehameha Highway during peak hours are a concern of the nearby communities. This issue is discussed in detail under Probable Impacts.

7. Noise: The noise level at the project site is very low at present since little use of the project site is being made. The infrequent and small amount of traffic generated by the present users of the access road - Peterson Poultry Farm, a firewood processing firm, and the farm equipment repair and service firm operated by Roy W. Joaquin, does not create any disturbance to the adjacent lands.

8. Biota: Flora found on the site is mainly exotic. Since the site was previously used for dairy operations, the ground has been highly disturbed by cattle. Few native species were found; these are found mainly in the upper 10 acre tract and along the east pali wall and banks of Kipapa Stream. These are common varieties. The proposed industrial park site is covered chiefly with guinea grass and castor bean. A detailed plant list is attached as Appendix C.

Fauna: No threatened or endangered animal species were found to inhabit this area. Birds sighted in this general area are exotic. The long time use of this area by agricultural enterprises starting with the Hawaiian Pineapple Company and subsequently by dairy operations makes it unlikely that any native species would make this a habitat site. A fauna list is

contained in Appendix D.

9. **Archaeological sites:** There are no known or existing archaeological sites within the proposed industrial park. Due to the long use of the site for agricultural pursuits and as a dairy operation for many years, surface and near sub-surface archaeological structures, if any, would have been obliterated. Kipapa Gulch is recorded as a battle site between raiders from the Island of Hawaii and the reigning chief of Oahu. The bloody battle in Central Oahu resulted in corpses literally paving the gulch plain, hence the name Kipapa. Another battle is also recorded for this general area; again invaders from Hawaii attacked the forces of Oahu. Two heiaus were known to exist in Kipapa Gulch. These sites were about half mile north of the project site and is recorded as being destroyed during the period the area was used for cane cultivation. Appendix H is the report of an archaeological reconnaissance survey of this site.

#### PROBABLE IMPACTS

1. Scenic or visual: The proposed project site is located in an area that is screened by the high walls of Kipapa Gulch. A limited view of the project area is visible from Kamehameha Highway on Roosevelt Bridge. The grassy over-grown appearance of the project area will be turned into an industrial area removing the present semi-pastoral character. The large barn and elongated poultry sheds adds some industrial character to the site.

2. Land use: The proposed industrial park will replace the former dairy site, presently an agricultural condominium, with an

industrial park. The requested change will convert an agricultural zone into an urban industrial area.

3. Air quality: Air quality will be affected by the construction of the infrastructure, road, water and sewer lines. Construction of the industrial buildings of firms moving into the project site will also cause temporary air quality degradation. After completion of the project, air quality will primarily be affected by vehicle movement within the project area. These short-term impacts will be controlled by adhering to State air control regulations which require no visible fugitive dust at the property line; and construction equipment be equipped with proper exhaust mufflers.

The traffic density on Kamehameha Highway has decreased from what it was prior to the completion of the H-2 Highway. However, the growth of Central and North Oahu will inevitably result in additional traffic which impact the long-term air quality. An air quality study (Appendix G) was undertaken to estimate current ambient concentrations of carbon monoxide along Kamehameha Highway and to predict future levels both with and without the proposed project. Carbon monoxide concentrations were estimated to be well within State and National ambient air quality standards. In the year 1994 without the project, concentrations were predicted to remain about the same. With the project in place, concentrations were estimated for both with and without traffic control lights. If there is no signal, vehicles exiting the site will experience long delays during the afternoon peak traffic hour and will likely cause carbon monoxide concentrations to exceed State standards in the immediate vicinity of the

roadway intersection during worst-case meteorological conditions. (Predicted concentrations are within the less stringent National standards, however.) If a signal light is installed at the intersection, the worst case carbon monoxide concentrations could be brought within the State standards.

Long-term, indirect impacts are also possible due to the project's electrical power and solid waste disposal requirements. Quantitative estimates of these requirements are unavailable at this stage of the project, but the attendant impacts are expected to be small.

After construction, long-term impact on air quality could occur directly from emissions emanating from industries locating and operating at the project site. Since the specific industries that would be located here have not been identified, quantitative estimates cannot be made. However, the type of industries to be located here are expected to emit little or no air pollution. Firms will be screened to preclude industries that may generate an undue amount of pollution that could adversely impact the proposed park. If there is probability of significant adverse impact to the air quality, an air quality study will be required to ensure compliance with existing regulations and to prevent other tenants of the proposed industrial park from being adversely affected.

The air quality study report is contained in Appendix G.

4. Noise: During the construction period, there will be noise generated by construction equipment such as earth movers, backhoe, compressors, welding generators, and such heavy

machinery. This will be of temporary nature. Noise level at the project site will rise after completion of the industrial park compared to its present level. The primary cause of noise level will be the movement of vehicles in and out of the proposed industrial park.

Due to location of the project within Kipapa Gulch, to eliminate or minimize adverse noise levels, the selection of businesses locating in the proposed industrial park will be important. It is intended that industries that generate excessive noise levels will not be permitted. If any doubt exists, a noise level study conducted by an impartial firm qualified to perform such study will be a prerequisite to locating in the proposed park. Prospective tenants will be advised of this condition prior to entry into the proposed industrial park.

Since the typical business firm operates only during the normal daylight working day, except for occasional late night accounting or other office-related purposes, noise levels will not create any significant impact. Prospective tenants will be advised of this condition and any firm which intends to conduct business at night will be required to conduct a noise level study also. Failure to meet the noise level provisions of existing regulations will result in denial of entry into the park as a tenant.

5. Sewage: While the amount of wastewater generated by the proposed industrial park will be less than 0.100 mgd, underground disposal is not permitted inasmuch as the project site is located in the "no pass zone" established by the Honolulu Board of Water

Supply. The proposed industrial park sewer main will discharge into the existing manhole at Gentry-Waipio and serviced by the Honolulu Water Treatment Plant. This will add to the diminishing capacity of the treatment plant to handle wastewater. Expansion of the plant will be necessary as proposed by the City to accommodate the projected or proposed growth of Central Oahu.

6. Water service: Water service is presently available through the existing water well facility. Inasmuch as the aquifer in Central Oahu has apparently reached its sustainable yield, water allocations are closely monitored. Being in the Pearl Harbor Groundwater Control Area, application for a water use permit is pending with the State Commission of Water Resource Management. The estimated water requirements will not exceed the historical water usage amount of the project site.

7. Traffic: Traffic along Kamehameha Highway will be increased by the proposed industrial park. Standard traffic density for an industrial park is estimated at 1,321 vehicle trips (total both ways) on an average weekday. This will be a sizeable increase from the 100 vehicle trips or less that exists presently. A traffic count in 1986 at Roosevelt Bridge recorded a total of 17,326 vehicles per day, 8392 vehicles north bound towards Wahiawa and 8934 vehicles south bound. A more recent 24-hour count in 1987 tallied 20,790 vehicle trips, 10,180 vehicles south bound towards Pearl Harbor and 10,610 north bound, across Roosevelt Bridge. A traffic analysis is shown in Appendix F.

8. Archaeological sites: No known archaeological sites are

listed as being on the project site. Heiaus known to have existed in Kipapa Gulch were located about a half mile north of the project site and were destroyed during the period the area was cultivated in sugar cane. Should any archaeological remains be unearthed during construction, the State will be notified and further action will be in accordance with established regulations.

An archaeological reconnaissance survey was made of the site; this is shown in Appendix H. The survey results showed no findings of archaeological surface features or exposures of subsurface deposition. However, due to the fact that Kipapa Stream was realigned during modern times, the potential for subsurface deposition in the former flood plain area exists. In light of this, following approval of the project and prior to construction, systematic backhoe trenching of selected areas will be performed to ascertain the presence or non-presence of archaeological remains. Further, while no work is called for regarding the pali walls, a more thorough search for lavatubes in the outcrop will be implemented at the same time.

9. Access: The proposed industrial park will generate new traffic in the area. Access to the poultry farm will be facilitated over the new road which will be constructed according to City standards. This may impact the security problem for the adjoining poultry farm and the Air Force fuel tanks further on upstream of the poultry farm. A control gate to prevent unauthorized entry to the poultry farm can be installed; however, this will not prevent entry by foot into the poultry farm or the nearby Air Force tank facility from the old right-of-way.

10. Socio-economic: The proposed project can provide over three hundred jobs as contemplated. These jobs will undoubtedly be a mixture of new and old jobs from firms moving into this area. There is excellent possibility that some residents of Central Oahu will find employment in the proposed industrial park.

There is a need for new industrial lands to accommodate the growing population of Oahu. There is also a need to provide space for industries unable to remain in the huge Kakaako State redevelopment project. The rapidly increasing population of Oahu coupled with the decrease in Hawaii's basic sugar and pineapple industries have resulted in more agricultural lands being converted into urban areas. The project area have seen a succession of failed or discontinued agricultural uses of the area, to wit, sugar, pineapple, dairy, and agricultural condominium lots. The conversion of this site from agricultural to urban use follows the general pattern for Oahu.

From reviewing the Environmental Impact Statement documents of current projects proposed for this section of Central Oahu, the following information was gathered:

Gentry-Waiawa:			
Residential Area:	727	acres	
Apartment, Low-density:	82	"	
Apartment, Medium-density:	15	"	
Commercial/Industrial:	115	"	
Golf/open space/park/school:	393	"	
Major roads:	63	"	1,395 acres

Mililani-Mauka:			
Residential Area:	770	acres	
Apartment, Low-density:	60	"	
Commercial:	5	"	
Parks/Recreation:	46	"	



Community facilities:	211	"	1,200 acres
<b>Hawaii Technology Park:</b>			
Campus Industrial:	190	acres	
Business Commercial:	16	"	
Recreation/Education:	6	"	
Roadways:	28	"	
Open Space:	16	"	256 acres

The market feasibility study for the proposed Kipapa industrial park shows that recently developed industrial areas have experienced short sales periods of generally less than a year. The availability of competitive industrial land is a significant factor in the projected sales of the Kipapa industrial lots inasmuch as there are virtually no vacant industrial parcels available except at Campbell Industrial Park and the Halawa Business Park.

The land prices for other industrial parks are:

Gentry Business Center .....	\$19 to \$22	per. sq. ft.
Waipahu Industrial Park .....	20 to 22	" "
Pearl City Industrial Park ..	14 to 16	" "
Mililani Technology Park ....	11 to 14	" "
Campbell Industrial Park ....	8 to 9	" "

The Kipapa industrial park is expected to be in the \$14 to \$16 price range depending on the final development costs. Appendix A is the market study for this project.

SECTION 4  
RELATIONSHIP OF LAND USE PLANS, POLICIES, AND CONTROLS  
FOR THE AFFECTED AREA

1. FEDERAL: Not applicable.

2. STATE:

Existing land use designation: Agriculture

Hawaii State Plan Chapter 226, Hawaii Revised Statutes

The proposed industrial park would be consistent with the following objectives and policies of the Hawaii State Plan: Section 226-5, Objectives and Policies for Population

(b)(3):

Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.

Comment: The proposed project will provide a wider range of employment opportunities for the residents of Central Oahu. It will provide more choices of lifestyle and jobs for the surrounding communities.

Section 226-6, Objectives and policies for the economy in general (a)(1):

Increased and diversified employment opportunities to achieve full employment, increased income and job choices, and improved living standards for Hawaii's people.

Comment: The proposed project will provide the surrounding communities with employment opportunities due to the 300 or more jobs expected to be generated. These jobs will increase the range of employment choices within a

reasonable traveling distance for residents within Central Oahu.

Hawaii State Functional Plans

The proposed industrial park would impact upon the following objective and policy of the State Agricultural Plan:

Objective B, Policy 4:

Encourage productive agricultural use of the most suitable agricultural lands.

Comment: The project area is designated agricultural on the State Land Use Map. A portion of the level land within the gulch area has a productivity rating of B; the balance of the property is rated E and U. (Refer to Figure 8).

Since the dairy operation ceased in 1974, the property owner converted the property into an agricultural horizontal property regime in hopes of attracting agriculturally oriented tenants. This attempt has been unsuccessful. The land area useable for agricultural purposes is limited to 20 acres, more or less. The removal of 20 acres from the Agricultural District will not have any significant impact upon the availability of adequate lands for agricultural production on Oahu. Other prime agricultural lands in this general area of far greater size have been converted from agricultural to urban.

3. CITY & COUNTY:

The General Plan:

The General Plan sets out the long range social, economic, environmental, and design objectives for the general welfare

of the citizens of Oahu. This section discusses the relationship between the objectives and policies of the General Plan and the proposed industrial park.

Economic Activity: Objective A: To promote employment opportunities that will enable all the people of Oahu to attain a decent standard of living.

Policy 2: Encourage the development of small businesses and larger industries which will contribute to the economic and social well-being of Oahu residents.

Policy 3: Encourage the development in appropriate locations on Oahu of trade, communications and other industries of a non-polluting nature.

Comment: The proposed industrial park will provide Central Oahu, more particularly, the Mililani and Gentry-Waipio residents with increased opportunities for employment in the immediate area. The site is an appropriate location for an industrial park. It is insulated from neighboring developments by the steep pali walls of the gulch which shield the industrial park from view.

Economic Activity: Objective C: To maintain the viability of agriculture on Oahu.

Policy 1: Assist the agricultural industry to ensure the continuation of agriculture as an important source of income and employment.

Policy 2: Support agricultural diversification in all agricultural areas on Oahu.

Comment: The project site is designated Agricultural on the State Land Use Map and on the Central Oahu Development Plan. It is also zoned for Agriculture. The land owner has, since 1974, attempted to encourage agricultural activities on the property without any success. In 1985, the owner created an agricultural horizontal property regime but was unable to attract any interest in establishing agricultural activities on the property. The soils of the project site capable of supporting an agricultural enterprise amounts to 20 acres, more or less. The conversion of this limited acreage from agricultural to industrial use is not of sufficient size to create any adverse impact in the retention of adequate agricultural acreage on Oahu.

Energy: Objective B: To conserve energy through the more efficient management of its use.

Policy 1: Ensure that the efficient use of energy is a primary factor in the preparation and administration of land use plans and regulations.

Policy 4: Promote the development of an energy-efficient transportation system.

Comment: The establishment of an industrial park at this location will assist in fostering an efficient use of energy by shortening vehicular trip distances for employees and for industries accommodating the service needs of the Central Oahu residential, commercial and industrial developments.

Physical Development and Urban Design: Objective A: To coordinate changes in the physical environment of Oahu to ensure that all new developments are timely, well-designed,

and appropriate for the areas in which they will be located.

Policy 3: Phase the construction of new developments so that they do not require more regional supporting services than are available.

Policy 5: Provide for more compact development and intensive use of urban lands where compatible with the physical and social character of existing communities.

Policy 7: Locate new industries and new commercial areas so that they will be well related to their markets and suppliers, and to residential areas and transportation facilities.

Comment: The proposed industrial park is centrally located to provide industrial services to an already well established urban area and one anticipated to expand considerably in the near future. While centrally located between the growing Mililani and Waipio-Gentry areas, the project site being located in Kipapa Gulch is shielded to some extent from adjacent areas and will be compatible with the physical and social character of the existing communities. It is well located to serve related markets and suppliers in Central Oahu.

The Development Plan:

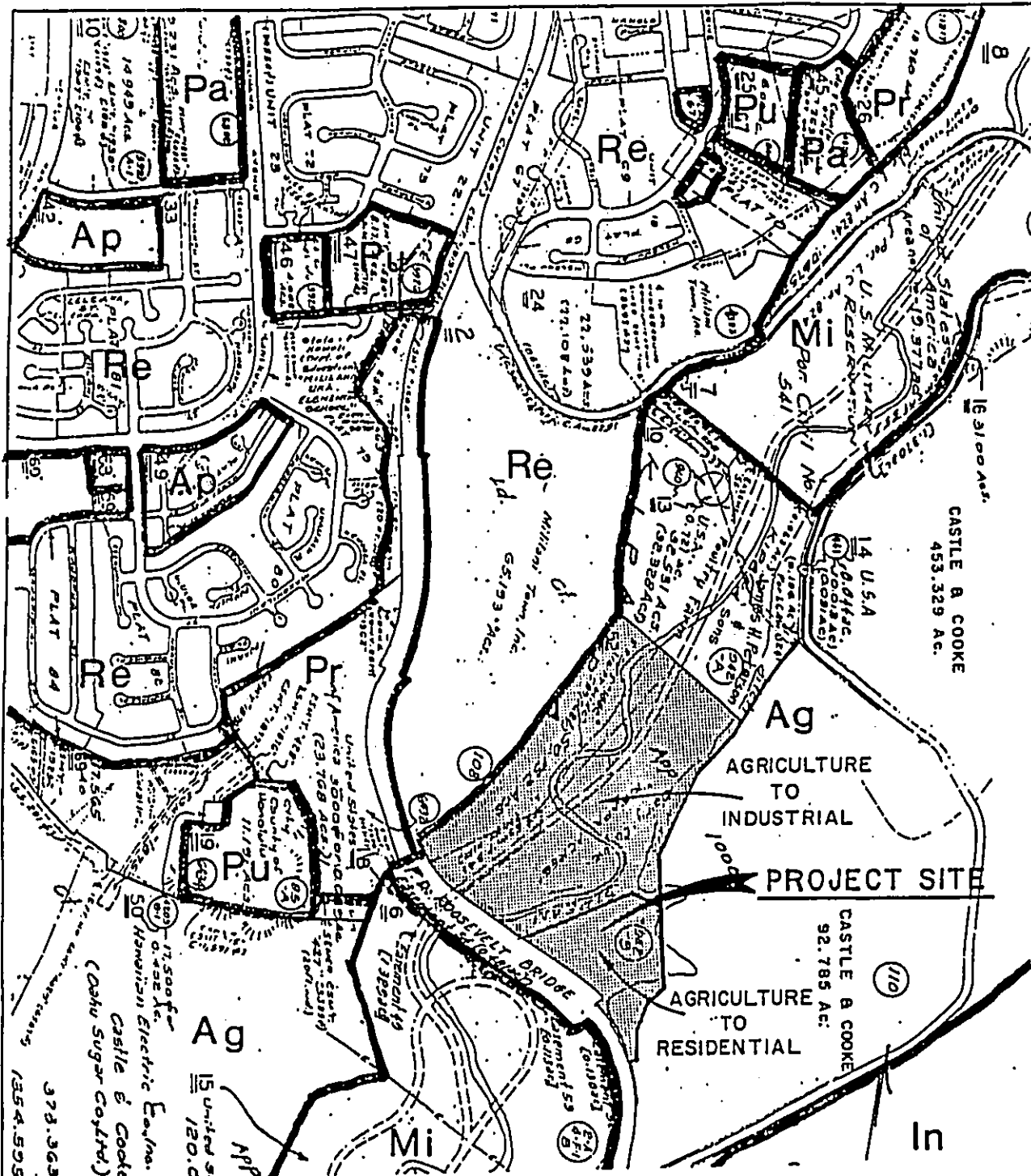
The Development Plans of the City and County of Honolulu are made up of eight sectional plans. These are detailed guidelines for the physical development of the City and County and implement the objectives of the General Plan. Descriptive narrative and maps make up the Development Plan

of each of the eight sections of Oahu. The narrative portion is made up of Common Provisions and Special Provisions while the map portion is in two parts, land use map and public facilities map. The proposed industrial park project site is within by the Central Oahu Development Plan. Figure 10 shows the Development Plan for the project vicinity. This section describes the relationship of the proposed industrial park and the Central Oahu Development Plan.

Common Provisions: Social impact factors:

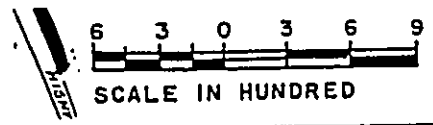
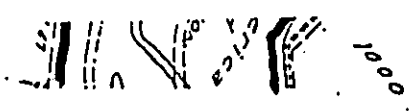
Demographic: The proposed project will not increase the residential population as no housing units are involved in this project. The proposed project will not affect the visitor population as no visitor-oriented facility is planned. The proposed project will change the character of the neighborhood by the construction of new industrial buildings. The present unkept area which now supports only a barn and a heavy equipment service facility, will be replaced with new buildings and a landscaped area. The culture of the neighborhood will be unaffected as only a small industrial park is proposed with no changes in the social aspects of the neighborhood as may affect the existing culture.

Economic: The rate and pattern of economic growth and development of the industrial park is not known at this time. However, it is anticipated that at the time the proposed industrial park is dedicated, the availability



**LEGEND**

- |                            |                            |
|----------------------------|----------------------------|
| Re = Residential           | Mi = Military              |
| Ap = Low Density Apartment | Pu = Public & Quasi-Public |
| In = Industrial            | Pa = Parks & Recreation    |
| Ag = Agricultural          | Pr = Preservation          |



PROPOSED KIPAPA INDUSTRIAL PARK

PROPOSED DEVELOPMENT PLAN AMENDMENT

FIG.10



of industrial sites within the Waipio-Gentry will be limited. With the expected continued growth in Central Oahu, the demand for industrial sites should increase substantially, particularly with the developing constrictions in the transportation network. Traffic corridor deficiencies should create a desire to establish employment centers closer to the population concentrations. The diversity of employment will be similar to other industrial parks as there are no unusual conditions attached to this proposed project. There will be no public costs inasmuch as all construction costs will be borne by the developer. The proposed industrial park is expected to create over 300 jobs and increase the tax assessment value of the land from \$1.2 million to over \$8 million. As to the availability of jobs, the potential 300+ jobs will involve relocated jobs as well as new jobs. There is strong likelihood that Central Oahu residents will find job opportunities here. The proposed industrial park is small compared to other recent developments and will complement rather than compete with other major industrial centers such as Sand Island, Campbell Industrial Park, Gentry-Waipio and Halawa.

Housing: The proposed project will not affect the housing inventory. Nor will it affect the speculation in land and housing as the development is small in relation to other development projects in Central Oahu and is located in an isolated area. No housing

development is associated with this project. The existing low rental homes will remain status quo.

Public Service: These have been discussed in Section 3 of this report.

Physical and Environmental: These have been discussed in Section 1 and Section 3 of this report.

Special Provisions: Section 1: Area description.

Manage physical growth and development in the urban-fringe areas so that:

a. An undesirable spreading of development is prevented, and

b. Their proportion of the island wide resident population remains unchanged.

Comment: The project site is located between two growth areas: Mililani Town on the north and Waipio-Gentry on the south. The proposed industrial park can be viewed as an infill project between two growing urban areas. The site was formerly used as a dairy operation and most of the area was shown on the University of Hawaii's Land Classification Study as an urban use. The land was not used for the cultivation of crops or pasturing so the introduction of an industrial park could be viewed as an extension of the previous intensive dairy operations. The proposed project does not entail the expansion of the existing residential density. The proportion of the island wide resident population for Central Oahu will not be affected by this project and remain unchanged.

The Development Plan maps are in two parts:

Land Use Map: The area of the proposed project is designated agriculture.

Comment: As noted above, the dairy operations had been designated as an urban use by the Land Classification Study.

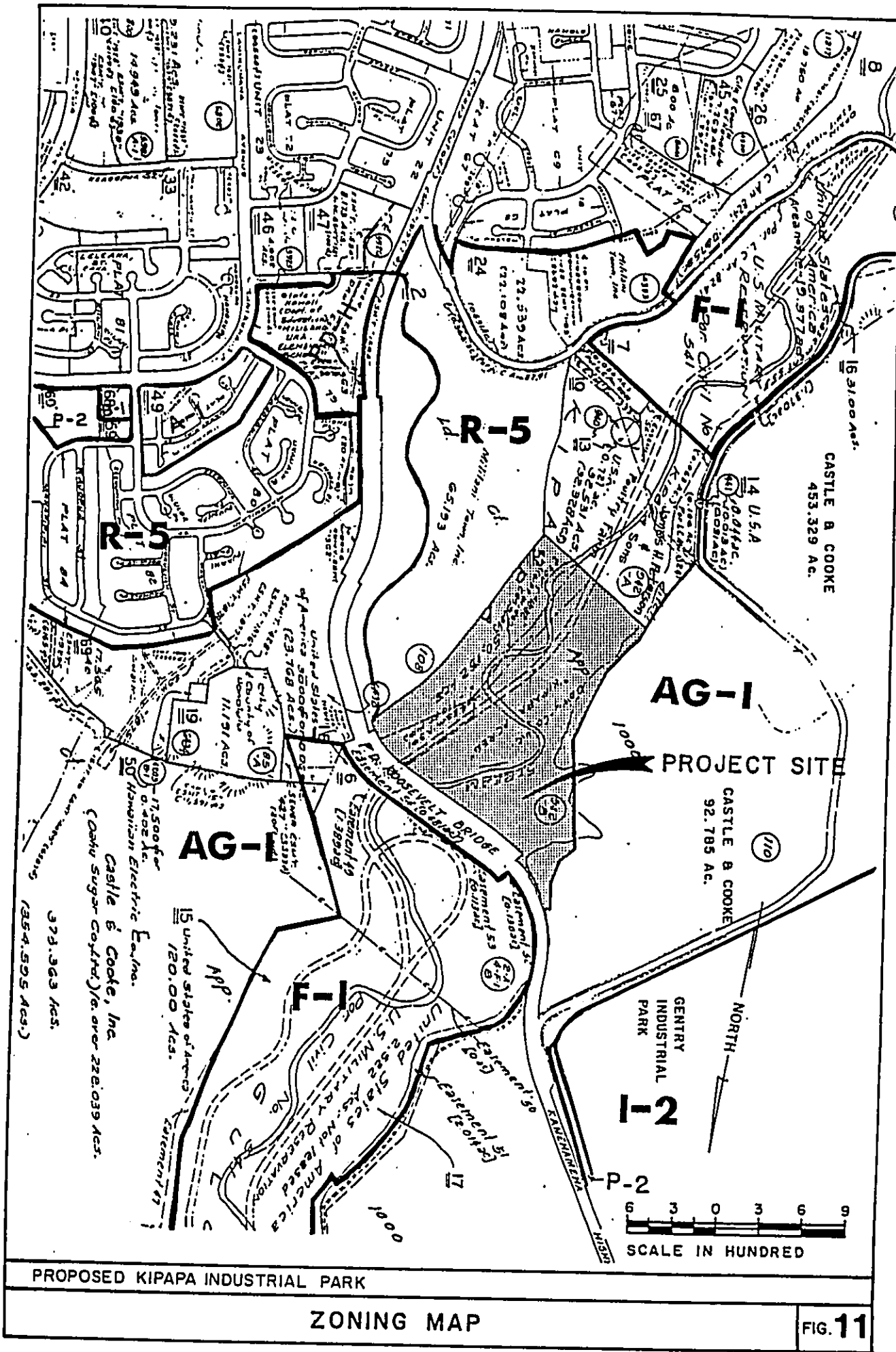
Public Facilities Map: N/A

Comment: There are no public facilities existing or proposed on this site

Land Use Ordinance (LUO):

The final and specific land use regulation is the Land Use Ordinance (LUO) of the City and County. The LUO is to regulate land use in a manner that will encourage orderly development in accordance with adopted land use policies, including the General Plan and Development Plans.

Comment: The zoning for the project site is AG-1, Restricted Agricultural District. The zoning change from AG-1 to I-1, Limited Industrial, will be the final step in the land use change process and will be pursued at the appropriate time. Figure 11 shows the zoning of the project area.



SECTION 5  
RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT  
AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The project site is under utilized at present. The attempt to continue some sort of agricultural enterprise has met with little success. The only permanent tenant to move into the area was a heavy equipment service firm. The present request for land use change appears to be timely in view of the significant changes to the Central Oahu land use pattern.

The short-term effects include the construction impacts which are of temporary nature, to wit, noise, dust and the visual aspects associated with land alteration. As the present low rental cottages will not be affected by this project, there will be no displacements of persons.

The long term effects on the environment are adequately covered by government regulations such as for disposal of wastewater and erosion control; the insular location of the industrial park will not disturb existing communities; there will be no loss of any historic structure or feature; and no recreation area will be affected.

The long term benefits arising from this project would be the industrial use of idle or vacant agricultural lands; increase in the industrial land availability in Central Oahu; to provide an alternative choice for established firms being relocated from redevelopment projects such as Kakaako; new job opportunities for residents of Central Oahu; increased property tax due to the rise in assessment value attributed to the new urban land use classification; and additional excise tax from new firms that

will establish here.

The proposed action does not significantly reduce the state of the environment for the future.

SECTION 6  
IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The project as proposed will transform agricultural based land into an urban industrial use. The acreage change from agriculture to urban involves 20 acres, more or less. This is small compared to other land uses changes in Central Oahu. Nonetheless, the urban conversion of agricultural land can be considered as irreversible inasmuch to the cost to restore such land would not be economical.

Since the site is devoid of rare and/or endangered species, and no archaeological feature has been found on the property, there will be no irretrievable loss of such items of ecological value.

The commitment of capital to underwrite the project and the cost of labor and materials to develop the industrial park are non-renewable and irretrievable.

SECTION 7  
PROBABLE ADVERSE IMPACTS AND MITIGATION MEASURES

1. **FLOODING:** The project site has experienced no flooding during the past 19 years according to the owner. Since the site is in the agricultural district, no FEMA assessment was made of this particular site for the Flood Insurance Rate Map. However, from information received from the U.S. Geological Survey, Kipapa Stream gage has recorded high flows in the past. Based on records of the past 21 years, the maximum flow at the gaging station upstream of the project area was 5,680 cubic feet per second. The stream at the project site has a greater drainage area and as such higher stream flows can be expected. Based on this information, a preliminary engineering study was carried out to ascertain the flood parameters of the project site. Please refer to Appendix E for a more detailed analysis.

The project area as situated today, will be subject to flooding from a 100-year storm.

Mitigation Measures: The project area can be protected by a drainage channel as proposed by the engineering consultant in Appendix E. The drainage channel will widen the existing stream cross section and be constructed with concrete lining. It will begin above the poultry farm to intercept the high stream flows to prevent inundation of the project site. Such drainage structures will be constructed in accordance with applicable City standards with concurring approvals from the U. S. Corps of Engineers and the State Water Commission.

2. **TRAFFIC:** The traffic on Kamehameha Highway has



increased due to primarily to growth in Central Oahu. State Highway records show that traffic on Kamehameha Highway was drastically reduced by the opening of Interstate Highway H-2. The pre- H-2 traffic count of 37,7735 vehicles per day was cut in half. The traffic count since then has slowly risen to about 20,000 vehicles per day.

Kamehameha Highway over Roosevelt Bridge is a two lane road and according to State Highway engineers, adequate to handle all legal loads that utilize State Highways. The peak hour morning and afternoon traffic makes it especially hazardous for left turns into and out of the area. An analysis of this traffic condition is contained in Appendix F. The State Department of Highways has long-range plans for future widening of Kamehameha Highway. The recommendations of the consultant are:

- a. In the short-term, restrict turning movements at the intersection to right turns in and right turns out; restripe Kamehameha Highway at the bridge to allow additional shoulder area on the east side to improve the visibility of northbound vehicles for vehicles exiting the site. Intersection warning signs should also be provided for northbound highway traffic.
- b. Monitor traffic conditions and volumes from the project as it develops to determine if traffic signals are needed. When warranted, signalize the intersection and allow left turns out of the site; provide advance warning of the signal, including flashing lights, as needed.
- c. Access to the site should be maintained through a new

connection when Kamehameha Highway is widened.

Mitigation Measures: Adopt the recommendations of the consultant as listed above. It should be noted that traffic into and exiting the proposed project site exists and could increase even without the proposed industrial park. Therefore, a solution to the traffic problem is important for present and future tenants of the project site.

If the project is approved, steps will be taken, with the approval of the State Highways Division, to improve the access road to Kamehameha Highway. This will be an interim measure; the final design will be in coordination with the State once the route of the Kamehameha Highway realignment is determined.

Recommendation b stated above could be more properly addressed during the Kamehameha Highway improvement project.

The improvement plans for Kamehameha Highway in this section are preliminary in nature. Construction date is undetermined at this time and, hence, the final access design to Kamehameha Highway from the project site is an unresolved issue.

3. WASTE DISPOSAL: The secluded location of the project site at an elevation considerably lower than the existing sewer trunk line will require a high lift pump station and lengthy force main to discharge into the existing sewer manhole on Kamehameha Highway at Waipio-Gentry. Connection to the nearby Mililani Town wastewater facility is not feasible due to its limited capacity.

Mitigation Measure: Adopt the engineer's recommendation as contained in his report shown in Appendix E. A lift station will

be designed to pump wastewater from the project site and discharge into the sewer manhole on Kamehameha Highway. The wastewater system including the pump station will be constructed to City & County standards and dedicated to the City & County upon completion.

4. WATER RESOURCES: The project site is located in the Pearl Harbor Groundwater Control Area. Since the consultants' for the State have recommended a decrease in water use to establish a new sustainable yield, the State Commission on Water Resource Management is reviewing the consultants' report. Water uses need to be reassessed.

Mitigating Measure: The project site has long been served by its own private water system. The historical usage of water will not be exceeded. The estimated 100,000-gallon per day requirement is less than what was consumed by the dairy operations. In this respect, a water use permit for the industrial park will not exceed its historical usage.

The improvements to the existing privately operated system will include drilling of a second well for dependable service and installation of larger pipeline and storage tanks to provide domestic as well as fire protection services. The improvements to the system must be approved prior to commencing work by the Department of Health; said improvements will be designed by a registered professional engineer.

5. AGRICULTURE: The industrial park will displace 20 acres of agricultural lands. While the soils have been rated prime (ALISH), its agricultural value has been diminished by its location within Kipapa Gulch. While the sugar and pineapple

companies used this land in the past, its limited utility based on its location within Kipapa Gulch resulted in its conversion to an urban-type dairy operations. Now that the dairy operations have been discontinued and no other agricultural prospect for use of the site has been found, the request for development of an industrial park has been deemed appropriate.

It should be noted that much of the 50.152 acres of the parcel is unsuited for agriculture. Approximately 10+ acres are within an old quarry site while 20+ acres represent the steep untillable pali walls and a short portion of Kipapa Stream.

Mitigating Measure: The land, in recent years, has not supported any agricultural enterprise which was based on the soil classification of the area. No loss of agricultural produce will result from the land use change requested since agricultural produce or crops have not been cultivated on the site for over 30 years.

6. NOISE: The development of the industrial park will result in increased traffic into the area. More traffic will result in vehicular noise. The nearest residences will be above the gulch in the Mililani Town, Unit 19, now under construction. There will be a buffer zone setting back the residences from the edge of the pali. The noise from the daily projected 1,321 vehicle trips that may be generated by the project is less than the noise that is expected from the 20,000+ vehicle count on Kamehameha Highway which would be closer to the residences.

Mitigating Measure: During construction, the contractor will be required to comply with provisions of the Community

Noise Control For Oahu regulation.

The probable noise that may impact upon the new residences above Kipapa Gulch in Unit 19 of Mililani Town will be lessened by the buffer zone which parallels the upper edge of Kipapa Gulch and which is part of the Mililani Town construction plans. Further, being an industrial park, the normal working hours will be 7:00 a.m. to 5:00 p.m. and little or no work will occur during the evening hours when noise impacts are magnified.

To minimize potential excessive noise levels, operating equipment such as exhaust fans, air conditioning units, compressors, and other such equipment will be required to have noise-muffling design or to place such equipment in sound muffling compartments.

As noted earlier, businesses that are known to generate excessive noise levels will not be permitted into the park. If any doubt exists, a noise level study will be a requirement to ensure compliance with existing regulations before locating in the industrial park. This step will be taken to exclude firms which may generate excessive noise levels such as an auto shredding plant with loud compressors and jack hammers and those with large generators or machinery exposed directly to the outdoors.

7. ARCHAEOLOGICAL FEATURES: No records or information have been found relating to possible archaeological structure or feature that may be found on the project site. The heavy and long use of the project site for agriculture and dairy operations precludes the presence of any surface or near sub-surface archaeological remains. However, the possibility exists that

archaeological remains maybe unearthed during construction. A reconnaissance survey was conducted by staff from the Bishop Museum. A summary of their findings and recommendations is shown in Appendix H. While no archaeological features were observed during the survey, the probability for subsurface deposition in their former flood plain area exists. Also, the existence of lava tubes in the pali wall outcrop faces may contain archaeological remains.

Mitigating Measure: Upon approval and prior to any construction, systematic backhoe trenching of selected areas will be conducted to verify the presence of archaeological remains, if any. While no work is called for regarding the steep gulch walls, a more thorough search of these pali walls for lava tubes will be instituted simultaneously. Should any historic or archaeological remain be exposed during the investigation described above and during construction, the procedures called for by the State Historic Preservation Office will be carried out.

8. AIR QUALITY: During construction, dust can be expected. However, this will be of temporary nature.

Mitigating Measure: Water sprinkling will be regularly carried out to hold down and control dust generated by construction activity. Conformance with regulations of the Department of Health will minimize adverse impacts caused by construction equipment.

The adjoining poultry farm will generate odor commonly associated with such an enterprise. The lots nearest the poultry

farm can be expected to be exposed to such malodorous impact, especially following wet weather and downwind conditions. Since the poultry farm will pre-exist the industrial park, tenants of the park will have to accept the status quo. The Hawaii Right-to-Farm Act, (Chapter 165, HRS) states:

No court, official, public servant, or public employee shall declare any farming operation a nuisance for any reason if the following have been proven:

1. That the farming operation was not in violation of this section at its established date of operation;
2. That the stated or implied basis for the nuisance complaint is that conditions have changed in the vicinity of the farming operations since its established date of operation;
3. That the farm operation was lawfully in operation for at least one year prior to the nuisance complaint;
4. That the alleged nuisance did not result from the negligent conduct or improper operation of the farming operation; or from any aspect of the operation which is determined to be injurious to public health or safety; and
5. That the alleged nuisance does not involve water pollution or flooding.

Mitigating Measure: The tenants nearest the poultry farm are expected to air-condition their facility if they object to the malodorous impact of the poultry farm. The open portions of buildings can be sited to face downwind to minimize impact from odor. Trees will be planted along the boundary separating the poultry farm from the industrial park. While primarily for aesthetic purposes, this will assist in reducing wind blowing downwind into the industrial park.

The industries that locate in the project site could directly impact the long-term air quality.

Mitigating Measure: As described earlier, screening of

prospective tenants of the proposed industrial park will be conducted to ensure compliance with existing regulations. Due to the location of the project next to an important highway and the unusual topography of the site, screening of the prospective tenants will be a pre-condition to entry into the proposed park to exclude industries that will generate excessive emissions contributing to significant deterioration of air quality.

Emissions from vehicular traffic associated with the proposed project when at full occupancy will result in long-term, indirect impacts on the local air quality. State air quality standards for carbon monoxide could be exceeded in a small "hot spot" area near the intersection of Kamehameha Highway and the project access road if the intersection is unsignalized. This would be due primarily to the long delays for vehicles exiting the project site during the afternoon. National air quality standards will not be exceeded, however. Refer to Appendix G for details.

Mitigating Measure: Work with the State Highways Division for signal lights at the access road intersection. The installation of signal lights, intended as a safety feature, apparently will provide another plus benefit in that air quality impacts will be reduced and not exceed the State standards.

9. EROSION: The industrial park site is covered by a restrictive clause in the deed which reserves water rights to Kipapa Stream and protects the quality of streamflow. The clause specifically states: to use all reasonable efforts to avoid, or will cause its tenants to use all reasonable efforts to avoid, any silting resulting from any concentration of run-off waters on said Lot.



Mitigating Measure: Comply with City and County erosion control standards to prevent siltation of Kipapa Stream. The engineering design will include drainage control and in this respect the project will have less impact on Kipapa Stream than when it was used for dairy operations with 400 to 800 head of cattle on the property with no engineering design to control surface run-off from the property. The design shall comply with Chapter 23: Grading, Soil erosion and Sediment Control of the Revised Ordinances of Honolulu, and the Soil Erosion Standards and Guidelines of the Department of Public Works.

The pali walls are expected to remain untouched. This is to preclude accelerating erosion of the pali walls. Tenants will be encouraged to maintain the growth of trees, shrubs and grasses to minimize slope erosion. Each lot owner will be responsible to maintain his section and, if necessary, take steps to reduce the effects of erosion. The east pali slope is heavily vegetated and erosion appears to be minimal. The west pali wall is less vegetated and some erosion could result. This has been mitigated to a great extent by the development of Unit 19 of Mililani Town. Most of the surface run-off from the mauka area will be diverted elsewhere and erosion effects of the west slope will be greatly reduced.

10. FIRE HAZARD: The location of the Air Force fuel tanks about a half a mile away has been mentioned as a potential fire hazard. Another potential fire hazard is the vegetation of the area during dry weather conditions.

Mitigating Measure: The distance from the fuel tanks, about

a half a mile distant, lessens the impact of potential fire impact from this source. Since the fuel tanks will be separated from the proposed industrial park by the poultry farm, fire hazard from this potential source is mitigated by the distance.

The industrial park will be constructed to City standards, and hence, fire protection not available now will be provided to the general area upon completion of the project including the poultry farm.

Further, since the fuel tank facility was constructed in the early 1940s, it can be expected that new rules governing fuel tank installations will result in improvements to the existing facility lessening the impact from potential fire or fuel spill.

11. HAZARDOUS WASTE AND UNDERGROUND FUEL TANKS: The location of the project next to Kipapa Stream may result in spills or leaks of toxic materials entering the stream.

Mitigating Measure: Firms may generate hazardous waste or require underground storage tanks. The screening process for prospective tenants will exclude those known to generate hazardous waste of such magnitude so as to pose a threat to the environment or through accidental spills and leaks cause toxic materials to enter Kipapa Stream. It is not intended that the park exclude firms that generate or utilize hazardous material in its operation as this will preclude nearly all industrial firms from locating in the industrial park. Rather, those firms that pose a threat due to the magnitude of hazardous material use or waste generation will be screened out. Similarly, this is not to deny firms which may require fuel storage for its use; however, the project is not intended for sizeable storage of fuel or other

such material.

All such activities are to conform to the Resource Conservation and Recovery Act. Those firms that may generate hazardous waste will be under applicable Federal Regulations: 40 CFR Parts 260 to 270. Underground fuel and hazardous material storage tanks will be subject to 40 CFR Parts 280 and 281.

SECTION 8  
SUMMARY OF UNRESOLVED ISSUES

The unresolved issues which are associated with this project can be described as follows:

1. Water Use Permit: While the property owner has operated his own private water system which was first installed in 1957, he has not filed his declaration of water use to "grandfather" his usage of water from the Pearl Harbor Ground Water Control Area. A water use permit application has been filed with the State Water Commission for water use connected with this proposed industrial park project. A decision is pending.
2. Wastewater Disposal: According to the City and County Department of Public Works, the capacity of the Honouliuli Wastewater Treatment Plant is reaching its design load. Connections to the system are being taken on a "first come, first served" basis. The proposed industrial park may be affected by this arrangement.
3. Land Use Boundary Amendment: Before any firm plans can be made following approval for the Development Plan Amendment, a Land Use Boundary Amendment must be obtained from the State Land Use Commission for re-classifying the site from Agricultural to Urban.
4. Kamehameha Highway Improvement: Only preliminary plans for the Kamehameha Highway improvements are available, and these are subject to change as to the final alignment. The plans viewed have been preliminary in nature. As such no definitive access for the industrial park project can be

planned at this time. Funds for the project have not been appropriated and the construction date for starting the Kamehameha Highway improvements is presently undetermined.

SECTION 9  
AGENCIES, ORGANIZATIONS AND PERSONS CONSULTED

The following were notified, contacted or consulted in the preparation of this Environmental Impact Statement:

**Federal:**

- U.S. Air Force
- U.S. Army Corps of Engineers
- U.S. Department of Interior
  - Geological Survey
  - Fish and Wildlife Service
- U.S. Soil Conservation Service

**State:**

- Department of Agriculture
- Department of Land & Natural Resources
- Department of Health
- Department of Business & Economic Development
- Department of Transportation
- Land Use Commission

**City & County:**

- Department of Land Utilization
- Department of Public Works
- Board of Water Supply
- Fire Department
- Police Department

**Others:**

- Senator Ron Menor
- Representative Samuel S.H. Lee
- Representative Daniel Kihano
- Councilperson Rene Mansho
- Mililani Town Association
- Waiahole Ditch Company
- Hawaiian Electric Company
- Castle & Cooke, Inc., Dole Division
- James Peterson & Sons
- Gentry-Waipio Joint Venture
- Mililani/Waipio/Melemanu Neighborhood Board 25
- Waipahu Neighborhood Board 22
- U.S. Department of Defense
- 12 Families on the Property
- Hawaiian Telephone Company

**Note:** OEQC distributed 47 additional copies of the draft EIS and additional comments were received. See Appendix I.

SECTION 10  
LIST OF APPROVALS AND PERMITS

APPROVALS

Development Plan Amendment

AGENCY

Department of General Planning  
City & County Council

Land Use Boundary Amendment

State Land Use Commission

Zoning Amendment

Department of Land Utilization  
City & County Council

PERMIT

Permit to Perform Work  
on State Highways

State  
Department of Transportation

Grading and Erosion Control

City & County  
Department of Public Works

Stream Improvements

City & County  
Department of Public Works

Water Use Permit

State Commission on  
Water Resource Management

Well Water Use

State  
Department of Health

Subdivision Approval

City & County  
Department of Land Utilization

Construction Plans

C&C: Public Works  
Building Department  
Fire Department  
Board of Water Supply  
State: Transportation  
Health  
Water Commission  
Federal: Corps of Engineers

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# Appendix A

MARKET ANALYSIS

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Report to

Dairy Company, Inc.  
c/o Mr. William Y. Thompson, Consultant

Covering

KIPAPA INDUSTRIAL PARK

Waipio, Ewa, Oahu, Hawaii

December 1988

john  
child

& COMPANY, INC.

---

REAL ESTATE  
APPRAISERS &  
CONSULTANTS

---



REAL ESTATE APPRAISERS & CONSULTANTS

& COMPANY, INC.

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of the Pacific  
130 Merchant Street.  
Suite 1040  
Honolulu, Hawaii 96813

Telephone  
(808) 533-2951

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(808) 523-7672

December 15, 1988

Mr. William Y. Thompson  
98-1051 Kahapili Street  
Aiea, Hawaii 96701

Dear Mr. Thompson:

At your request, John Child & Company, Inc. has completed our assessment of the market support for the proposed industrial subdivision at Kipapa Gulch, Waipio, Ewa, Oahu, Hawaii. This letter summarizes the principal findings and conclusions of our study, which are discussed in detail in the accompanying report.

#### BACKGROUND

Dairy Co., Inc. (Dairy) owns the fee simple interest of the 50.152-acre property located in Kipapa Gulch, Waipio, Ewa, Oahu, Hawaii. The property is identified as tax map key 9-4-05:02 of the First Taxation Division. A 10.568-acre portion of the site is currently used as a low-rent housing project and is proposed to continue in that use. The remaining area is generally overgrown except for a large barn used for storage.

Dairy is seeking a Development Plan amendment to reclassify the 50.152 acres of Agricultural lands to Industrial and Residential to allow development of a proposed light industrial subdivision and continuation of the existing low-rent housing project. The light industrial subdivision will consist of about 21 lots ranging from about 0.6 to 2.3 acres in size.

Dairy has retained W.Y. Thompson, Consultant, to prepare an Environmental Impact Statement (EIS) of the proposed project as part of the Development Plan amendment process. W.Y. Thompson, Consultant, requires a market assessment of the proposed industrial lots as part of the EIS. In this regard, you have asked John Child

Robert J. Vernon, MAI, CRE  
Theodore Wrobel, SREA, ASA  
Karen Char, MAI

Craig T. Smith, ASA  
Usou Y. Ewart, ASA  
Paul D. Cool

Mr. William Y. Thompson  
December 15, 1988  
Page 2

& Company, Inc. to assist you by preparing market assessments of the proposed light industrial subdivision at Kipapa Gulch.

#### STUDY OBJECTIVES

The objectives of our assistance are to estimate the current and projected market support for the proposed Kipapa Industrial Park (KIP) in terms of:

1. Lot sizes and characteristics
2. Typical sales prices
3. Projected annual absorption.

The purpose of our assistance is to provide market assessments and supporting data which can be incorporated as part of the EIS for the proposed Kipapa Industrial Park.

#### STUDY APPROACH

Our assessment involved the following tasks:

1. Review preliminary development plans for KIP.
2. Assess the current and projected demand for light industrial lots in Central Oahu and Ewa.
3. Identify existing, planned and proposed competitive developments.
4. Evaluate the historical, current, and projected market performance of competitive industrial developments.
5. Analyze the competitive advantages and disadvantages of the proposed KIP.
6. Estimate the appropriate lot characteristics (pricing, sizes and configuration) for light industrial lots in KIP.
7. Project the annual market share and absorption for light industrial lots in KIP.
8. Prepare a draft summary report outlining our research, analysis and assessments.

Mr. William Y. Thompson  
December 15, 1988  
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#### INDUSTRIAL LAND MARKET REVIEW

The demand for industrial land on Oahu, especially in the Halawa to Waipio area, is very strong, as indicated by the relatively rapid absorption rates experienced in recently developed light industrial parks and the escalating land prices for industrial sites.

The current industrial land market is generally characterized as follows:

1. Oahu has 22 industrial areas and most recent development has been located in the Halawa to Waipio area of Leeward Oahu.
2. The most recently marketed industrial subdivisions include Gentry Business Center Phase II (Gentry), Bougainville Commercial Center (Bougainville), and Halawa Business Park (Halawa). Bougainville and Gentry are essentially out of inventory, and Halawa, scheduled for completion in December 1988, has all 64 lots in escrow.
3. The Halawa Business Park is the most recent industrial subdivision to be marketed on Oahu. The 64 lots comprise 34 acres of usable pad area. The project began marketing in November 1987, and all lots were sold by October 1988. Prices were increased by 15% during the 12-month marketing period.
4. Demand for industrial land on Oahu based on projections of future employment indicates that this absorption rate should continue in the future. While the growth rate of employment in the industrial sectors is projected to slow over the remainder of the century, there will be continued demand for industrial land for construction, warehousing, wholesale distribution, manufacturing, and transportation.
5. Land prices for industrial sites have increased by about 25% over the past two years because of a relatively small supply of developable land, a good economy, and lower interest rates. Current fee simple prices in industrial subdivisions closest to KIP are summarized as follows:

<u>Industrial area</u>	<u>Price/Ⓕ</u>
Gentry Business Center	\$18.00 to \$20.00
Waipahu Industrial Park	20.00 to 22.00
Pearl City Industrial Park	14.00 to 16.00
Mililani High Tech. Park	11.00 to 14.00
Campbell Industrial Park	9.00 to 10.00

6. The majority of the recent purchasers of industrial sites have been owner-users. While investors are still in the market, the escalating rents for industrial space, continuing displacement of industrial users from inner-city locations, and desire for expansion area, is motivating industrial space users to purchase their own property. This trend is projected to continue in the future provided there is sufficient inventory of developable industrial land suitable for their purposes.

#### PROJECT MARKET ASSESSMENT

The proposed Kipapa Industrial Park is located in close proximity to the existing residential communities of Mililani, Waipio by Gentry, Crestview, and Seaview. The site is located in the middle of the proposed residential developments of Mililani Mauka, Waiawa Ridge, and Waikele. Assuming the project is marketed in 1990, the following market performance is projected:

1. The project should offer lots with about 10,000Ⓕ to 20,000Ⓕ of usable lot area. The usable area should be either square or rectangular in shape, and the lots should have good access from the fronting roadway.
2. The lots should be sold in fee simple and priced at \$14.00 to \$16.00 per square foot of usable lot area (current dollars). The fee simple tenure of the project is a major advantage because owner-users prefer fee simple property to leasehold property. This is because owner-users would like to avoid the uncertainty of renegotiated lease rents.
3. Smaller lots priced at these levels would sell for less than \$200,000. This price range is well within reach of many small industrial tenants who cannot afford to purchase larger acreage sites. No other industrial subdivision is offering fee simple lots within this price range.

Mr. William Y. Thompson  
December 15, 1988  
Page 5

4. The project is projected to be sold-out in about one year. This is based on the absorption rates experienced in other industrial parks, continued demand for industrial land projected for the Central Oahu/Ewa area, and the competitiveness of KIP in relation to future competition from existing and proposed industrial subdivisions.
5. The project location at the bottom of Kipapa Gulch precludes users requiring a degree of prominence and advertising exposure. The relatively steep grade (about 12%) of the access road may also discourage wholesale distributors and other users of large containers. However, construction, transportation and selected manufacturing operations could probably be attracted to the project. These users do not need the advertising exposure, would not consider the road grade a constraint, and may maximize the advantage of the lower land price because of the need for open yard storage.

\* \* \* \* \*

We appreciate having the opportunity to assist you and Dairy Co., Inc. in the planning of this project.

Very truly yours,

JOHN CHILD & COMPANY, INC.

  
Robert J. Vernon, MAI, CRE  
Chairman

  
Wason Y. Ewart, ASA  
Appraiser

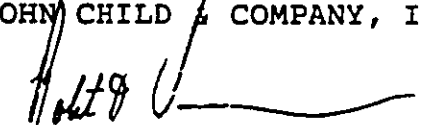


CERTIFICATION

We certify, to the best of our knowledge and belief:

1. Statements of fact in this report are true and correct.
2. Reported analyses, opinions and conclusions are limited only by the reported assumptions and limiting conditions and are our unbiased professional analyses, opinions and conclusions.
3. We have no present or prospective interest in the property which is the subject of this report, and we have no personal interest or bias with respect to the parties involved or the subject matter of this report.
4. Our compensation is not contingent on an action or event resulting from the analyses, opinions, or conclusions in or the use of this report.
5. Our analyses, opinions and conclusions were developed and this report conforms with the requirements of the Code of Professional Ethics and Standards of Professional Practice of the American Institute of Real Estate Appraisers (Appraisal Institute), International Society of Real Estate Appraisers (Society) and American Society of Appraisers (ASA), and the use of this report is subject to the requirements of these professional organizations relating to review by its duly authorized representatives.
6. The Appraisal Institute has a voluntary continuing education program. Robert J. Vernon, MAI is currently certified under this program.
7. Mr. Ewart made a personal inspection of the property which is the subject of this report.
8. No one other than the undersigned prepared the analysis, opinions and conclusions in this report.

JOHN CHILD & COMPANY, INC.

  
Robert J. Vernon, MAI, CRE  
Chairman

  
Uson Y. Ewart, ASA  
Appraiser

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## I - INTRODUCTION

John Child & Company, Inc. was retained by Mr. William Thompson, Consultant, on behalf of Dairy Co., Inc. to prepare a market analysis covering the proposed light industrial subdivision located in Kipapa Gulch just below Roosevelt Bridge, between Mililani Town and Waipio by Gentry. This report presents our findings and conclusions covering the market potential for the proposed project.

### BACKGROUND

Dairy Co., Inc. (Dairy) owns the fee simple interest of the 50.152-acre property located in Kipapa Gulch, Waipio, Ewa, Oahu, Hawaii. The property is identified as tax map key 9-4-05:02 of the First Taxation Division. A 10.568-acre portion of the site is currently used as a low-rent housing project and is proposed to continue in that use. The remaining area is generally overgrown except for a large barn used for storage.

Dairy is seeking a Development Plan amendment to reclassify the 50.152 acres of Agricultural lands to Industrial and Residential to allow development of a proposed light industrial subdivision and continuation of the existing low-rent housing project. The light industrial subdivision will consist of about 21 lots ranging from about 0.6 to 2.3 acres in size.

Dairy has retained W.Y. Thompson, Consultant, to prepare an Environmental Impact Statement (EIS) of the proposed project as part of the Development Plan amendment process. You require a market assessment of the proposed industrial lots as part of the EIS. In this regard, W.Y. Thompson, Consultant, has asked John Child & Company, Inc. to assist the Consultant by preparing market assessments of the proposed light industrial subdivision at Kipapa Gulch.

### STUDY OBJECTIVES

The objectives of our assistance are to estimate the current and projected market support for the proposed Kipapa Industrial Park (KIP) in terms of:

1. Lot sizes and characteristics
2. Typical sales prices
3. Projected annual absorption.

The purpose of our assistance is to provide market assessments and supporting data which can be incorporated as part of the EIS for the proposed KIP.

## PROJECT DESCRIPTION

Based upon the preliminary plot plan, the Kipapa Industrial Park is planned to include 21 lots ranging in size from 0.6 to 2.3 acres of usable area. Only about 20 acres of the 39+ non-residential acreage is considered usable. The remaining acreage is in steep slope (pali) or will be used for the access road.

The project site consists of two relatively level areas surrounded by steep slopes which form the Kipapa Gulch walls. The smaller 10+ acres of level area are located at the southeasterly corner of the site at an elevation of about 340 feet above sea level. This area is improved with 13 small cottages which were originally used for employee housing when the project site was an operating dairy. The cottages are now used as low-rent housing.

The larger level area contains about 20 acres of relatively level land along the floor of Kipapa Gulch at an elevation of about 275 feet above sea level. Kipapa Stream runs along the easterly edge of the area at the foot of the pali. A 10-foot wide underground easement for a military signal cable in favor of the U.S. Air Force traverses the area in a north-south alignment. An overhead easement for electrical transmission lines in favor of Hawaiian Electric also encumbers the property. Both of these easements are assumed to have minimal impact on the utility and development potential of the proposed project.

The existing access road into the property also provides access to the adjacent poultry farm north of the project site. The preliminary subdivision plan provides continued access to the poultry farm and assumes realignment and improvement of the access road leading from Kamehameha Highway.

## STUDY APPROACH

Our assessment involved the following tasks:

1. Review preliminary development plans for KIP.
2. Assess current and projected demand for light industrial lots in Central Oahu and Ewa.
3. Identify existing, planned and proposed competitive developments.
4. Evaluate historical, current, and projected market performance of competitive industrial developments.
5. Analyze competitive advantages and disadvantages of the proposed KIP.
6. Estimate appropriate lot characteristics (pricing, sizes and configuration) for light industrial lots in KIP.

7. Project the annual market share and absorption for light industrial lots in KIP.
8. Prepare a draft summary report outlining our research, analysis and assessments.

LIMITING CONDITIONS AND  
UNDERLYING ASSUMPTIONS

This report is subject to the following limiting conditions and underlying assumptions.

Property Description

A complete legal description was not reviewed by the appraisers. Project description was based on a report entitled "Environmental Assessment and Notice of Preparation of an Environmental Impact Statement" dated August 1987 prepared by W.Y. Thompson, Consultant, and on inspection of the property.

The analysis assumes all onsite improvements including roadways and utility services will be to City & County Standards, and that access to the project will be via Kamehameha Highway near the current access road alignment.

Basis of Analysis,  
Opinions, and Conclusions

The analysis, opinions, and conclusions of this report are our informed judgement based on market and economic conditions as of the date of the report.

We have relied on data and information provided by others. We believe the information to be reliable; however, we do not assume any responsibility for the accuracy of information provided by others.

Our analysis, opinions, and conclusions assume:

1. No hidden or unapparent surface or subsurface conditions of the property, structures, soils, subsoils, geological formations, ground water, or drainage conditions exist which would render the property more or less valuable.
2. No hazardous or environmentally dangerous materials which would have an impact on the value or use of the property are present. The appraiser did not conduct nor is aware of any investigation to determine the presence or absence of these materials on the property.

3. The client has provided us with all significant, relevant information covering the subject of this report.

No responsibility is assumed for matters legal in nature affecting the property or its title, which is assumed to be good and merchantable.

Properties in Hawaii typically include a reservation in favor of the State of Hawaii of all mineral and metallic mines. Our analyses, opinions and conclusions assume these reservations do not have an impact on the value or use of the property.

Any drawings, maps, photographs, and similar exhibits accompanying this report are included to assist the reader in visualizing the property. No responsibility is assumed for the accuracy of these exhibits.

All applicable public and private zoning codes and regulations, building and health codes, and other factors which affect the utility and value of the property were considered.

#### Terms of Assignment

Our assistance is limited to preparing this report to be used for inclusion in the Environmental Impact Statement. As a result, in accepting this report, the client specifically agrees that our findings and conclusions are solely for this purpose and that our report will not be referred to or presented to any other party for obtaining financing or any other purpose.

We have no obligation to update our report because of events and transactions occurring subsequent to the date of the report.

Neither our fees nor payment were contingent upon the results of the report.

#### Use of Report

This report may not be reproduced or published without the prior written consent of John Child & Company, Inc., and then only with proper qualification.

This report is valid only if presented in whole, with original photographs and exhibits, if any, and the official seal of John Child & Company, Inc. embossed on the letter of transmittal and certification.

This report conforms with the By-Laws and Regulations of the American Institute of Real Estate Appraisers of the National Association of Realtors, the International Society of Real Estate Appraisers, and the American Society of Appraisers.

The contents of this report, the identity of the appraisers or any reference to John Child & Company, Inc., the American Institute of Real Estate Appraisers, the International Society of Real Estate Appraisers, and the American Society of Appraisers, or to their respective designations may not be disseminated to the public through advertising media, public relations media, news media, sales media, or any other public means of communication.



## II - LIGHT INDUSTRIAL MARKET ANALYSIS

This section provides an economic overview of the State of Hawaii and the City & County of Honolulu, factors influencing the demand for light industrial land, projected demand for industrial land on Oahu, and a summary of the existing and projected supply of industrial land on Oahu.

### REGIONAL BACKGROUND

Trends in Hawaii, Oahu, and Leeward Oahu were reviewed in terms of population, employment, and economic activity. Significant trends are outlined as follows:

- Resident population of Hawaii is projected to reach 1.3 million by 1990.
- Per capita personal income in Hawaii increased at a compound rate of 7.1% annually over the 10 years ending in 1986. This is comparable to the national average.
- Gross State product and other economic indicators reflect compound annual rates of growth of 6% to 14% over the 10 years ending in 1986. Exhibit II-A summarizes selected economic indicators. Growth in the visitor and construction industries in 1987 were significantly ahead of these averages.
- Employment continues to grow fastest in retail and wholesale trade, service, and government sectors. While other sectors are expanding, the number of jobs created annually in the service sector alone exceeds the total created in all other sectors. Exhibit II-B shows Hawaii's employment by industry sector.
- Hawaii's current unemployment rate of 3.9% compares favorably to National averages.
- Resident population of Oahu is projected to increase by over 100,000 persons to 925,700 by the year 2000.
- The most dramatic growth in the past 10 to 15 years has occurred in Central Oahu. With the proposed developments at Mililani Mauka, Waiawa Ridge, and Waikele, Central Oahu will continue to attract a significant share of the growth on the island.

KIPAPA INDUSTRIAL PARK  
Major Economic Activities  
(\$ in Millions)

	1976	1985	1986	1987	Annual Change	
					1976-87	1986-87
Gross State product	\$7,933.3	\$16,813.8	\$17,995.8	19,779.5	N.A.	8.7%
Total personal income	6,223.0	14,917.0	15,991.0	17,138.0	17,373.0 [1]	9.6
Total diversified agriculture	110.1	214.9	230.0	262.0	N.A.	8.2
Diversified manufacturing	849.2	527.7	565.4	588.3	316.8	-3.3
Construction completed	1,012.0	1,429.6	1,810.0	2,084.7	1,179.4	6.8
Retail sales	3,946.4	8,957.2	9,485.2	10,052.0	5,577.8	8.9
Wholesale sales	2,911.4	6,056.5	6,391.5	7,265.0	N.A.	8.7
Visitor arrivals (thousands)	3,220.2	4,884.1	5,606.5	5,774.0	3,537.9 [2]	5.5
Visitor expenditures	1,450.0	4,900.0	5,550.0	6,600.0	N.A.	14.8

[1] The data recorded is for the 1st quarter of 1988.  
[2] The statistics recorded is from January to July 1988.

Source: Bank of Hawaii, "Business Trends."

**KIPAPA INDUSTRIAL PARK**  
**Employment by Industry Groups in the State of Hawaii**

	Annual Change				
	1976	1985	1986	1987	1976-87
Retail and wholesale trade	87,900	115,650	117,950	123,350	3.1%
Federal, State and local government	84,800	93,300	93,850	95,600	1.1
Service industries	79,900	112,650	118,750	126,350	4.3
Manufacturing	23,400	21,900	22,050	22,100	-0.5
Transportation, communication and utilities	27,100	33,200	34,200	36,650	2.8
Construction	21,400	17,150	18,650	20,950	-0.2
Finance, insurance and real estate	24,700	31,900	33,150	33,950	2.9
All other non-agricultural	24,350	33,400	34,750	35,650	3.5
Agriculture	11,050	10,400	10,150	10,550	-0.4

Source: Department of Labor & Industrial Relations, "Labor Force Data Book."

- 1985 population distribution on Oahu indicates 14.1% of the Island population in Central Oahu. As shown in Exhibit II-C, Central Oahu is one of the few areas projected to increase its percentage share of the Island population in the year 2000. The Ewa district is projected to grow the fastest over the next 11 years.

Oahu employment in the retail, wholesale, transportation, communications, and utility sectors is projected to continue to grow steadily through the year 2005. Although employment in the construction industry declined during the 1983 to 1986 period, employment in this sector is projected to increase by 7,200 over the 1985 total of 14,700 by the year 2005. The continued growth of the Oahu economy and the projected increases in these industrial sectors will result in continued demand for industrial land.

#### INDUSTRIAL LAND

Industrial land in the State is primarily concentrated on Oahu due to the market and the availability of transportation facilities and the labor force. With Oahu projected to continue as the commercial and governmental center of the State, the demand for industrial land will continue to be concentrated on the Island.

Because of the Leeward location of the airport, harbor facilities, and major employment centers, virtually all of the industrial development required to support Oahu's economic growth has been located on the Leeward side. As a result of the steady growth in Oahu's population and economy, the urbanized area has expanded and continues to expand.

The IMX - Industrial Mixed Use zoning adopted in 1986 and increasing pressures for higher-order uses in centrally located industrial areas have resulted in escalating land prices in these areas. Higher land prices have encouraged industrial development on less expensive land along the urban fringes. Industrial areas like Kakaako located in proximity to the Downtown Business District are being redeveloped with higher-order commercial uses which can support the increasing land values. The industrial users in Kakaako being displaced are either going out of business or are relocating to more remote areas.

Most of the recent industrial development on Oahu has occurred in the Halawa to Ewa area because of these market forces. These areas offered cheaper land, and new markets created by nearby residential development which encourage commercial development. New commercial activities support additional industrial development. This process is continuing, with most of the urban fringe activity located in the Central Oahu and Ewa areas.

KIPAPA INDUSTRIAL PARK  
Current and Projected Distribution  
of Oahu's Residential Population  
1985 to 2000

	1980	% of Total	1985	% of Total	2000	% of Total	Growth Rate 1980 to 1985		Growth Rate 1985 to 2000	
							Residents	Annual % increase	Residents	Annual % increase
Total Oahu	762,564	100.0%	811,096	100.0%	925,700	100.0%	48,532	1.2%	114,604	0.9%
Primary urban center [1]:	417,215	54.7	439,841	54.2	472,892	51.1	22,626	1.1	33,051	0.5
Aiea-Kipapa [2]	166,460	21.8	186,824	23.0	200,863	21.7	20,364	2.3	14,039	0.5
Rest of PUC	250,755	32.9	253,017	31.2	272,029	29.4	2,262	0.2	19,012	0.5
Ewa	35,709	4.7	36,738	4.5	71,842	7.8	1,029	0.6	35,104	4.6
Central Oahu	101,494	13.3	114,611	14.1	134,851	14.6	13,117	2.5	20,240	1.1
East Honolulu	43,241	5.7	46,029	5.7	56,089	6.1	2,788	1.3	10,060	1.3
Koolaupoko	109,373	14.3	113,769	14.0	122,788	13.3	4,396	0.8	9,019	0.5
Koolauloa	11,341	1.5	11,977	1.5	13,561	1.5	636	1.1	1,584	0.8
North Shore	12,703	1.7	13,227	1.6	15,440	1.7	524	0.8	2,213	1.0
Waianae	31,487	4.1	34,903	4.3	38,237	4.1	3,416	2.1	3,334	0.6

[1] Population projections of M-F series adjusted to H-K series by a multiplier of 1.02 as derived from the change in projections of total Oahu.

[2] Census Tracts 75.02 to 89.03.

Source: Department of General Planning, computer printouts on population estimates by development plans, 1985, Residential Development Implications of the Development Plans, 1985.

## DEMAND FOR INDUSTRIAL LAND

Historical demand for light industrial land on Oahu is difficult to quantify because all recent industrial developments have generally experienced relatively rapid absorption when priced at reasonable levels. When industrial subdivisions have offered lots for sale or lease, they have generally been absorbed within a one-year period. New industrial subdivisions have historically reflected absorption rates of 30 to 50 acres per year.

In addition, prices for industrial land have increased at rates which have equalled or exceeded price increases for other land use categories. These factors indicate that demand has generally exceeded the available supply of industrial land.

The 1983 study of Industrial Land Needs of Oahu prepared by the City & County of Honolulu Department of General Planning (DGP) concluded that "with few exceptions, industrial land prices are high throughout Oahu, suggesting that a supply deficiency may exist." While the report did not determine whether there was an adequate supply of industrial land to meet demand at any given point in time, the report made the following recommendations regarding light industrial land:

- Increase the supply of industrial land planned for light industrial uses in suitable areas. Environmental impact, land use compatibility, and public cost factors should be the primary concerns addressed in providing for the location of industrial activities within such areas. While this is unlikely to have the effect of immediately increasing the supply of industrial land, it would remove one barrier to rezoning and could introduce a greater degree of competitiveness in the pricing of existing industrial land.
- Facilitate the development of small industrial areas to serve needs in suburban and rural communities. These areas would accommodate small, light industrial enterprises not requiring a central location and service commercial activities geared to meet the needs of community residents. For some communities, the acceptability of such development may necessitate the creation of a new industrial (or commercial) zoning district with modified permitted uses and development standards as one means of facilitating its implementation.

### Projected Demand for Industrial Land

Future demand for industrial land on Oahu is directly related to the projected economic growth. The State of Hawaii, Department of Business and Economic Development (DBED) has projected growth on Oahu through the year 2010 as part of the State's long-range planning. In addition to the population and income projections,

DBED has also projected the number of future jobs which will be needed within each industry sector. Exhibit II-D summarizes the DBED Series M-K projection of employment by selected industries which would require industrial space. As shown, employment in all industry categories is projected to increase from 73,700 jobs in 1985 to 82,300 jobs by 1990, and 94,700 jobs by 2005.

Exhibit II-E details the 1985 relationship between industrial land use and employment by these selected industry categories. On an overall basis, about 0.079 acres of land was needed for each job in the selected industrial categories. The actual ratio of land to employee ranges from 0.012 acres per employee in construction to about 0.296 acres per employee in durable goods manufacturing. The ratio of land per employee is projected to remain at these levels over the projection period.

Application of these land to employee ratios to the DBED employee projections produces a projection of total land requirements for the selected industry categories. As shown in Exhibit II-F, the aggregate land requirements for the selected industrial categories is projected to increase from 5,850 acres in 1985 to 7,230 acres in 2005. This would indicate a demand for about 1,380 acres over the 20-year period or an average annual demand for about 69 acres per year.

Because the DBED model projects a slowing in the rate of growth in the Island economy, projected demand for industrial land over the next 10 years is greater than the projected demand over the 1995 to 2005 period. As shown in Exhibit II-G, annual demand for industrial land for all industrial categories is projected as follows:

<u>Period</u>	<u>Annual demand (acres)</u>
1986 - 1990	100
1991 - 1995	78
1996 - 2000	66
2001 - 2005	32

**EXISTING AND PLANNED  
INDUSTRIAL SUPPLY ON OAHU**

The most recent inventory of existing and proposed industrial parks and areas prepared by DBED in 1985 identifies 22 existing areas and 7 proposed areas. The map included as Exhibit II-H shows the locations of these areas, along with other industrial areas in the State.

KIPAPA INDUSTRIAL PARK  
 Projected Employment in Selected Industries  
 1985-2005

Industrial category	Projected Employment				
	1985	1990	1995	2000	2005
Construction	14,700	18,600	20,200	21,300	21,900
Warehousing and wholesale trade	17,100	18,800	20,300	21,500	22,400
Manufacturing:					
Durable goods	3,200	3,200	3,300	3,400	3,400
Non-durable goods -					
Food and kindred products	6,200	6,300	6,400	6,500	6,600
Other non-durable goods	6,700	6,800	7,000	7,100	7,200
Subtotal	16,100	16,300	16,700	17,000	17,200
Transportation and communication:					
Transportation	19,900	22,100	23,700	25,000	25,600
Communication	5,900	6,500	7,000	7,300	7,600
Subtotal	25,800	28,600	30,700	32,300	33,200
Total industrial categories	73,700	82,300	87,900	92,100	94,700



KIPAPA INDUSTRIAL PARK  
 Land Area to Employee Relationship  
 in Selected Industries  
 1985

<u>Industrial category</u>	<u>1985 Land area (acres)</u>	<u>1985 Employee total</u>	<u>Land area per employee</u>
Construction	184.4	14,700	0.0125
Warehousing and wholesale trade	979.3	17,100	0.0573
Manufacturing:			
Durable goods	947.0	3,200	0.2959
Non-durable goods -			
Food and kindred products	231.6	6,200	0.0374
Other non-durable goods	455.4	6,700	0.0680
Subtotal	<u>1,634.0</u>	<u>16,100</u>	<u>0.1015</u>
Transportation and communication:			
Transportation	3,015.6	19,900	0.1515
Communication	36.6	5,900	0.0062
Subtotal	<u>3,052.2</u>	<u>25,800</u>	<u>0.1183</u>
Total industrial categories	<u><u>5,849.9</u></u>	<u><u>73,700</u></u>	<u><u>0.0794</u></u>

KIPAPA INDUSTRIAL PARK  
 Projected Demand for Industrial Land on Oahu  
 1985-2005

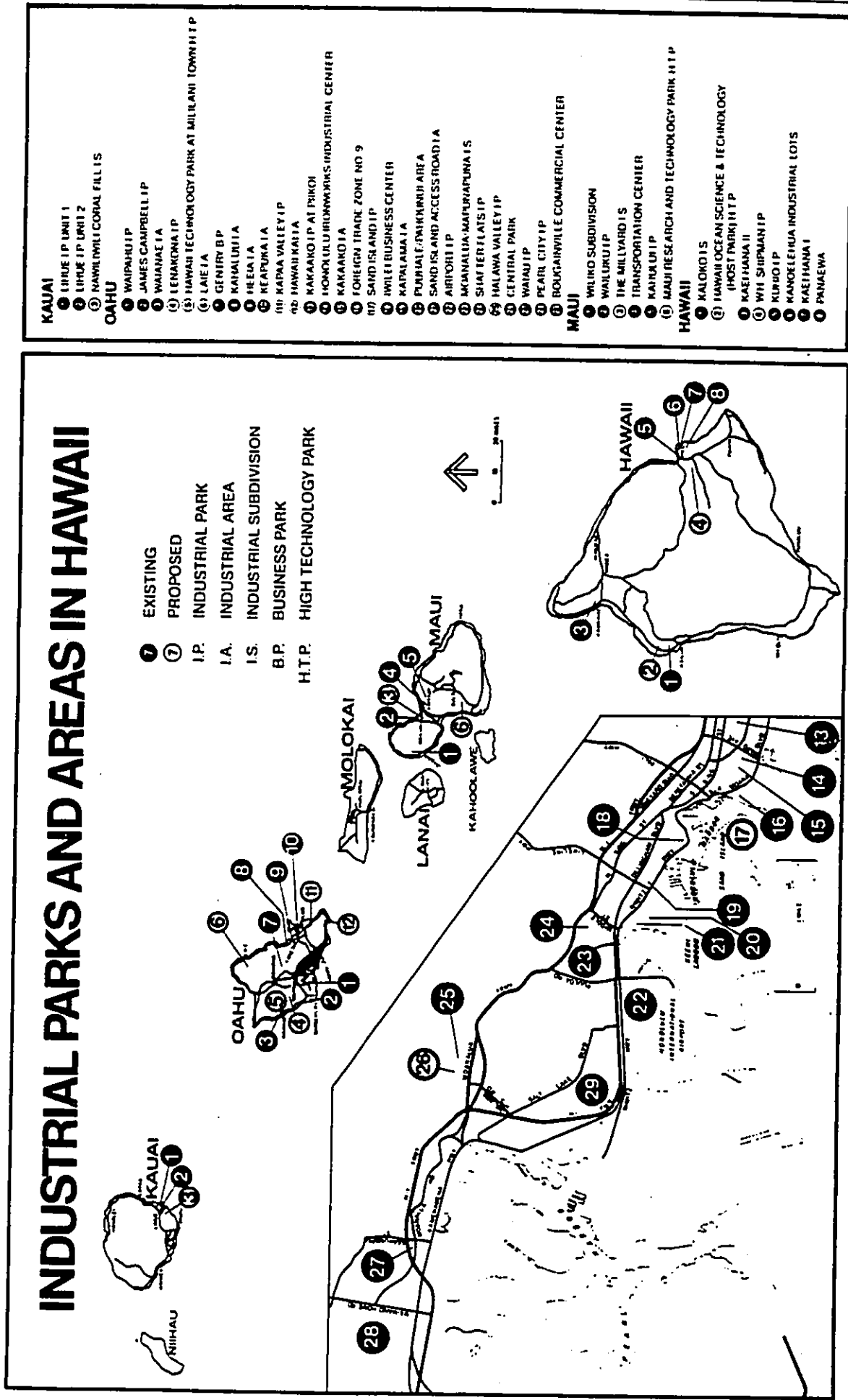
Industrial category	Land Area Requirements (Acres)				
	1985	1990	1995	2000	2005
Construction	184	230	250	270	270
Warehousing and wholesale trade	979	1,080	1,160	1,230	1,280
Manufacturing:					
Durable goods	947	950	980	1,010	1,010
Non-durable goods -					
Food and kindred products	232	240	240	240	250
Other non-durable goods	455	460	480	480	490
Subtotal	1,634	1,650	1,700	1,730	1,750
Transportation and communication:					
Transportation	3,016	3,350	3,590	3,790	3,880
Communication	37	40	40	50	50
Subtotal	3,053	3,390	3,630	3,840	3,930
Total industrial categories	5,850	6,350	6,740	7,070	7,230

Exhibit II-G

KIPAPA INDUSTRIAL PARK  
 Projected Annual Demand for  
 Industrial Land on Oahu  
 1985-2005

Industrial category	Land Requirements Per Period (Acres)			
	1986- 1990	1991- 1995	1996- 2000	2001- 2005
Construction	46	20	20	0
Warehousing and wholesale trade	101	80	70	50
Manufacturing:				
Durable goods	3	30	30	0
Non-durable goods -				
Food and kindred products	8	0	0	10
Other non-durable goods	5	20	0	10
Subtotal	16	50	30	20
Transportation and communication:				
Transportation	334	240	200	90
Communication	3	0	10	0
Subtotal	337	240	210	90
Total industrial categories	500	390	330	160
Annual demand (other)	100	78	66	32

KIPAPA INDUSTRIAL PARK  
Location Map of Industrial Areas in Hawaii



Our analysis reviewed the current status of the proposed areas and any additional industrial areas not listed in the 1985 inventory. Selected industrial areas which have been recently marketed or would comprise part of the future supply of industrial land on Oahu are discussed as follows.

#### Existing Industrial Areas

Recent development of industrial areas on Oahu have been concentrated in the Leeward, Central and Ewa Districts of Oahu because of the cost and availability of land and the shift in resident population to the Central Oahu and Ewa areas. Exhibit II-I summarizes selected existing industrial areas within these districts. The selected industrial areas are discussed as follows:

- Mililani Technology Park - Completed in 1987, this fee simple industrial park has a campus-like atmosphere and is oriented to high technology research, development, and production of electronics, software, biotechnology, telecommunications, renewable energy, and pharmaceuticals. It recently was made part of Foreign-Trade Zone No. 9. As such it offers many special advantages to businesses requiring import and export of materials and products. Because of the high-tech orientation of the park, most industrial users do not qualify for space in this development. Therefore, this park will not meet the future industrial land needs of the majority of the industry categories on Oahu.
- Gentry Business Park - This fee simple, master-planned development also includes underground utilities and a campus-like atmosphere. The development has attracted a mix of light industrial and commercial users. Most of the 120 acres has been sold and developed. Last year, Gentry stopped selling vacant lots and is currently offering design/build-to-suit space. Current land prices, if available, would range from \$20 to \$23 per square foot.
- Waipahu Industrial Subdivision - This fee simple industrial area is located makai of Farrington Highway in Waipahu. Comprised primarily of warehouse and distribution businesses, this area is improved with a mix of old and new warehouse facilities. There are no vacant, undeveloped properties in this subdivision. Recent sales have involved the redevelopment of properties with more intense or higher-order uses. Current sales indicate land prices of about \$20 to \$22 per square foot for properties located off Farrington Highway.

**KIPAPA INDUSTRIAL PARK**  
 Selected Industrial Areas in  
 Leeward, Central and Ewa Districts

Industrial area	Location	Opened	Zoning	Land tenure	Area (acres)	Number of lots
Mililani Technology Park	Mililani Mauka	1987	I-1 [1]	Fee simple [2]	256 [3]	NA
Gentry Business Park	Waipio by Gentry	1979	I-1	Fee simple	80	75
Waipahu Industrial Park	Waipahu Town	1960	I-1	Fee simple	103	103
Campbell Industrial Park	Barber's Point	1958	I-2	Leasehold	1,314 [4]	NA
Pearl City Industrial Park	Waiawa Valley	1976	I-1	Fee simple	34	41
Bougainville Commercial Center	Halawa Valley	1981	I-1	Leasehold	35	48
Central Park	Halawa Valley	1979	I-1	Leasehold	33	58
Halawa Business Park	Halawa Valley	1988	I-1	Leasehold	38	64

- [1] Uses restricted to high technology research and development and related uses.
- [2] Lots are also available under long-term ground leases.
- [3] Phase I includes about 73 acres in 15 lots.
- [4] About 809 acres have been leased to date and are contained within 125 lots.

Source: John Child & Company, Inc.

- Campbell Industrial Park - This leasehold development is located at Barbers Point adjacent to the new Deep Draft Harbor. This master-planned park includes light, medium, and heavy industrial users. The project was developed in 1959, and since 1959, there have been 96 parcels leased for a total of 809 acres. This indicates a historical absorption of about 29 acres per year.

Recent leasing activity has been slower due to the recessionary economic cycle. Between 1980 and 1986, 34.3 acres were leased, but about 28.8 acres from 9 existing leases were returned to Campbell Estate due to lease cancellations. About 23.2 acres were assigned by other lessees during this period. Therefore, net area leased during 1980-1986 was only about 28.7 acres, or 4.8 acres per year. This industrial area is primarily suited to industries requiring larger land area (typically two acres or more).

There is currently about 220 acres of land available for lease in Campbell Industrial Park, excluding unimproved land located north of the Hawaii Raceway Park that is planned for future expansion. About 22 acres of this inventory is owned in fee simple by others, and may compete with the KIP lots. Fee simple prices are currently ranging between \$9.00 and \$10.00 per square foot.

- Pearl City Industrial Park - This fee simple, 41-lot, industrial subdivision was developed by Herbert Horita in 1975, but taken over by Honolulu Federal Savings & Loan (HonFed) in 1978 in lieu of foreclosure. The park is located in the Waiawa Stream Valley and has relatively poor access.

Between 1975 and 1978, lots in the park did not sell well at prices of \$11 to \$13 per square foot of usable area. HonFed reduced the prices to between \$8 and \$10 per square foot in 1978, and successfully marketed the remaining 27 lots within an 18-month period. Current lot prices range from about \$14 to \$16 per square foot.

- Bougainville Commercial Center - This leasehold, 48-lot, industrial subdivision was developed in 1980 by Donald Look. Mr. Look tried to market the property on a "build to suit" basis and met with little success. HonFed took title to the property in 1985 in lieu of foreclosure. HonFed marketed all but four of the vacant lots at leasehold premiums ranging from about \$17.00 to \$17.75 per square foot between 1986 and 1987. HonFed has developed warehouse and office facilities on the four retained lots, and is leasing the warehouse space at net rents of \$0.85 to \$0.90 per square foot per month.

- Central Park - This leasehold, 58-lot subdivision was completed in 1979. Located in Halawa Valley mauka of the H-1 Freeway, the project has good access and visibility from the Freeway. The subdivision was marketed in leasehold with leasehold premiums of \$11.00 to \$14.00 per square foot, plus improvement district assessments of \$2.00 per square foot. However, market demand was strong, and all of the lots were sold in less than a year. Current leasehold prices range from \$20.00 to \$22.00 per square foot.
- Halawa Business Park - This leasehold, 64-lot, industrial subdivision is located along Halawa Dairy Road near the State Animal Quarantine station and the Halawa High Security Correctional Facility. This subdivision is the most recently developed and marketed industrial park on Oahu, having initiated marketing in November 1987.

Lot prices have been increased twice since November 1987 in response to the very strong demand for industrial lots. All 64 lots were sold within the past 12 months. While all lots have been sold and are in escrow, the most recent price list (effective September 1988) reflected leasehold prices ranging from about \$21.00 to \$21.50 per square foot of usable land area.

#### Proposed Industrial Areas

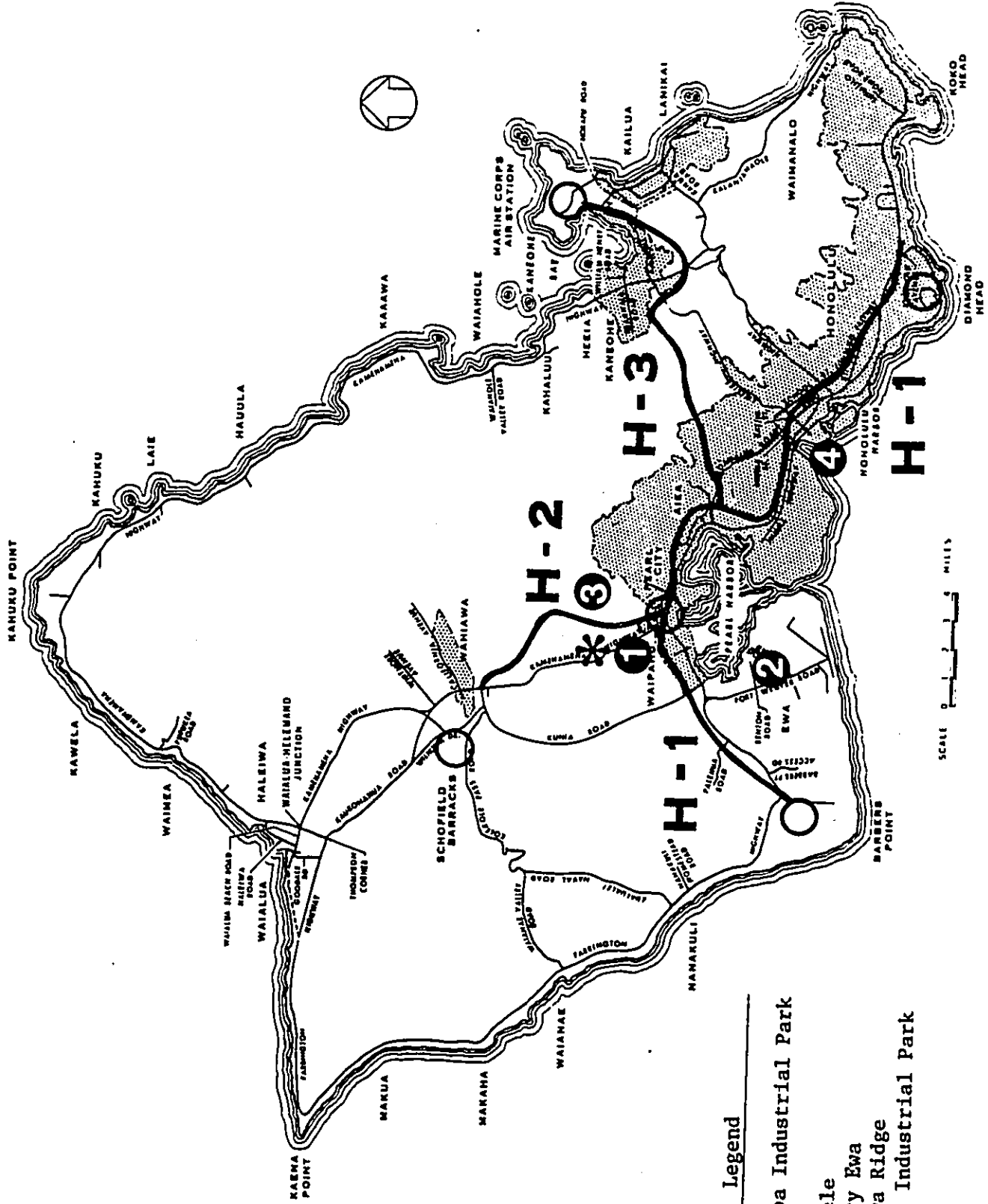
There are a number of industrial areas proposed for development on Oahu. While there is no certainty all proposed industrial areas will be developed, the proposed projects located in the Urban Honolulu to Ewa area would be in most demand, and would offer the most competition to the Kipapa Industrial Park. The proposed industrial areas proposed for development in the Urban Honolulu to Ewa area are located on the map included as Exhibit II-J, and summarized as follows:

- Waikele - This master-planned community is proposed to include a 50-acre office-business park in addition to 2,700 residential units, a 14.5-acre village commercial center, a community recreation center, an elementary school, and an 18-hole golf course. The project has all government approvals, and Amfac, Inc., the developer, scheduled the ground breaking for 1988. However, with the change in Amfac ownership this year, the development schedule was postponed.

The earliest the 50-acre office-business park would be available for occupancy would be 1990. The park would be improved to County standards and would have landscaping and design standards similar to those found in the Mililani Technology Park. We understand the lots would be marketed in fee simple.



KIPAPA INDUSTRIAL PARK  
Locations of Proposed Industrial Areas



Legend

- \* - Kipapa Industrial Park
- 1 - Waikele
- 2 - Gentry Ewa
- 3 - Waiawa Ridge
- 4 - Keehi Industrial Park

- Gentry Ewa - The second phase of the Gentry Ewa development proposes to include a 30-acre industrial park in addition to an 8-acre commercial site, a school, golf course, and park. When completed, the Gentry Ewa project would have about 7,500 residential units.

The project would include about 1,016 acres, of which about 331 acres are currently designated Urban. Gentry, the developer, is requesting reclassification of the remaining acreage to Urban designation. The developer estimates a minimum of two years before the 30-acre industrial park is ready for marketing once all approvals are in place. This fee simple project would be similar to the Gentry Business Park in Waipio.

- Waiawa Ridge - This master-planned, 8,000-unit, 1,395-acre, residential community is proposed to include about 115 acres of commercial/industrial land. The land is owned by Bishop Estate, and Gentry Pacific, Ltd. proposes to develop the project. The proposed development has received Development Plan designation on only a small portion of the site, and requires County approvals for a larger portion of the project to make it economically feasible. The project has conditional approval from the State Land Use Commission.

The 115 acres of commercial/industrial area is proposed to include a variety of industrial, high technology, and commercial uses. The development phasing schedule estimates the development of about 10 acres per phase, with the entire project phased over a 16-year period in 12 phases. The earliest phase of the industrial/commercial area would not be available until the mid-1990's assuming all County approvals are received within the next year.

- Keehi Industrial Park - The State is considering the development of a 125-acre industrial area in the middle of Keehi Lagoon as part of the Waterfront Redevelopment Plan. The project would require the creation of an island in the middle of Keehi Lagoon, with vehicular access via bridges to Lagoon Drive.

There are few details available regarding the timing and industrial uses which would be permitted in this project. This project is not estimated to be available for occupancy until the mid-1990's. Because this project would be developed on State of Hawaii land, we assume it would be marketed in leasehold.

### III - LIGHT INDUSTRIAL MARKET CHARACTERISTICS

This section reviews pertinent characteristics of the demand for light industrial land on Oahu in terms of absorption, pricing, tenant mix, and lot size.

#### ABSORPTION

Historically, the lack of new industrial areas added each year in relation to demand has resulted in relatively rapid absorption of new industrial areas. With the exception of industrial areas which had poor access, location, or marketing plans, all recently developed industrial parks have experienced strong demand for industrial lots. As shown in Exhibit III-A, the most recently developed park was absorbed within one year. Most of the other industrial parks have experienced absorption rates of about 20 to 40 acres per year.

#### PRICING

Industrial lot pricing varies significantly and is dependent upon factors such as location, size, and land tenure. Land prices for industrial sites have increased by about 25% over the past two years because of a relatively small supply of developable land, a good economy, and lower interest rates. Current fee simple prices in industrial subdivisions closest to Kipapa Industrial Park are summarized as follows:

<u>Industrial area</u>	<u>Price per square foot</u>
Gentry Business Center	\$19.00 to \$22.00
Waipahu Industrial Park	20.00 to 22.00
Pearl City Industrial Park	14.00 to 16.00
Mililani Technology Park	11.00 to 14.00
Campbell Industrial Park	8.00 to 9.00

#### TENANT MIX

Light industrial parks have attracted an array of users. A review of existing industrial areas indicates the major users of industrial land include building contractors, building materials storage, wholesaling and distribution, manufacturing, and automotive parts and services. Although it is difficult to generalize the difference in tenant mixes of industrial areas, some trends in land uses are evident.

**KIPAPA INDUSTRIAL PARK**  
**Historical Absorption Rates for**  
**Selected Light Industrial Parks**

Industrial area	Location	Opened	Zoning	Land tenure	Area (acres)	Marketing period in months	Annual absorption (acres)
Waipahu Industrial Park	Waipahu Town	1965	I-1	Fee simple	103	6	206
Newtown Industrial Park	Aiea	1973	I-1	Leasehold	11	7	19
Waiuu Light Industrial Park	Aiea	1973	I-1	Leasehold	33	7	57
Pearl City Industrial Park	Waialua Valley	1976	I-1	Fee simple	34	108	4
Central Park	Halawa Valley	1979	I-1	Leasehold	33	24	17
Centry Business Park	Waipio by Centry	1979	I-1	Fee simple	120	36	40
Bougainville Commercial Center	Halawa Valley	1981	I-1	Leasehold	35	36	12
Halawa Business Park	Halawa	1988	I-1	Leasehold	43	12	43

Source: John Child & Company, Inc.

In the older industrial areas such as Kakaako, Kalihi Kai, and Mapunapuna, the trend is away from the light manufacturing, distribution, and construction-oriented establishments which had characterized these areas, to consumer and retail-oriented establishments like home improvement services and suppliers, mini-storage facilities, and commercial office uses.

Newer industrial areas like Halawa Business Park, Bougainville Commercial Center, and Central Park have attracted primarily warehouse and distribution facilities and some office users. The central locations have also encouraged combination manufacturing, distribution, and showroom facilities for garment, furniture, and food service industries.

The newer parks have also attracted large space users requiring new facilities designed to suit their needs. In Bougainville, Costco built a 150,000# discount retail/wholesale facility. A 200,000# warehouse is currently under construction at Halawa Business Park which will house Crazy Shirts. Recent purchasers of the vacant lots in these newer parks have been about equally divided between owner-users and investors.

#### LOT SIZES

The most common lot size within the newer light industrial parks is less than 0.5 acre or between 0.5 acre and 1.0 acre of usable lot area. As shown in Exhibit III-B, almost 100% of the lots in Halawa Business Park, Bougainville Commercial Center and Central Park are less than 1 acre in size. Over 75% of the lots in Halawa Business Park, the most recent light industrial park on Oahu, were less than 0.5 acre in size.

The predominance of these lot sizes reflects the relatively small scale operations of businesses in Hawaii. While a few large scale users which have required lot assemblages to meet their needs, market demand from owner-users and investors has been for the smaller-sized lots.

#### LAND TENURE

Because an industrial park requires a large contiguous site, most of the light industrial areas have been on leasehold land owned by one of the island's larger landowners. This factor has not had an adverse impact on the marketing of new industrial lots because of the shortage of industrial land in relation to demand.

KIPAPA INDUSTRIAL PARK  
 Lot Size Distribution in  
 Selected Oahu Industrial Parks

Lot size (acres)	Halawa B.P.		Central Park		Bougainville		Pearl City		Centry B.P.		Waipahu		Campbell	
	Lots	Percent	Lots	Percent	Lots	Percent	Lots	Percent	Lots	Percent	Lots	Percent	Lots	Percent
Less than 0.5	50	78.1%	36	62.1%	14	29.2%	15	36.6%	21	34.4%	38	36.9%	1	0.8%
0.5 to 0.9	13	20.3	17	29.3	32	66.7	12	29.3	27	44.3	30	29.1	2	1.6
1.0 to 1.4	1	1.6	3	5.2	2	4.2	5	12.2	8	13.1	29	28.2	9	7.2
1.5 to 1.9	0	0.0	2	3.4	0	0.0	4	9.8	3	4.9	1	1.0	8	6.4
2.0 to 2.9	0	0.0	0	0.0	0	0.0	3	7.3	2	3.3	2	1.9	58	46.4
3.0 to 4.9	0	0.0	0	0.0	0	0.0	2	4.9	0	0.0	2	1.9	16	12.8
5.0 to 6.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.0	4	3.2
7.0 to 10.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	7	5.6
More than 10.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	20	16.0
	64	100.0%	58	100.0%	48	100.0%	41	100.0%	61	100.0%	103	100.0%	125	100.0%

Source: John Child & Company, Inc.

Recent escalations in ground rents in the Airport and Mapunapuna industrial areas have resulted in a preference for fee simple ownership by the owner-users. This was evident in the market support for the Gentry Business Park. Although this industrial subdivision was in a relatively remote area, its fee simple land tenure was an effective marketing advantage in competing with leasehold properties in more central locations.

#### IV - PROJECT MARKET ASSESSMENT

This section assess the market support for the proposed Kipapa Industrial Park (KIP) in terms of lot pricing, absorption, and tenant mix.

##### PROJECT DESCRIPTION

The proposed KIP subdivision will consist of about 20 lots with usable land areas ranging from about 0.5 to 2.3 acres. The lots will be marketed in fee simple, and will be improved with County standard roads and underground utilities. Access to the KIP will be from Kamehameha Highway, at the north end of the highway bridge which spans Kipapa Gulch.

##### ESTIMATED LOT PRICING

Pricing of light industrial lots is influenced by many variables. The most important variables include the following:

- Location and access
- Land tenure
- Size and shape of usable area.

##### Location and Access

The KIP location at the bottom of Kipapa Gulch does not afford prospective users much prominence and advertising exposure. However, it is situated between Mililani Town and Waipio by Gentry, two existing master-planned residential communities with over 21,000 households. Proposed residential developments at Mililani Mauka, Waikele, and Waiawa Ridge could add an additional 17,000 households located within close proximity to KIP.

This concentration of households generate demand for retail goods and services which must be supported by commercial development in the area. This commercial development in turn requires industrial support for warehousing and distribution. In addition, the extensive development proposed for the surrounding areas will generate significant demand by the construction industry for construction services and materials. The KIP would be well located for material and equipment distribution and storage.

Access to KIP would be via Kamehameha Highway and a relatively steep (12%) access road along the northerly side of Kipapa Gulch. This access road may discourage wholesale distributors and other users of large containers.



### Land Tenure

The lots will be sold in fee simple. This factor alone will make KIP desirable to many owner-users who are concerned with escalating lease rents. The fee simple land tenure assisted in the marketing of Gentry Business Park, located only a mile away, and will also contribute toward the marketability of KIP.

### Lot Size and Shape

The physical characteristics of the KIP lots will also contribute to their marketability. The KIP lots will be level and at street grade. We recommend the lots should range from about 10,000# to 20,000#. By keeping the lot sizes small, the lot price remains within range of many investors and owner-users. This would then expand the potential market to those smaller users who do not require and cannot afford industrial properties larger than 0.5 acre. The lots should be rectangular in shape with minimum lot widths in accordance with Land Use Ordinance requirements.

### Retail Pricing

Gentry Business Center is the most proximate light industrial area to KIP. It commands current fee simple prices of \$20 to \$23 per square foot, is located a mile closer to Honolulu, and has superior access and prominence in comparison with KIP. In contrast, Campbell Industrial Park is located further from Honolulu, has attracted predominantly large scale users, has generally been marketed in leasehold, and includes some heavy industrial uses. It commands fee simple prices of about \$9 to \$10 per square foot for 1- to 2-acre sites.

After reviewing the location, land tenure, and physical characteristics of the KIP lots in comparison to retail prices for comparable light industrial areas, the retail prices of the KIP lots are estimated to range from \$14 to \$16 per square foot of usable lot area.

### PROJECTED ABSORPTION

The projected absorption period for the KIP lots would depend on factors including the availability of competitive industrial land, the physical character, pricing, tenure of competing inventory, and general economic conditions. Assuming there is no significant change in the economy over the marketing period, the project is projected to be sold out in about one year.

Recently developed industrial areas have experienced short sales periods of generally less than a year. The 20-lot inventory proposed for KIP is smaller than the most recent industrial areas which have been successfully marketed within one year.

The availability of competitive industrial land is a significant factor influencing the projected absorption rate of KIP. With the exception of Campbell Industrial Park and Halawa Business Park, there are virtually no vacant industrial parcels available.

The lots in Halawa Business Park have just been purchased, and will soon be developed. While Campbell Industrial Park has about 220 acres currently available for lease (a 10-year inventory based on historical absorption) and extensive undeveloped inventory for future expansion, this industrial area is oriented toward the heavier, large scale user. Campbell Industrial Park has not evidenced the market support shown in the more comparable light industrial developments. Therefore, the available inventory at Campbell Industrial Park is not considered a major factor in the projected competitiveness of KIP.

Proposed projects which would represent more direct competition for the KIP lots would include industrial developments at Waikele and Gentry Ewa. While these two developments include 50- and 30-acre industrial areas, respectively, there is no certainty regarding their development schedules. Even if both projects were to be successfully developed within the same time frame as KIP, the three projects would represent a total salable inventory of about 110 acres or less than two years of projected demand for light industrial land on Oahu.

The Waikele industrial area would probably be developed first because it has the most governmental approvals in place. Assuming that the KIP and Gentry Ewa developments would be developed at about the same time, the past marketing experience of the other industrial areas and the projected annual demand for industrial land indicates that the KIP project could be successfully marketed within a one-year period.

#### TENANT MIX

The projected tenant mix for KIP is influenced by the project's location, access, lot size, land tenure, and lot pricing. Located outside of the traditional industrial areas of Oahu, such as Kakaako, Kalihi Kai, and Mapunapuna, the project is not projected to attract those industries and businesses that have, in the past, sought industrial land in proximity to the airport, Honolulu Harbor or the downtown area.

The project location at the bottom of Kipapa Gulch also precludes users requiring a degree of prominence and advertising exposure. The relatively steep grade (about 12%) of the access road may also discourage wholesale distributors and other users of large containers.

However, construction, transportation, and selected manufacturing operations could probably be attracted to the project. These users do not need the advertising exposure, would not consider the road

grade a constraint, and may maximize the advantage of the lower land price because of the need for open yard storage.

Owner-users could be attracted to KIP because of the smaller lot sizes, competitive prices, and the fee simple land tenure. While the location does not offer advertising exposure, the large existing and proposed residential market in close proximity to KIP will result in significant retail and service opportunities which will require warehouse and office facilities within the area.

## QUALIFICATIONS OF JOHN CHILD & COMPANY, INC.

John Child & Company, Inc. (John Child) is a professional real estate service corporation which specializes in real estate appraisal and consulting. Founded in 1937, John Child is one of the largest and oldest real estate appraisal and consulting companies in Hawaii. The Company enjoys an established reputation for quality work and professional service. Our reputation is based on our ability to identify and use appropriate and current valuation techniques, our indepth knowledge and analysis of local market conditions and trends, and the extensive training, education and experience of our professional staff.

### PROFESSIONAL STAFF

The Company's professional staff has a wide range of real estate experience gained through a range of field experience, professional accomplishments, training and education. As a result, staff members hold designations earned from the major professional organizations.

Our staff members have earned their reputation for quality work and professional service. They qualify as expert witnesses in the courts of Hawaii, California and Massachusetts; instruct and lecture at the University of Hawaii and for various business and professional organizations; serve as review appraisers and arbitrators; and continue to attend courses, seminars and workshops to strengthen their own specialized appraisal skills and education. Our professional staff members include:

- Robert J. Vernon, MAI, CRE, Chairman
- Theodore Wrobel, SREA, ASA, President
- Karen Char, MAI, Executive Vice President
- Craig T. Smith, ASA, Appraiser
- Uson Y. Ewart, ASA, Appraiser
- Paul D. Cool, Appraiser
- Darlene K. Ariola, Real Estate Analyst
- May Wong, Real Estate Analyst
- Elizabeth Kimura, Real Estate Analyst
- Kurt Chun, Real Estate Analyst

All of our professional staff have attended recent seminars on FHLBB R41c and have been involved in preparing appraisal reports according to the FHLBB standards. The education and professional experiences of our staff members are outlined in their accompanying resumes.

### SCOPE OF PROFESSIONAL SERVICES

The Company's real estate appraisal and consulting practice includes:

- Appraisal of real estate
- Highest and best use studies
- Market and financial feasibility analyses
- Economic and fiscal impact assessments
- Arbitration
- Litigation support.

Our studies cover a variety of real estate interests including fee simple, leasehold, leased fee and other partial interest or rights. Our extensive experience includes a variety of properties such as:

- Mixed-use developments
- Office buildings
- Shopping centers and retail facilities
- Hotels and resort facilities
- Industrial properties
- Residential rental apartments
- Residential condominium apartments
- Single-family subdivisions
- Special-purpose properties.

#### SELECTED CLIENTS

Our clients represent a variety of private and public interests. Selected clients include:

Amfac, Inc.	Hawaiian Telephone
Amfac Property Development Co.	Honolulu Federal Savings
Ashford & Wriston	and Loan Association
Bank of America	Kaiser Development Company
Bank of Hawaii	Kokusai-Motorcars Co., Ltd.
B.P. Bishop Estate/Kamehameha Schools	Loyalty Development, Loyalty
Estate of James Campbell	Enterprises, Loyalty Finance Co.
Cades, Schutte, Fleming & Wright	Mitsui Trust & Banking Co., Ltd.
Case & Lynch	Nature Conservancy
Castle & Cooke, Inc.	Pacific Construction Co., Ltd.
- Mililani Town, Inc.	Peat Marwick Main & Co.
- Oceanic Properties	Realty Mortgage Investors of
Chaminade College	the Pacific (RAMPAC)
Citibank, N.A.	Security Pacific Mortgage Corp.
City & County of Honolulu	Servco Pacific Inc.
- Department of Housing	Stark Development Company, Ltd.
& Community Development	State of Hawaii
The Equitable Life Assurance Society	- Department of Land &
of the United States of America	Natural Resources
Federal Home Loan Bank Board	Department of Transportation
Finance Realty	U.S. Army
First Federal Savings	U.S. Navy
and Loan Association	U.S. Department of the Interior
First Hawaiian Bank	
GECC Financial	
Goodsill, Anderson, Quinn & Stifel	
Hawaiian Electric	

ROBERT J. VERNON, MAI, CRE  
Chairman

Professional Awards

Professional Recognition Award by the American Institute of Real Estate Appraisers for 1976-1978 and 1979-1981.

Meritorious Service Award presented by the Honolulu Chapter of the Society of Real Estate Appraisers, 1983.

Education

Bachelor of Arts, Ohio State University, 1954.

Various courses sponsored by the American Institute of Real Estate Appraisers and the Society of Real Estate Appraisers.

Professional Associations

Member, American Institute of Real Estate Appraisers (MAI designation).

- Past National Vice President of the Southwest Region (1984-1985).
- Past President of the Honolulu Chapter.
- Past National Governing Councillor.
- Past member of the National Professional Standards Committee.
- Member of the National Admissions Committee.

Member, American Society of Real Estate Counselors (CRE designation).

Senior member, American Society of Appraisers in the Real Property discipline (ASA designation).

- Charter member.
- Past President of the Honolulu Chapter.

Member, American Right Of Way Association.

- Past Treasurer.
- Education Chairman.

Charter member, National Association of Review Appraisers (CRA designation).

Member, Panel of Arbitrators of the American Arbitration Association.

Member, Aloha Chapter of the International Fraternity of Lambda Alpha, an honorary Professional Land Economics Fraternity.

- Vice President of the Aloha Chapter.

Professional Experience

Chairman, John Child & Company, Inc. (1959 to present).

Instructor/Author

"Fundamental and Advanced Real Estate Valuation Techniques," University of Hawaii and Honolulu Board of Realtors, since 1965.

"Residential Valuation," American Institute of Real Estate Appraisers.

Various lectures to Honolulu Chapters of the American Institute of Real Estate Appraisers, American Society of Appraisers, and Society of Real Estate Appraisers; and Engineering Association of Hawaii.

Technical training of real estate personnel of the State of Hawaii Tax Office, Real Property Division.

Graduate Realtors Institute, Small Business Management Program of the University of Hawaii and Hawaii State Real Estate Commission; training manuals in fundamental and advanced real estate valuation techniques.

Various real estate courses, University of Guam and Guam Board of Realtors.

Certification

The American Institute of Real Estate Appraisers conducts a voluntary program of continuing education for its designated members. MAIs and RMs who meet the minimum standards of this program are awarded periodic educational certification. Robert J. Vernon, MAI is certified under this program.

Court Testimony

Qualified as an expert witness in the valuation of real property in the Courts of the State of Hawaii.

USON Y. EWART, ASA  
Appraiser

Education

Bachelor of Architecture, Cornell University, 1972

Punahou School, 1967

Certificate in Advanced Real Estate, University of Hawaii Small Business Management Program.

Courses, workshops, seminars, and examinations including:

- AIREA, Exam IA-1 Real Estate Appraisal Principles
- AIREA, Exam IA-2 Basic Valuation Procedures
- AIREA, Standards of Professional Practice
- AIREA, Capitalization Update Seminar
- AIREA, Techniques and Solutions for Contemporary Problems
- AIREA, Capitalization Theory and Techniques, Parts A and B
- AIREA, Case Studies in Real Estate Valuation
- AIREA, Review of R41c and FHLBB Recordkeeping Requirements
- AIREA, Valuation Analysis and Report Writing
- SREA, Investment Analysis Workshop
- SREA, Application of Market Extractions
- SREA, Construction Costs Estimating Workshop

Professional Associations

Senior Member, American Society of Appraisers in the Real Property Discipline (ASA designation).

- President, Honolulu Chapter No. 16
- Past Vice President and Secretary, Honolulu Chapter No. 16

Candidate, American Institute of Real Estate Appraisers (candidate for MAI designation).

Professional Experience

Appraiser, John Child & Company, Inc. (1977 to present).

Court Testimony

Qualified as an expert witness in the valuation of real property in the Courts of the State of Hawaii and the United States District Courts in Massachusetts and California.



# Appendix B

DAIRY OPERATIONS ALTERNATIVE STUDY

**ROY S. MATSUURA**

CONSULTANT  
DIVERSIFIED AGRICULTURE

6156 Makaniolu Pl., Honolulu, HI 96821  
Telephone (808) 396-0480

**PROPOSED PROJECT:**

Feasibility of re-starting a dairy operation at Kipapa Gulch formerly operated by Dairy-Co., Inc.

**ANALYSIS:**

Under the provisions of the State Milk Control Act, Chapter 157, HRS, administered by the Department of Agriculture, Milk Control Branch, Mr. Ige would be unable to secure a license to produce milk in the Honolulu Milk Shed without acquiring a Production Quota which is not presently available. Even if this Quota would become available for purchase, it would be economically unfeasible due to the exorbitant amount of initial capital outlay (or start-up investment) needed when compared to the probable return on the investment.

As an example, if Mr. Ige contemplated starting a dairy operation similar to his former Kipapa Dairy, the capital requirements would be approximately:

300 cans of milk Quota:	\$ 700,000
Plant & Equipment:	1,000,000*
Milk cows:	500,000
Automotive:	50,000
	<hr/>
	\$ 2,250,000

\*. Note: The present barn now used for equipment storage can be renovated and placed into use if desired for a net saving of \$250,000.

The start-up costs do not include additional capital outlay for employee wages, benefits, insurance and miscellaneous items.

The start-up investment of \$2,250,000, if borrowed from a Federal farm loan agency at 6% for 20 years, will require an annual amortization amount of \$193,584.

The gross annual revenues from the 300 cans of milk Quota will be approximately \$1,944,000. Operating costs are estimated at approximately \$2,073,600. The net return is a \$129,600 loss.

**CONCLUSION:**

The return or re-start of dairy operations is unfeasible.

NOTE TO REPORT:

Production Quotas: Milk production quotas are established by the Board of Agriculture to "promote a proper balance between supply and demand for milk." HRS, Chap. 157: Milk Control Act

References:

1. State of Hawaii, Department of Agriculture, Milk Control Branch Monthly Reports for 1988:

Average blend price per quart = \$0.45

2. Hardy Donoho, Ph. D., "Cost of Production Study", authorized and accepted by the State Board of Agriculture:

Cost to produce one quart of milk in the Honolulu milk shed = \$0.48

December 21, 1988

# Appendix C

PLANT SURVEY

PLANT SURVEY  
Dairy-Co., Inc., Site at Kipapa Gulch

August 1987 & December 1988

The proposed industrial project site was formerly used for dairy operations. As such, the land can be described as being highly disturbed. The area above the proposed industrial site is currently a low rental single family housing site. The area was graded as part of a quarrying operation and as such is also a highly disturbed area.

The proposed industrial park site is partly occupied by a heavy equipment servicing firm and a firewood processing operation. The larger portion of site is unused and heavily over-grown. The site in the gulch is mostly alluvial fan with steep slopes to the east and west. Wind and water erosion on the slopes are severe owing to lack of adequate plant coverage.

The dominant species in the gulch are Guinea grass, castor bean and haole-koa mixed with scattered trees of albizzia, silk oak, mango, kukui, hau and Java plum along the perimeter. The vegetation present throughout the area is mostly exotic with only a few endemic species. No rare or endangered plant was found.

PLANT LIST

Scientific name	Common name	Status
<u>MONOCOTYLEDONS</u>		
COMMELINACEAE		
<i>Zebrina pendula</i> Schnizl.	wandering Jew	X
GRAMINEAE		
<i>Brachiaria mutica</i> (Forsk.) Staph	California grass	X
<i>Cenchrus ciliaris</i> L.	buffel grass	X

<i>Cenchrus echinatus</i> L.	common sandbur	X
<i>Chloris inflata</i> Link	swollen fingergrass	X
<i>Chloris</i> sp.		X
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	X
<i>Digitaria adscendens</i> (HBK.) Henr.	Henry's crabgrass	X
<i>Digitaria</i> sp.	crabgrass	X
<i>Melinis minutiflora</i> Beauv.	molasses grass	X
<i>Panicum maximum</i> Jacq.	Guinea grass	X
<i>Paspalum conjugatum</i> Berg.	Hilo grass	X
<i>Paspalum orbiculare</i> Forst. f.	rice grass	X
<i>Pennisetum purpureum</i> Schumach.	elephant grass	X
<i>Rhynchelytrum repens</i> (Willd.) C.E. Hubb.	Natal redtop	X
<i>Stenotaphrum secundatum</i> (Walt.) Ktze.	buffalo grass	X
<i>Trichachne insularis</i> (L.) Nees	sour grass	X

#### DICOTYLEDONS

##### AMARANTHACEAE

<i>Amaranthus spinosus</i> L.	spiny amaranth	X
<i>Amaranthus viridis</i> L.	slender amaranth	X

##### ANACARDIACEAE

<i>Mangifera indica</i> L.	mango	X
<i>Schinus terebinthifolius</i> Raddi	Christmas berry	X

##### APOCYNACEAE

<i>Plumeria rubra</i> L.	plumeria	X
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##### ARALIACEAE

<i>Brassaia actinophylla</i> Endl.	octopus tree	X
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##### BIGNONIACEAE

<i>Spathodea campanulata</i> Beauv.	African tulip tree	X
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##### CARICAEAE

<i>Carica papaya</i> L.	papaya	X
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##### CASUARINACEAE

<i>Casuarina</i> sp.	ironwood	X
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##### COMPOSITAE

<i>Ageratum conyzoides</i> L.	maile-honohono	X
<i>Bidens pilosa</i> L.	Spanish needle	X
<i>Emilia sonchifolia</i> (L.) DC.	lilac pua-lele	X
<i>Erechtites hieracifolia</i> (L.) Raf.	fireweed	X
<i>Pluchea indica</i> (L.) Less.	Indian pluchea	X
<i>Sonchus oleraceus</i> L.	sow thistle	X
<i>Wedelia trilobata</i> (L.) Hitchc.	wedelia	X

##### CONVOLVULACEAE

<i>Ipomoea congesta</i> R.Br.	morning glory	X
<i>Ipomoea cairica</i> (L.) Sweet	koali-'ai	X

<b>EUPHORBIACEAE</b>		
<i>Ricinus communis</i> L.	castor bean	X
<b>LEGIMINOSAE</b>		
<i>Albizia falcataria</i> (L.) Fosb.	albizzia	X
<i>Albizia</i> sp.		X
<i>Desmodium triflorum</i> (L.) DC.	3-flowered beggarweed	X
<i>Leucaena leucocephala</i> (Lam.) de Wit	haole koa	X
<i>Mimosa pudica</i> L.	sensitive plant	X
<b>MALVACEAE</b>		
<i>Hibiscus rosa-sinensis</i> L.	red hibiscus	X
<i>Hibiscus tiliaceus</i> L.	hau	X
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	X
<b>MELICACEAE</b>		
<i>Melia azedarach</i> L.	pride of India	X
<b>MORACEAE</b>		
<i>Ficus</i> sp.	banyan	X
<b>MYRTACEAE</b>		
<i>Psidium cattleianum</i> f. <i>lucidum</i> Deg.	yellow strawberry guava	X
<i>Psidium cattleianum</i> <i>guajava</i> L.	guava	X
<i>Syzygium cumini</i> (L.) Skeels.	Java plum	X
<b>NYCTAGINACEAE</b>		
<i>Bougainvillea glabra</i> Choisy	bougainvillea	X
<b>PAPILIONATAE</b>		
<i>Dioclea violacea</i> Mart.	Mauna Loa	X
<b>PASSIFLORACEAE</b>		
<i>Passiflora edulis</i> f. <i>flavicarpa</i> Deg.	yellow liliko'i	X
<b>PROTEACEAE</b>		
<i>Grevillea robusta</i> A. Cunn.	silk oak	X
<b>RUTACEAE</b>		
<i>Citrus aurantium</i> L.	sour orange	X
<i>Citrus</i> sp.		X
<b>SOLANACEAE</b>		
<i>Solanum nigrum</i> L.	popolo	X
<b>SAPINDACEAE</b>		
<i>Dodonaea</i> sp.	'a'ali'i	E
<b>STERCULIACEAE</b>		
<i>Waltheria americana</i> L.	hi'aloa	I

ULMACEAE

Trema orientalis charcoal tree X

UMBELLIFERAE

Centella asiatica (L.) Urban Asiatic pennywort X

VERBENACEAE

Lantana camara L. lantana X

Stachytarpheta australis Mold. Cayenne vervain X

Tom K. Tagawa

December 28, 1988

References:

Neal, Marie C. 1965. In Gardens of Hawaii, Revised Edition.  
Bishop Museum Press.

Hirano, Robert T. 1983. Handbook of Hawaiian Weeds, 2nd Edition.  
University of Hawaii Press. Originally edited by: E.L. Haselwood  
and G.G. Motter.



# Appendix D

FAUNA SURVEY

FAUNA SURVEY FOR THE PROPOSED KIPAPA INDUSTRIAL PARK  
WAIPIO, EWA, OAHU

December 22, 1988

FAUNA SURVEY METHODOLOGY:

Several field surveys were conducted in January, February and March of 1988 at the project site. Appropriate literature was reviewed.

GENERAL:

The birds and mammals possibly present in the project area, or observed during various field surveys, with the exception of the very limited number of native birds and one land mammal species, are all forms that have been introduced by humans.

ENDANGERED SPECIES:

In the project area of the proposed Kipapa Industrial Park, it is possible that one endemic Hawaiian creature classified as "endangered" by the U. S. Fish and Wildlife Service may be seen. This is the Hawaiian Bat.

MAMMALS:

The Hawaiian Bat, *Lasiurus cinereus semotus*, the State's only native land mammal, is widely distributed throughout the main islands of the Hawaiian chain. These bats are very infrequently seen on Oahu. Hawaiian Bats have not been reported near the project area, but may possibly fly over it.

Other mammals possibly present are all introduced. The following is a list of other mammals that are or may be found in the project area:

Mongoose.....	<i>Herpestes auro punctatus</i>
Feral Pigs.....	<i>Sus scrofa</i>
Black Rat.....	<i>Rattus rattus</i>
House Mouse.....	<i>Mus domesticus</i>
Cat.....	<i>Felis catus</i>
Dog.....	<i>Canis familiaris</i>

BIRDS:

Native Birds:

The only native birds (non-introduced) that were seen or may be expected in the project area are the Hawaiian Owl, the Black Crowed Night Heron, and several species of migratory shore birds. These shore birds, that winter in Hawaii, leave each spring to fly to Alaska where they nest and rear their young. They then return to Hawaii in early fall. These are the Pacific Golden Plover, Wandering Tattler, and the Ruddy Turnstone. Of these, the Pacific Golden Plover was the only species observed in the project area.

**Introduced Birds:**

More than fifty species of birds brought to Hawaii by man have become established in the Islands. Many of these are present in the project area. All are introduced birds that are found elsewhere on Oahu. The most commonly observed species were the Barred Dove, the Lace-Necked Dove, the Mynah, the White-Eye, Cardinal, Brazilian Cardinal, House Sparrow, Linnet, and Rice Bird.

A large flock of several dozen Cattle Egrets were observed in trees in the project area. The presence of agricultural animals here is probably what attracted the Cattle Egrets. Flies, associated with farm animals, are a favorite food of this egret.

**List of Birds:**

The following is a list of the birds observed or expected to be found in the project area.

**Native Birds:**

Hawaiian Owl .....	Asio flammeus
Black Crowned Night Heron ..	Nycticorax nycticorax
Pacific Golden Plover .....	Pluvialis dominica
Ruddy Turnstone .....	Arenaria interpres
Wandering tattler .....	Heteroscelus incanum

**Introduced Birds:**

Barred Dove .....	Geopelia striata
Lace-Necked Dove .....	Streptopelia chinensis
Mynah .....	Acridotheres tristis
White-Eye .....	Zosterops japonica
Linnet .....	Carpodacus mexicanus
Black-Headed Mannikin .....	Lonchura malacca
Rice Bird .....	Lonchura punctulata
Strawberry Finch .....	Amandava amandava
Cardinal .....	Cardinalis cardinalis
Brazilian Cardinal .....	Paroaria coronata
Mocking Bird .....	Mimus polyglottos
Ring-Necked Pheasant .....	Phasianus colchicus
Red-Vented Bulbul .....	Pycnonotus cafer
Barn Owl .....	Tyto alba
Cattle Egret .....	Bubulcus ibis

**CONCLUSIONS:**

No significant impact on wildlife is anticipated by the proposed project. Introduced birds and mammals, plus some native shore birds are the primary types of wildlife occupying the project site and the adjacent areas.

The proposed improvements and clearing of the site poses no threat to the one endangered species, the Hawaiian Bat, that may possibly fly over the area.

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Berger, A. J., "Hawaiian Birdlife", University of Hawaii Press, Honolulu, Second Edition, 1981.

Munro, G. C., "Birds of Hawaii", Charles Tuttle Co., Inc., Rutland, Vermont, 1944.

State of Hawaii, Department of Land and Natural Resources, Division of Forestry and Wildlife, "Hawaii Wildlife Plan", 1985.

Tomich, P. Quentin, "Mammals in Hawaii: A Synopsis and Notational Bibliography", Bishop Museum Press, Honolulu, 1986.

PREPARED BY: Paul Breese  
PACIFIC ZOOLOGICAL CONSULTANTS  
P. O. BOX 1049  
Kapaau, North Kohala, HI 96755

# Appendix E

ENGINEERING STUDY

November 21, 1988

Mr. Yuichi Ige  
Dairy Co., Inc.  
c/o W. Y. Thompson, Consultant  
98-1051 Kahapili Street  
Aiea, Hawaii 96701

Dear Mr. Ige:

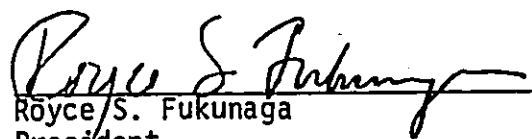
Subject: Proposed Kipapa Industrial Park

We are transmitting this preliminary report on our findings to date regarding the drainage, sewage and water requirements for the proposed Kipapa Industrial Park. As indicated in the report, some major "off-site" requirements need to be satisfied for the project to be developed. We have assigned some rough cost estimates to meet these requirements, so that you have some basis to compare alternative uses of the property.

Please call if you have any questions or comments. We are available to meet with at any time.

Very truly yours,

FUKUNAGA & ASSOCIATES, INC.

  
Royce S. Fukunaga  
President

RSF/vh

Enc.

FUKUNAGA & ASSOCIATES, INC.



PROPOSED KIPAPA INDUSTRIAL PARK

PRELIMINARY REPORT

I. DRAINAGE

The proposed subdivision lies along Kipapa Stream. The total drainage area for Kipapa Stream at a point just mauka of the existing poultry farm is approximately 7,500 acres (11.7 square miles).

In a drainage report (by EDP Hawaii, Inc. dated Oct. 18, 1986) for the Mililani Mauka development, the diversion of an additional 711 acres to Kipapa Stream was proposed. This proposal was accepted by the Dept. of Public Works, C&C of Honolulu on Oct. 27, 1986.

In the aforementioned drainage report, it was shown that the majority of the flat area, in the proposed industrial subdivision from Kipapa Stream to the bottom of the pali on the Wahiawa-side of the gulch, would experience flooding under existing (without diversion) conditions, and the proposed diversion would have minimal additional impact on the existing flood levels. (See Exhibit #1).

In order to eliminate the flooding on the proposed industrial development site, a new concrete lined channel would have to be installed to increase the carrying capacity of Kipapa Stream. Preliminarily, a 30-foot (base width) concrete lined trapezoidal channel with 1:1 side slopes, up to 16 feet deep, would be required. (See Exhibit #2). This channel would be required for a length of approx. 2,000 feet, to a point on Kipapa Stream approximately 900 feet mauka of the northern boundary of the proposed development.

II. SEWAGE

The proposed industrial park comprises a gross area of 39.1 acres. Approximately 20 acres is developable (outside the pali and stream areas), and this area is projected to generate approx.

80,000 GPD of sewage. Two alternatives have been investigated for providing wastewater disposal into the public sewer system. These are discussed below.

A. Pump into Mililani Town system.

The existing Mililani Town system is geographically the closest to the proposed development, so connection to this system would seem to be the cheapest. Mililani Town, Unit 19, is currently under construction on the plateau above Kipapa Gulch on the Wahiawa side. A sewage pump station (SPS) is being built to receive sewage from this development and pump the sewage over to the Mililani Sewage Treatment Plant located on the other side of Kamehameha Highway.

When we looked into the possibility of pumping sewage up to the SPS now under construction, we found that:

- 1) The pumps are small and not designed to handle the additional flow that would come from the industrial park;
- 2) The line downstream of Mililani STP (between the STP and Waipahu SPS) has a capacity of 19.2 MGD. The proposed flows, when Mililani Mauka is brought on line, are currently estimated to be 20.13 MGD.

For the above reasons, we concluded that pumping into the Mililani system would not prove feasible.

B. Pump into Waipio-Gentry system.

By letter to Mr. W. Y. Thompson, dated Jan. 18, 1988, the C & C of Honolulu, Dept. of Public Works, indicated that the Waipio-Gentry off-site sewer can accommodate flows from the proposed development.



The top end of the Waipio-Gentry sewer trunk is located on Ka Uka Boulevard (See Exhibit #3). Sewage would have to be pumped to this point and discharged into an existing sewer manhole. The proposed improvement would entail the construction of a sewage pump station at the low end of the industrial park and approx. 3600 feet of force main (6"). A part of this force main would have to be within the State Highway right-of-way for Kamehameha Highway, and would have to be built under stringent State restrictions.

Another complication connected with the disposal of sewage is the current uncertainty surrounding the status of the Honouliuli Sewage Treatment Plant, the ultimate receiver of all raw sewage generated in central Oahu and the Ewa Plain. Since the existing plant is close to capacity, new connections are being evaluated on a "first come, first served" basis, and no guarantees are forthcoming for any development. Additionally, the STP, which now provides primary treatment, may be required to up-grade to secondary treatment in the future.

### III. WATER SERVICE

The existing project site is served by a deep well into the Pearl Harbor aquifer. Water from this well is pumped into a 50,000 gal. steel storage tank. Daily water consumption is estimated to be 124,200 GPD. Since the Pearl Harbor aquifer has been designated a Groundwater Control Area, continued pumping from this source should be authorized via a permit from the State Dept. of Land and Natural Resources.

If this private source is used to serve the proposed industrial park, major new storage (and possibly pump equipment improvements)

would be required. To satisfy fireflow requirements (4000 gpm for 3 hrs) for a light industrial development, a new storage reservoir with 720,000 gal. capacity would be required.

In lieu of maintaining this private system, we looked into the possibility of acquiring water service from either the water systems serving Mililani Town or Waipio-Gentry. The Mililani Town System ("685") and the Waipio-Gentry ("590") systems are both set at higher elevations, and service from either of these systems would result in pressures in excess of the 125 psi maximum standard maintained by the BWS. The BWS also indicated, by letter to Mr. W. Y. Thompson, dated Jan. 27, 1988, that the Mililani and Gentry-Waipio systems' total capacity was fully committed to both developments.

IV. PRELIMINARY COST SUMMARY FOR OFF-SITE DRAINAGE, SEWAGE & WATER

A. DRAINAGE

1. TRAPEZOIDAL CHANNEL, CONC.

2000 LF @ \$950.00 1,900,000.00

B. SEWAGE

1. SEWAGE PUMP STATION 500,000.00

2. FORCE MAIN (6")-3600 LF @ \$100 360,000.00

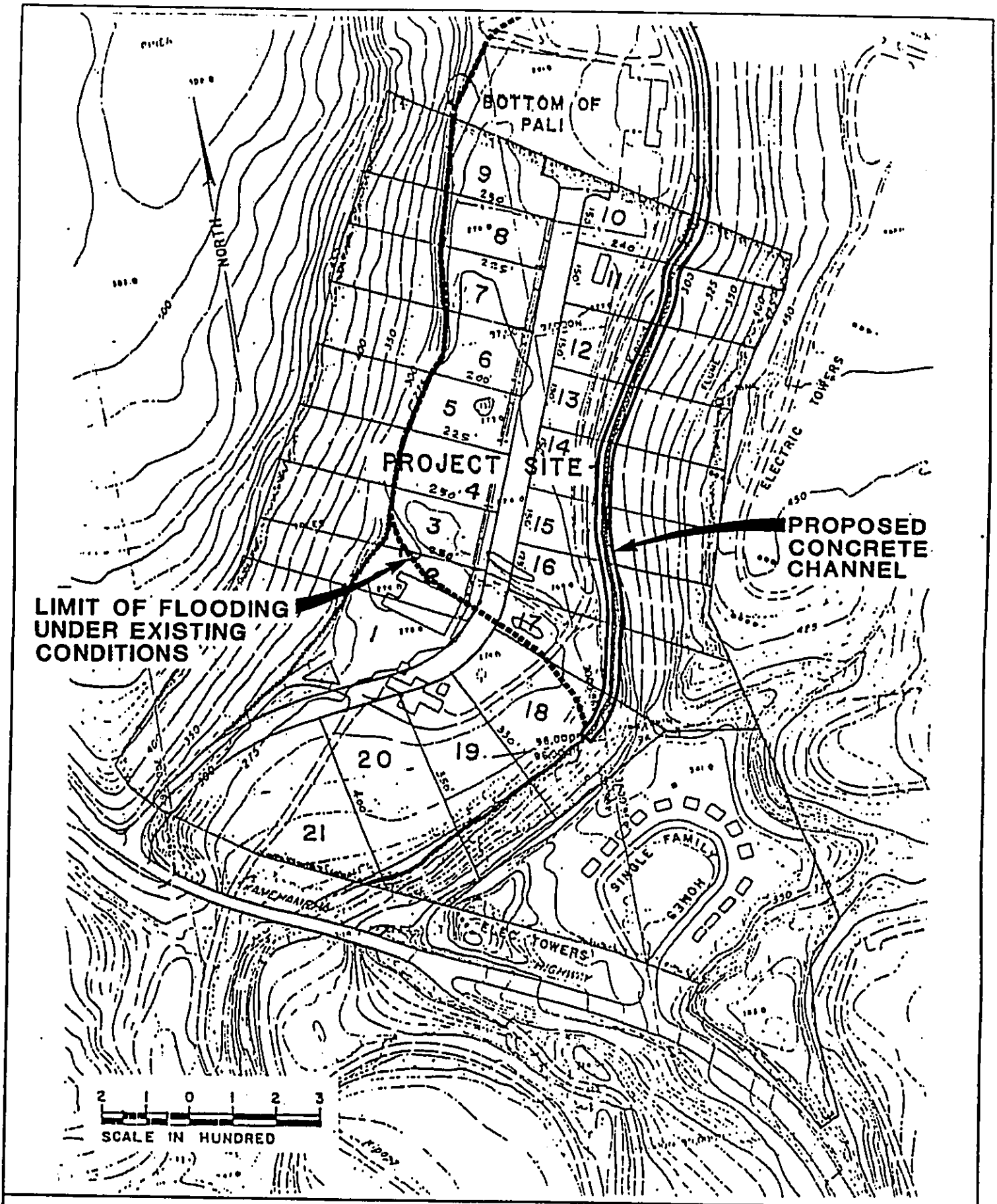
Subtotal 860,000.00

C. WATER

1. WELL PUMP IMPROVEMENTS (ALLOW.) 100,000.00

2. STORAGE RESERVOIR 800,000.00

Subtotal 900,000.00



**PROPOSED KIPAPA INDUSTRIAL PARK  
FLOOD CONTROL REQUIREMENTS**

**EXHIBIT #1**

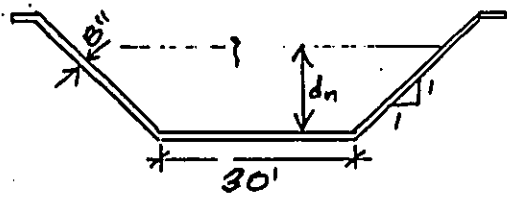
FUKUNAGA AND ASSOCIATES, INC.

Project: Kipapa Indus. Park Sheet No.: \_\_\_\_\_  
 Location: \_\_\_\_\_ Computed: \_\_\_\_\_ Date: \_\_\_\_\_  
 Item: Drainage Channel Checked: \_\_\_\_\_ Date: \_\_\_\_\_

$A = 8200 \text{ ac.}$

$Q = 19,500 \text{ cfs (Storm Drainage Standards, C\&C of Hon.)}$

$S = 0.01 - 0.025$



for 30' wide trapezoidal conc. channel

$K' = \frac{Qn}{(b^{2/3})(S^{1/2})}$

for  $S = 1\%$ :  $K' = \frac{(19,500)(.015)}{(30^{2/3})(.01)^{1/2}} = .3365$

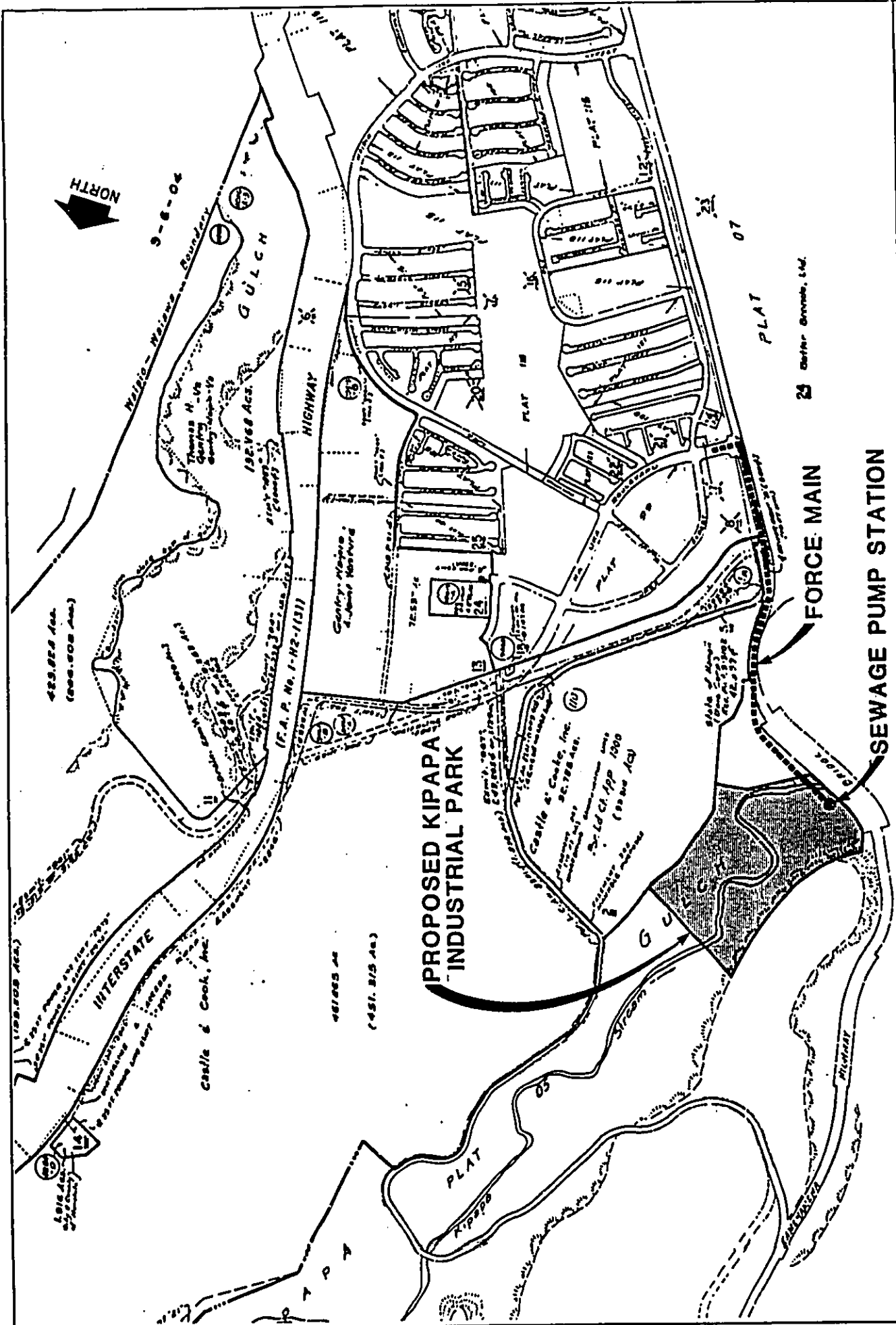
$d_n = 11.9'$

$A = 498.6 \text{ \#}$

$V = 39.1 \text{ fps.}$

Freeboard =  $2 + 0.025 \sqrt[3]{d} = 4.3'$

Total Ht = 16.2'



**PROPOSED KIPAPA INDUSTRIAL PARK - OFF-SITE SEWER**

SCALE: 1" = 1200'

EXHIBIT #3

# Appendix F

TRAFFIC ANALYSIS

December 9, 1988

Mr. W. Y. Thompson, Consultant  
98-1051 Kahapili Street  
Aiea, Hawaii 96701

Dear Bill:

SUBJECT: Proposed Light Industrial Park at Kipapa Gulch  
TMK: 9-4-05: 52

We have evaluated traffic conditions at the proposed vehicular access to the site based on a developable industrial area of 21 acres. Our findings are as follows:

Average trip rates from the Institute of Transportation Engineers' Trip Generation (Fourth Edition) manual were used to estimate the traffic entering and exiting the proposed project. An industrial park is estimated to generate at full occupancy an average weekday volume of 1,321 vehicle trips (sum of both inbound and outbound). The most significant traffic impact is expected during the afternoon peak hour, during which the estimated project traffic volumes are 47 vehicles per hour (vph) entering and 177 vph exiting.

Existing traffic volumes on Kamehameha Highway at Kipapa Gulch were obtained from traffic counts and estimates done by the State Highways Division. The 1986 average daily traffic was estimated to be 21,100 vehicles per day (vpd). In an October 1987 traffic count totaling 20,800 vpd, the peak afternoon hourly volume occurred between 3:30 and 4:30 p.m., with a volume of 1,541 vph. This peak period would probably coincide with the proposed project's peak hour.

The location of the proposed intersection limits the types of intersection improvements that are feasible. Because of the existing bridge, the rock embankment to the north, and the narrow highway, left turn movements should not be allowed at an unsignalized intersection. The future with-project condition was analyzed using the 1987 traffic count, with an assumed highway traffic increase of 10%. In the worst case of project traffic occurring simultaneously with highway traffic during the afternoon peak hour, the unsignalized intersection analysis showed that right turns out of the project would incur very long delays, or Level of Service (LOS) E conditions.

If left turns out of the site were allowed, exiting traffic demand would exceed capacity at a unsignalized intersection. With traffic signals the intersection would operate at approximately 88 per cent of capacity, at LOS D, which describes long delays. For the expected case of the project's peak hour volume occurring between 3:30 and 4:30 p.m., the peak hour traffic signal warrant, or minimum traffic volume requirements for the installation of signals, would be satisfied.

Mr. W. Y. Thompson  
December 9, 1988  
Page 2

The State Highways Division has long-range plans for future widening of Kamehameha Highway which would involve relocating the highway onto a new bridge at a higher elevation. While this would alleviate the traffic problem at the site, access would have to be maintained through a new connection to the highway.

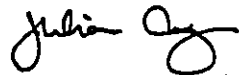
In view of the findings of the analysis, the following measures should be taken to accommodate the project's traffic:

- In the short-term, restrict turning movements at the intersection to right turns in and right turns out; restripe Kamehameha Highway at the bridge to allow additional shoulder area on the east side to improve the visibility of northbound vehicles for vehicles exiting the site. Intersection warning signs should also be provided for northbound highway traffic.
- Monitor traffic conditions and volumes from the project as it develops to determine if traffic signals are needed. When warranted, signalize the intersection and allow left turns out of the site; provide advance warning of the signal, including flashing lights, as needed.
- Access to the site should be maintained through a new connection when Kamehameha Highway is widened.

These improvements would provide for adequate access to the site. Should you have any questions, please contact me.

Very truly yours,

PARSONS BRINCKERHOFF QUADE  
& DOUGLAS, INC.



Julian Ng, P.E.  
Traffic Engineer

cc: Ty Kusao

nk2.24



# Appendix G

AIR. QUALITY STUDY

**AIR QUALITY STUDY  
FOR THE PROPOSED  
KIPAPA INDUSTRIAL PARK**

**KIPAPA GULCH, WAIPIO, EWA DISTRICT, OAHU**

**Prepared for:**

**Dairy-Co, Inc.**

**Prepared by:**

**Barry D. Root & Barry D. Neal**

**April 1989**

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- 4 Estimated Worst-Case 1-Hour Carbon Monoxide Concentrations During Peak Traffic Hours at Intersection of Kamehameha Highway and Kipapa Gulch Access Road
- 5 Estimated Worst-Case 8-Hour Carbon Monoxide Concentrations at Intersection of Kamehameha Highway and Kipapa Gulch Access Road

## 1.0 SUMMARY

Dairy-Co., Inc. is proposing to develop a light industrial park at Kipapa Gulch, Ewa, Oahu. Approximately 40 acres of the site would be used for light industries and the remaining 10 acres would continue to be used for low rental housing. A project completion date of 1994 is planned. This study examines the present air quality of the project area and the potential impacts that could result from construction and use of the proposed facility. Mitigative measures to lessen project impacts are suggested where possible and appropriate.

Except for occasional dust and odor problems from nearby agricultural industries, the present air quality of the project area is relatively good. Air quality data from nearby monitoring stations operated by the state indicate that air quality standards are currently being met.

If the proposed project is given the necessary approvals to proceed, it is inevitable that some short- and long-term impacts on air quality will unavoidably occur either directly or indirectly as a consequence of project construction and operation. Short-term impacts from fugitive dust would likely occur during the project construction phase. To a lesser extent, exhaust emissions from stationary and mobile construction equipment and from workers' vehicles may also affect air quality during the period of construction. State air pollution control regulations require that there be no visible fugitive dust emissions at the property line. Hence, an effective dust control plan should be implemented to ensure compliance with state regulations. Fugitive dust emissions can be controlled by watering of active work areas and by covering of open-bodied trucks. Paving and landscaping early in the construction schedule will also reduce dust emissions.

After construction, long-term impacts on air quality could occur directly from emissions emanating from industries locating and operating at the proposed facility and indirectly from air pollutants emitted by vehicular traffic coming to and from the site. Since the specific industries that would be located at the project have not yet been identified, quantitative estimates of any direct air quality impacts from industries locating there cannot be made. However, based on the project market study, most of the industrial park residents would likely emit little or no air pollution. Due to the high topography surrounding the site and the potential for air stagnation and/or plume impact on the nearby hillsides, it would be advisable to exclude any emission-prone manufacturing plants or other heavy sources of air pollution. Before any air pollution source locates at the site, state permits to construct and to operate must be obtained. At the time of permit application, an air quality impact assessment of the proposed source's emissions may be required.

Vehicles coming to and from the proposed industrial park will use Kamehameha Highway and the project access road. To assess the impact of emissions from these vehicles, an air quality modeling study was undertaken to estimate current ambient concentrations of carbon monoxide along Kamehameha Highway and to predict future levels both with and without the proposed project. Present carbon monoxide concentrations were estimated to be well within state and national ambient air quality standards. In the year 1994 without the project, concentrations were predicted to remain about the same. For the 1994 with project scenario, concentrations were estimated for both with and without traffic signal cases. If there is no signal, vehicles exiting the site will experience long delays during the afternoon peak traffic hour and will likely cause carbon monoxide concentrations to exceed state standards in the immediate vicinity of the roadway intersection during worst-case meteorological conditions. (Predicted concentrations are within the less stringent national standards, however.) If a signal is installed at the intersection,

worst-case carbon monoxide concentrations could be brought within the state standards.

Long-term, indirect impacts are also possible due to the project's electrical power and solid waste disposal requirements. Quantitative estimates of these requirements are unavailable at this stage of the project, but the attendant impacts are expected to be small.

## 2.0 INTRODUCTION AND PROJECT DESCRIPTION

Dairy-Co., Inc. is proposing for development a light industrial park at Kipapa Gulch, Waipio, Ewa, Oahu. The proposed project site is located within Kipapa Gulch on the north side of Kamehameha Highway near the F.D. Roosevelt Bridge and occupies approximately 50 acres of land. Nearly 40 acres of the site would be developed for light industrial use, and the remaining 10.6 acres would continue to be used for low-rental, single-family housing. Figure 1 shows the proposed project location map. Development is expected to be completed by 1994.

The purpose of this study is to describe existing air quality in the project area and to assess the potential short-term and long-term direct and indirect air quality impacts that could result from construction and use of the proposed facilities as planned. Measures to mitigate these impacts are suggested where possible and appropriate.

## 3.0 AMBIENT AIR QUALITY STANDARDS (AAQS)

National Ambient Air Quality Standards (AAQS) are specified in Section 40, Part 50 of the Code of Federal Regulations (CFR), while State of Hawaii AAQS are defined in Chapter 11-59 of the Hawaii Administrative Rules.

Table 1 summarizes both the national and the state AAQS that are specified in the cited documents. As indicated in the table, AAQS have been established for six pollutants. The pollutants for which AAQS have been established include particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead. National AAQS are stated in terms of primary and secondary standards. National primary standards are designed to protect the public health with an "adequate margin of safety". National secondary standards, on the other hand, define levels of air quality necessary to protect the public welfare from "any known or anticipated adverse effects of a pollutant". Secondary public welfare impacts may include such effects as decreased visibility, diminished comfort levels, or other potential injury to the natural or man-made environment, e.g., soiling of materials, damage to vegetation or other economic damage. In contrast to the national AAQS, Hawaii State AAQS are given in terms of a single standard that is designed "to protect public health and welfare and to prevent the significant deterioration of air quality".

Each of the regulated pollutants has the potential to create or exacerbate some form of adverse health effect or to produce environmental degradation when present in sufficiently high concentration for prolonged periods of time. The AAQS specify a maximum allowable concentration for a given pollutant for one or more averaging times to prevent harmful effects. Averaging times vary from one hour to one year depending on the pollutant and type of exposure necessary to cause adverse effects. In the case of the short-term (i.e., 1- to 24-hour) AAQS, both national and state standards allow one exceedance per year.

State of Hawaii AAQS are in some cases considerably more stringent than comparable national AAQS. In particular, the State of Hawaii 1-hour AAQS for carbon monoxide is four times more stringent than the comparable national limit.

Under the provisions of the Federal Clean Air Act [1], the U.S. Environmental Protection Agency (EPA) is required to periodically review and re-evaluate national AAQS in light of research findings more recent than those which were available at the time the standards were originally set. Occasionally new standards are created as well. Most recently, the national standard for particulate matter has been revised to include specific limits for particulates 10 microns or less in diameter (PM-10) [2]. The State of Hawaii has not explicitly addressed the question of whether to set limits for this category of air pollutant, but national AAQS prevail where states have not set their own more stringent levels.

Hawaii AAQS for sulfur dioxide were relaxed in 1986 to make them essentially the same as national limits. It has been proposed in various forums that the state also relax its carbon monoxide standards to the national levels, but at present there are no indications that such a change is being considered.

#### 4.0 PRESENT AIR QUALITY

Present air quality in the project area could potentially be affected by air pollutants from four main types of sources: natural, industrial, agricultural and vehicular. With respect to the latter two source categories, the present air quality of the project site is affected by occasional dust and odor from nearby agricultural operations and by intermittent dust from vehicles traversing the unpaved project access road. Some carbon monoxide fumes from vehicle traversing Kamehameha Highway probably also affect the present air quality.



Less obvious, more distant sources of air pollution may also affect the project area. Table 2 presents an air pollutant emission summary for the City and County of Honolulu which was compiled in 1980. These are the latest data that are available. The mineral products industry was the most significant source category for emissions of particulate matter. Sulfur dioxide emissions originated mainly from power plants, while motor vehicles accounted for much of the emissions of nitrogen oxides, carbon monoxide and hydrocarbons.

Natural sources of air pollution emissions which could also affect the project area but cannot be quantified very accurately include the ocean (sea spray), plants (aero-allergens), wind-blown dust, and perhaps distant volcanoes on the Island of Hawaii.

An annual summary of air quality measurements for monitoring stations nearest the project site is presented in Table 3 for the years 1985, 1986 and 1987. These data were all collected by the State Department of Health. Twenty-four hour average sulfur dioxide measurements were made at Barbers Point, about 11 miles southwest of the Kipapa area. There were no exceedances of the state/national 24-hour AAQS for sulfur dioxide during the 3-year period. Concentrations monitored during the last 2 years reported were consistently low with daily mean values at or below  $5 \text{ ug/m}^3$ .

Both total particulate and PM-10 concentrations were monitored at Pearl City, approximately 3 miles southeast of the project site. During the 1985-87 reporting period, the highest 24-hour average total particulate concentration measured was  $65 \text{ ug/m}^3$ , while the corresponding value for PM-10 was  $32 \text{ ug/m}^3$ . Average daily concentrations for total particulate and for PM-10 were about  $30 \text{ to } 35 \text{ ug/m}^3$  and  $15 \text{ to } 16 \text{ ug/m}^3$ , respectively. Neither the state nor the national AAQS were exceeded.

The nearest carbon monoxide measurements were made at the Department of Health building in downtown Honolulu (about 15 miles to the southeast). The average daily maximum 1-hour concentration measured at this location was about 2 mg/m<sup>3</sup>. During the most recent year reported, 1987, the daily maximum 1-hour concentration ranged from 0.3 to 11.1 mg/m<sup>3</sup>; one exceedance of the state AAQS was recorded. During the previous year (1986), three exceedances of the state AAQS were reported. Carbon monoxide concentrations in the vicinity of the proposed project are likely much lower than those reported for traffic-congested downtown Honolulu. Present concentrations are estimated later in this study based on air quality modeling of vehicular emissions in the project area.

The nearest available ozone measurements were taken at Sand Island (about 12 miles southeast of the project site). During 1987 the Sand Island daily maximum 1-hour concentration averaged 38 ug/m<sup>3</sup> and ranged from 4 to 84 ug/m<sup>3</sup>, and there were no exceedances of the state AAQS. Concentrations during 1986 were similar to those recorded for 1987, while in 1985 maximum 1-hour concentrations were significantly higher. Three exceedances of the state AAQS were measured during the 1985 period. Ozone concentrations in the vicinity of the proposed project are probably lower than they are at Sand Island.

The closest measurements for ambient lead concentrations are made at the Liliha monitoring station near downtown Honolulu. During the 1985-87 reporting period, lead concentrations at this location had a downward trend, most probably reflecting the increased use of unleaded gasoline. Average quarterly concentrations were near or below the detection limit. No exceedances of the state AAQS have ever been recorded.

Nitrogen dioxide is no longer monitored by the Department of Health anywhere in the state. Concentrations of this pollutant were measured from 1971 through 1976 at Barbers Point, and annual mean values were found to vary from 11 to 29 ug/m<sup>3</sup>, safely inside the state and national AAQS.

From the data presented in Table 3, it appears that State of Hawaii AAQS for particulates, sulfur dioxide, nitrogen dioxide and lead are currently being met at monitoring stations nearest to the project site. The ozone AAQS has not been exceeded during the past two years at the Sand Island monitoring station. Carbon monoxide readings from urban Honolulu indicate that the state AAQS for carbon monoxide may be exceeded at a rate of one to three times per year in traffic-congested areas. Concentrations of carbon monoxide and ozone in the vicinity of the proposed project are probably lower than at the locations where the state monitors these pollutants.

#### 5.0 SHORT-TERM DIRECT AND INDIRECT IMPACTS

Short-term direct and indirect impacts on air quality could potentially occur due to project construction. For a project of this nature, there are two potential sources of air pollution emissions which could directly result in short-term air quality impacts during project construction: (1) fugitive dust from vehicle movement and soil excavation and (2) exhaust emissions from on-site construction equipment. Indirectly, there could also be short-term impacts from slow-moving construction equipment traveling to and from the project site and from a temporary increase in local traffic caused by commuting construction workers.

Fugitive dust emissions may arise from grading and dirt-moving activities within the project site. The emission rate for fugitive dust is nearly

impossible to estimate accurately because of its elusive nature and because the potential for its generation varies greatly depending upon the type of soil at the construction site, the amount and type of dirt-disturbing activity taking place, the moisture content of exposed soil in work areas, and the wind speed. The EPA [3] has provided a rough estimate for uncontrolled fugitive dust emissions from construction activity of 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and precipitation/evaporation (P/E) index of 50. Uncontrolled fugitive dust emissions in the project area would probably be somewhere near this level. In any case, State of Hawaii Air Pollution Control Regulations [4] require that visible emissions of fugitive dust from construction activity be essentially nil.

Adequate fugitive dust control can usually be accomplished by establishment of a frequent watering program to keep bare-dirt surfaces in work areas from becoming significant dust generators. Control regulations also require that open-bodied trucks be covered at all times when in motion if they are transporting materials likely to give rise to airborne dust. Paving of parking areas and establishment of landscaping as early in the construction process as possible can also lower the potential for fugitive dust emissions.

On-site mobile and stationary construction equipment will also emit some air pollutants in the form of engine exhausts. The largest of this equipment is usually diesel-powered. Nitrogen oxides emissions from diesel engines can be relatively high compared to gasoline-powered equipment, but the standard for nitrogen dioxide is set on an annual basis and is not likely to be violated by short-term construction equipment emissions. Carbon monoxide emissions from diesel engines, on the other hand, are very low and should be relatively insignificant compared to vehicular emissions on nearby roadways.

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

## 6.0 LONG-TERM DIRECT AND INDIRECT IMPACTS

### 6.1 Industry Emissions

Air pollution emissions from industries locating at the proposed light industrial park could potentially result in direct impacts on air quality. While the specific industrial residents of the proposed project have not yet been identified, a market study has been conducted to determine the types of industries that would likely occupy the site. The market study indicated that the proposed industrial park would most probably be used for building contracting, wholesaling and distributing, manufacturing, building materials storage, and automotive parts and services. From an air quality impact perspective, none of these probable uses has the potential to emit significant amounts of air pollution except perhaps for manufacturing.

The elevation at the bottom of Kipapa Gulch is about 275 feet above sea level. The gulch is roughly 300 feet across with a major axis that is oriented in a north-northeast/south-southwest direction. Hillsides to the east and west rise about 200 feet above the ravine floor. During tradewind conditions, airflow through the gulch will tend to be channeled to the south, and any air pollution emissions emanating from the proposed

industrial park will be carried southward over Kamehameha Highway. During periods of light winds, emissions will likely accumulate in the gulch and/or impact on the adjacent hillsides.

Due to the topography surrounding the project site and the potential for stagnation and/or plume impact on the adjacent hillsides, it would be inadvisable to locate any manufacturing facilities on the project site that would emit more than moderate amounts of air pollution. Some of the likely industries to be avoided would include most of the mineral products industry and any industries that would burn large amounts of fuel oil.

Without specific information concerning stack heights and stack gas temperatures, exit velocities and emission rates, air quality impacts from the potential manufacturing facilities cannot be quantitatively estimated. At the present time, such detailed information is not available. However, Hawaii air pollution control rules [4] require that any activity that causes air pollution must first obtain written approval from the director of the Hawaii Department of Health. This written approval generally involves applying for both a permit to construct and a permit to operate. At the time of application, detailed information must be provided by the applicant concerning the type and nature of any air pollution emissions and the emission control technology that would be utilized. Depending on the magnitudes of the project emissions and other factors, air quality impact analyses and/or air quality monitoring may be required before the application to construct/operate is approved. Thus, even though an assessment of potential direct impacts from project air pollution emissions cannot be done at this time, state rules may require that such analyses be performed at a later date when specific businesses wish to locate at the proposed industrial park.

## 6.2 Roadway Traffic

By serving as an attraction for increased motor vehicle traffic on nearby roadways, the proposed project must be considered to be a potential indirect air pollution source. Motor vehicles with gasoline-powered engines are significant sources of carbon monoxide. They also emit nitrogen oxides and those burning leaded gasoline can also contribute lead to the atmosphere. The use of leaded gasoline in new automobiles is now prohibited. As older vehicles continue to disappear from the numbers of those currently operating on the state's roadways, lead emissions are approaching zero. Nationally, so few vehicles now require leaded gasoline that the EPA is proposing a total ban on leaded gasoline to take effect immediately. Even without such a ban, reported quarterly averages of lead in air samples collected in urban Honolulu have been near zero since early 1986. Thus, lead in the atmosphere is not considered to be a problem anywhere in the state.

Federal air pollution control regulations also call for increased efficiency in removing carbon monoxide and nitrogen oxides from vehicle exhausts. By the year 1995 carbon monoxide emissions are expected to be about one fourth less than the amounts now emitted. At present, however, no further reductions in vehicular emissions have been mandated and increases in traffic levels after 1995 will result in nearly proportional increases in vehicle-related pollutant emissions.

To evaluate the potential long-term indirect air quality impact of increased roadway traffic associated with a project such as this, it is standard practice to utilize computerized atmospheric dispersion models to estimate ambient carbon monoxide concentrations along roadways leading to and from the project. Carbon monoxide is selected for modeling because it is both the most stable and the most abundant of the motor vehicle generated pollutants. Furthermore, carbon monoxide air pollution

is generally considered to be a microscale problem, whereas nitrogen oxides air pollution most often is a regional issue. This is reflected in the fact the AAQS for carbon monoxide are specified on a short-term basis (1-hour and 8-hour averaging times) while the AAQS for nitrogen oxides is set on an annual basis.

Three scenarios were selected for study. The first scenario examined was for the year 1989 with present conditions. The other two scenarios studied were both for the year 1994, one without and the other with the proposed project. To begin the carbon monoxide modeling study, critical receptor areas in the vicinity of the project were identified for analysis. Generally speaking, roadway intersections are the primary concern because of traffic congestion and because of the increase in vehicular emissions associated with traffic cycling: decelerating, stopping, queueing and accelerating. For this study, the intersection of the proposed project access road and Kamehameha Highway was the only location identified for analysis. At the present time, Kamehameha Highway in the immediate vicinity of the project is a two-lane roadway. For the year 1994 scenarios either with or without the proposed project, it is assumed that Kamehameha Highway will remain two lanes wide where it passes through the project area. For the year 1994 with project scenario, two cases were considered: one without a signal at the Kamehameha Highway/project access road intersection and the other with a signal at this location. In the without signal case, right turns only were assumed at the intersection. In the with signal case, both left and right turns were assumed for traffic exiting the proposed project, but no left turns were assumed for southbound traffic on Kamehameha Highway. The traffic analysis report for the project [5] describes the present and future configuration of the proposed intersection and roadways in more detail.

The main objectives of the modeling study were to estimate both current and projected levels of maximum 1-hour average carbon monoxide



concentration which could be directly compared to the national and state AAQS. The traffic analysis report cited above indicates that current traffic volumes along Kamehameha Highway in the project area peak both in the morning and in the afternoon. Morning and afternoon peak-hour traffic volumes are or would be roughly equal in magnitude, but queueing on the project access road would be much more pronounced during the afternoon peak hour. Worst-case meteorological dispersion conditions usually occur during the early morning hours. Also, vehicular emissions are higher in the morning when ambient temperatures are cooler. Thus, even though afternoon traffic counts may be higher, the morning peak traffic hour usually can be expected to cause the highest air pollution concentrations along roadways. However, due to possible effects from the queueing of vehicles at the project access road intersection in the afternoon, both morning and afternoon peak traffic hours were examined to ensure that worst-case concentrations were identified.

The EPA computer model MOBILE3 [6] was used to calculate vehicular carbon monoxide emission estimates for each of the years studied. Based on recent vehicle registration figures, the present and projected vehicle mix in the project area is estimated to be 91.9% light-duty gasoline-powered vehicles, 4.2% light-duty gasoline-powered trucks and vans, 0.5% heavy-duty gasoline-powered vehicles, 1% diesel-powered trucks and buses, and 1% motorcycles. It was assumed that about 21 percent of all vehicles would be operating in the cold-start mode and that about 27 percent would be operating in the hot-start mode. These are standard, default values that are used in calculating cold/hot start emissions. National averages for "mis-fueling" were assumed. Ambient temperatures of 59 and 68 degrees F were used for morning and afternoon peak-hour emission computations, respectively. This is a conservative assumption since ambient temperatures will generally be warmer than this, and emission estimates given by MOBILE3 are inversely proportional to the ambient temperature.

After computing vehicular carbon monoxide emissions through the use of MOBILE3, these data were then input to the computer model CALINE4 [7]. CALINE4 was developed by the California Transportation Department and the EPA to simulate vehicular movement and atmospheric dispersion of vehicular emissions. It is designed to predict 1-hour average pollutant concentrations along roadways based on input traffic and emission data, roadway/receptor geometry and meteorological conditions.

Input peak-hour traffic data were obtained from the traffic study cited previously. The traffic volumes given in the traffic study for the future scenarios include project traffic as well as traffic from other growth that is expected to occur in the area by the year 1994.

Model roadways were set up to reflect actual roadway geometry, physical dimensions and operating characteristics. Model receptor sites were located approximately 10 meters from the edge of the roadways near the intersection studied at a height of 1.5 meters above grade to simulate levels within the normal human breathing zone.

Input meteorological conditions for this study were defined to provide "worst-case" results. One of the key meteorological inputs is atmospheric stability category. For these analyses, atmospheric stability category 6 was assumed for the morning case and stability category 4 was assumed for the afternoon case. These are the most conservative stability categories that can be used for estimating morning and afternoon pollutant dispersion in model calculations. A surface roughness length of 100 cm was assumed with a mixing height of 500 meters. Worst-case wind conditions were defined as a wind speed of 1 meter per second with a wind direction resulting in the highest predicted concentration.

Existing background concentrations of air pollution in the project vicinity are believed to be low. Hence, background contributions of carbon monoxide from sources or distant roadways not directly considered in the analysis were assumed to be close to zero. A small concentration of 0.1 ppm was added to all predicted concentrations for the 1989 scenario to make allowance for background. For the year 1994 scenarios, a background concentration of 0.2 ppm was assumed.

Table 4 summarizes the final results of the modeling study in the form of the predicted maximum 1-hour carbon monoxide concentrations during morning and afternoon peak-hour traffic conditions. These results can be compared directly to the state and the national AAQS. Predicted maximum carbon monoxide concentrations are presented in the table for three scenarios: year 1989 with existing traffic, year 1994 without traffic from the proposed project, and year 1994 with project traffic. The locations of these predicted maximum concentrations all occurred at or very near the intersection in question.

Insofar as present conditions are concerned, the highest worst-case 1-hour carbon monoxide concentration in the area, 1.6 mg/m<sup>3</sup>, was predicted to occur during the morning peak hour. During the afternoon peak hour, the predicted worst-case 1-hour concentration was 0.9 mg/m<sup>3</sup>. Both of these concentrations are well within the state and national 1-hour AAQS.

In the year 1994 without the proposed project, the worst-case 1-hour morning and afternoon concentrations would remain about the same as 1989 levels even though traffic would increase by about 10 percent. The predicted worst-case ambient carbon monoxide concentrations do not increase because vehicles with more effective emission-controls will be

operating on the roadways by the year 1994. Compliance with both the state and the national AAQS would not be a problem.

In the 1994 with project scenario, predictions were made for the Kamehameha Highway/project access road intersection both with and without a traffic signal. In the without signal case, a worst-case 1-hour concentration of  $13.0 \text{ mg/m}^3$  was predicted to occur during the afternoon peak traffic hour. The morning value was only  $2.1 \text{ mg/m}^3$ . The predicted afternoon concentration is relatively high because vehicles exiting the project site would experience long delays. If a fixed-cycle signal is installed, the predicted worst-case afternoon concentration decreases to  $7.7 \text{ mg/m}^3$  while the morning value increases to  $7.0 \text{ mg/m}^3$ . An on-demand signal would reduce the morning concentration because traffic exiting the site would be light. If a signal is not installed, it appears likely that the state 1-hour AAQS could be exceeded after the project is fully developed (although concentrations would remain well within the less stringent national AAQS).

Worst-case 8-hour carbon monoxide concentrations were estimated by multiplying the worst-case 1-hour values by a "meteorological persistence factor" of 0.6. This procedure is recommended in EPA guidelines [8] to account for two factors: (1) traffic volumes averaged over eight hours are lower than the peak 1-hour value, and (2) meteorological dispersion conditions are more variable (and hence more favorable) over an 8-hour period than they are for a single hour. The resulting estimated maximum 8-hour concentrations are indicated in Table 5. The estimated worst-case 8-hour carbon monoxide concentration for 1989 was  $1.0 \text{ mg/m}^3$ . In the year 1994 without project case, the predicted maximum value was  $0.9 \text{ mg/m}^3$ . In the with project case, the year 1994 concentrations were  $7.8 \text{ mg/m}^3$  without a signal and  $4.6 \text{ mg/m}^3$  with a signal. Thus, the state 8-hour AAQS is predicted to be exceeded in the year 1994 with project

scenario if a signal is not installed. All predicted worst-case 8-hour concentrations are within the limits set by the national AAQS.

It should be mentioned here that the above predicted concentrations generally are "hot spot" values. That is, concentrations are not widespread but diminish rapidly with distance from the roadway. It should also be noted that the results of this study reflect several assumptions that must be made concerning worst-case meteorological conditions. As mentioned above, a worst-case wind speed of 1 meter per second with a steady direction was assumed. A steady wind of 1 meter per second blowing from a single direction for an hour is not very likely, and may occur only once a year or less. With wind speeds of 2 meters per second, for example, computed carbon monoxide concentrations would be only about half the values given above.

### 6.3 Electrical Generation

The proposed project would also cause some indirect emissions from power generating facilities. The annual electrical demand of the project when fully developed has not been estimated, but it is not expected to be large. In order to meet the electrical power needs of the proposed project, power generation facilities would be required to burn more fuel and hence more air pollution would be emitted at these facilities. Any air pollution emitted indirectly by electrical generating facilities providing power for the proposed project will likely be relatively insignificant.

### 6.4 Solid Waste Disposal

Solid waste generated by the project will most likely be trucked away and either landfilled or burned at another location. If all refuse is landfilled, the only air pollution emissions associated with solid waste disposal would

be due to exhaust fumes from the trucks and heavy equipment used to place the refuse in the landfill. If, on the other hand, all or part of the refuse is burned at a municipal incinerator or other facility (such as H-Power), disposal of solid waste from the project would also result in the emissions of particulate, carbon monoxide and other contaminants from the incineration facility. There are no estimates of the amount of solid waste that will be generated by the project, but the amount will likely be small.

#### 7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on air quality data for nearby monitoring stations, modeling of carbon monoxide emissions from vehicles traversing Kamehameha Highway, and considering the location and character of the proposed project site, it appears likely that all state and national air quality standards are currently being met in the project vicinity. Without the proposed project, air quality in the Kipapa Gulch area will likely remain about the same for the next several years.

Assuming the project is built, short-term direct and indirect air quality impacts would result from project construction. Fugitive dust emissions will occur due to site grading and other construction activities, and fumes from gasoline- and diesel-powered construction equipment will also be emitted. The movement of construction equipment and the commuting of construction workers to the site will also cause more air pollution in the area, albeit temporary. Fugitive dust emissions can and should be controlled by watering of work areas and by covering open-bodied trucks. Paving of parking areas and roads and establishing landscaping early in the construction schedule will also reduce fugitive dust emissions. Exhaust emissions from construction equipment should be relatively inconsequential. If construction-related traffic to and from the site causes a problem with traffic movement in the area, work schedules could be adjusted to avoid peak traffic hours.

Depending on the types of industries that locate at the proposed industrial park, long-term impacts on air quality could potentially occur as a direct result of industry emissions. A quantitative analysis of the potential impacts cannot be done at the present time because the specific industries have not yet been identified. However, any of the prospective occupants emitting air pollution will be required to apply for state permits to construct and to operate. Before granting a permit to construct or a permit to operate, the state may require the applicant to prepare an air quality impact assessment. Although definite buyers for the lots have not been identified, based on the types of industries identified in the project market study, it appears likely they will not be excessive emitters of air pollution. Due to the recessed character of the project site, it would be advisable to exclude any emission-prone facilities.

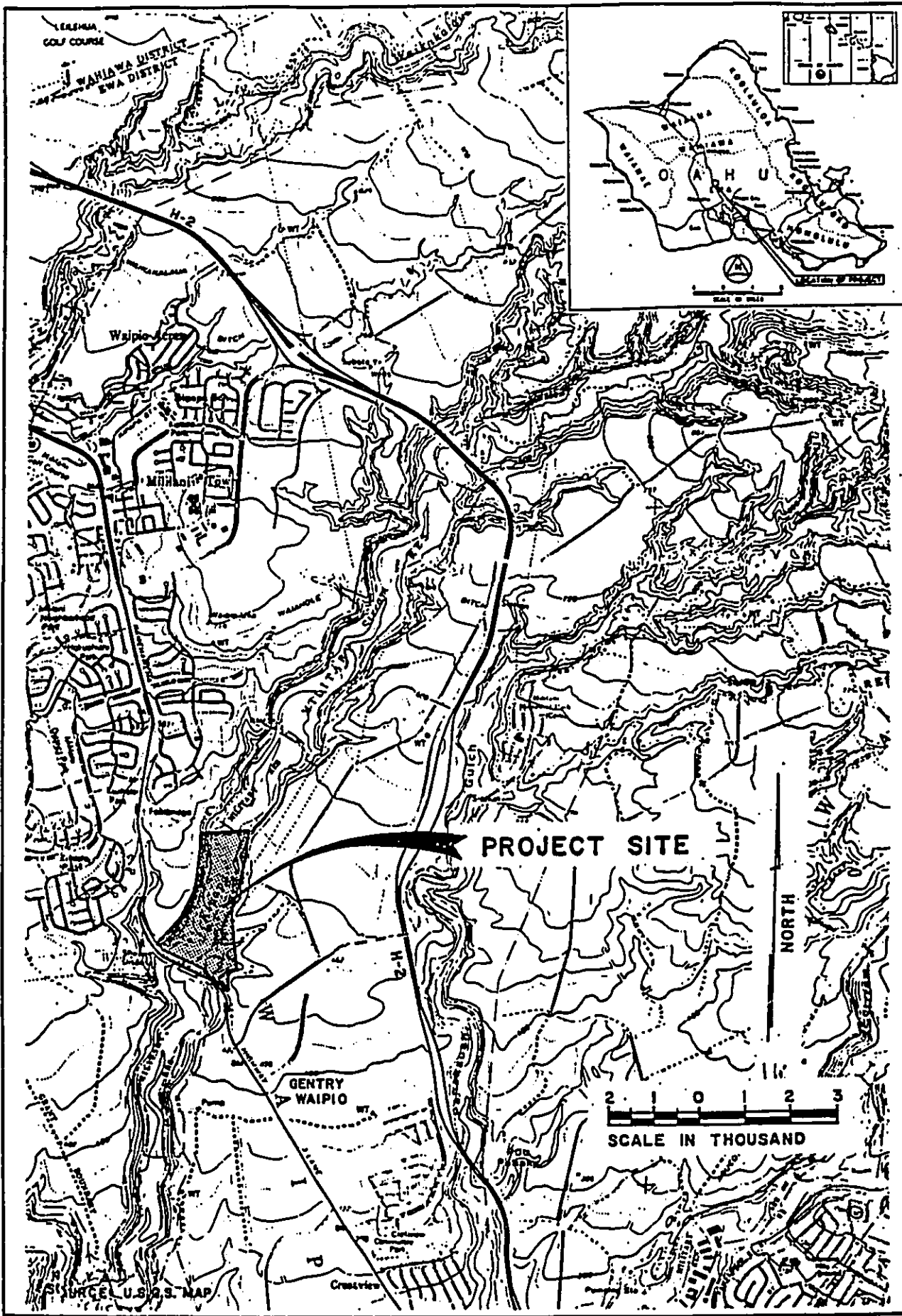
Emissions from vehicular traffic associated with the proposed project when at full occupancy will result in long-term, indirect impacts on the local air quality. Air quality model projections predict that both the state 1-hour and 8-hour standards for carbon monoxide could be exceeded in a small "hot spot" area near the intersection of Kamehameha Highway and the project access road if the intersection is unsignalized. This would be due primarily to long delays for vehicles exiting the industrial park during the afternoon. If a signal was installed, the model predicts that the state standards would be met. An on-demand signal would help to reduce air pollution during the morning by minimizing delays for through traffic on Kamehameha Highway.

Some long-term impacts could also potentially occur due to the indirect emissions from power generating facilities supplying the project with electricity and from the burning of solid waste created by industries occupying the project. Quantitative estimates of these impacts cannot be made, but it appears likely that project power demand and solid waste requirements will be relatively small.

#### REFERENCES

1. U.S. Congress. Clean Air Act Amendments of 1977 (P.L. 95-95), Section 109, National Ambient Air Quality Standards, August 1977.
2. U.S. Environmental Protection Agency. Revisions to National Ambient Air Quality Standards for Particulate Matter, Federal Register, Vol. 52, p. 2463, July 1, 1987.
3. Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fourth Edition Including Supplement A, AP-42, U.S. Environmental Protection Agency, Research Triangle Park, NC, September 1985.
4. State of Hawaii. Hawaii Administrative Rules, Chapter 11-60, Air Pollution Control.
5. Traffic Analysis for Proposed Light Industrial Park at Kipapa Gulch, Parsons Brinckerhoff Quade & Douglas, Inc., December 9, 1988.
6. User's Guide to MOBILE3 (Mobile Source Emissions Model), EPA 460/3-84-002, U.S. Environmental Protection Agency, June 1984.
7. CALINE4 - A Dispersion Model for Predicting Air Pollutant Concentrations Near Roadways, FHWA/CA/TL-84/15, California State Department of Transportation, November 1984 with July 1985 Revisions.
8. Guidelines for Air Quality Maintenance Planning and Analysis; Indirect Sources, Volume 9 Revised, U.S. Environmental Protection Agency, September 1978.
9. Compilation of Air Pollutant Emission Factors, Second Edition, AP-42, U.S. Environmental Protection Agency, Research Triangle Park, NC, August 1977.





PROPOSED KIPAPA INDUSTRIAL PARK

LOCATION PLAN

FIG. 1

Table 1

SUMMARY OF STATE OF HAWAII AND NATIONAL  
 AMBIENT AIR QUALITY STANDARDS (AAQS)

Pollutant (units)	Averaging Time	Maximum Allowable Concentration		
		National Primary	National Secondary	State of Hawaii
Suspended Particulate Matter (ug/m <sup>3</sup> )	Annual	-	-	60 <sup>a</sup>
	24 Hours	-	-	150 <sup>b</sup>
Particulate Matter <sup>c</sup> (ug/m <sup>3</sup> )	Annual	50	50	-
	24 Hours	150 <sup>b</sup>	150 <sup>b</sup>	-
Sulfur Dioxide (ug/m <sup>3</sup> )	Annual	80	-	80
	24 Hours	365 <sup>b</sup>	-	365 <sup>b</sup>
	3 Hours	-	1300 <sup>b</sup>	1300 <sup>b</sup>
Nitrogen Dioxide (ug/m <sup>3</sup> )	Annual	100	100	70
Carbon Monoxide (mg/m <sup>3</sup> )	8 Hours	10 <sup>b</sup>	-	5 <sup>b</sup>
	1 Hour	40 <sup>b</sup>	-	10 <sup>b</sup>
Ozone (ug/m <sup>3</sup> )	1 Hour	235 <sup>b</sup>	235 <sup>b</sup>	100 <sup>b</sup>
Lead (ug/m <sup>3</sup> )	Calendar Quarter	1.5	1.5	1.5

<sup>a</sup>Geometric mean

<sup>b</sup>Not to be exceeded more than once per year

<sup>c</sup>Particles less than or equal to 10 microns aerodynamic diameter

Table 2

AIR POLLUTION EMISSIONS INVENTORY FOR  
CITY AND COUNTY OF HONOLULU, 1980

Source Category	Emissions (tons/year)				
	Particulate	Sulfur Oxides	Nitrogen Oxides	Carbon Monoxide	Hydrocarbons
Steam Electric Power Plants	2,092	36,736	12,455	1,065	184
Gas Utilities	14	0	199	0	0
Fuel Combustion in Agricultural Industry	1,088	579	358	0	31
Refinery Industry	622	7,096	2,149	266	2,584
Petroleum Storage	0	0	0	0	1,261
Metallurgical Industries	28	96	40	0	0
Mineral Products Industry	6,884	1,883	597	0	31
Municipal Incineration	42	145	2,029	0	184
Motor Vehicles	1,413	1,014	17,270	239,198	22,853
Construction, Farm and Industrial Vehicles	184	193	2,507	3,729	338
Aircraft	382	145	1,751	5,594	1,476
Vessels	42	386	438	533	123
Agricultural Field Burning	1,399	0	0	15,982	1,692
<b>Total:</b>	<b>14,190</b>	<b>48,273</b>	<b>39,793</b>	<b>266,367</b>	<b>30,757</b>

Source: State of Hawaii, Department of Health

Table 3

ANNUAL SUMMARY OF AIR QUALITY MEASUREMENTS  
FOR MONITORING STATIONS NEAREST KIPAPA

Parameter/Location	1985	1986	1987
<b>Sulfur Dioxide</b>			
Barbers Point			
No. of 24-Hr Samples	59	57	53
Range of 24-Hr Values (ug/m3)	10-48	<5-10	<5-13
Average Daily Value (ug/m3)	24	<5	5
No. of State AAQS Exceedances	0	0	0
<b>Particulate</b>			
Pearl City			
No. of 24-Hr Samples	47	60	51
Range of 24-Hr Values (ug/m3)	16-62	17-65	20-61
Average Daily Value (ug/m3)	35	29	34
No. of State AAQS Exceedances	0	0	0
<b>PM-10</b>			
Pearl City			
No. of 24-Hr Samples	-	61	63
Range of 24-Hr Values (ug/m3)	-	9-30	8-32
Average Daily Value (ug/m3)	-	16	15
No. of State AAQS Exceedances	-	NA	NA
<b>Carbon Monoxide</b>			
Honolulu			
No. of Daily Samples	342	348	345
Range of Daily Max. 1-Hr Values (mg/m3)	0.0-10.4	0.2-13.5	0.3-11.1
Avg. Daily Maximum 1-hr Value (mg/m3)	1.5	2.2	1.7
No. of State AAQS Exceedances	1	3	1
<b>Ozone</b>			
Sand Island			
No. of Daily Samples	341	346	342
Range of Daily Max. 1-Hr Values (ug/m3)	8-198	10-88	4-84
Avg. Daily Maximum 1-hr Value (ug/m3)	43	39	38
No. of State AAQS Exceedances	3	0	0
<b>Lead</b>			
Liliha			
No. of 24-Hr Samples	58	61	59
Range of 24-Hr Values (ug/m3)	0.0-0.5	0.0-0.3	0.0-0.1
Average Quarterly Value (ug/m3)	0.2	0.0	0.0
No. of State AAQS Exceedances	0	0	0

Source: "Hawaii Air Quality Data for the Period of January 1985 to December 1987", State of Hawaii Department of Health

Table 4

ESTIMATED WORST-CASE 1-HOUR CARBON MONOXIDE CONCENTRATIONS  
 DURING PEAK TRAFFIC HOURS AT INTERSECTION OF  
 KAMEHAMEHA HIGHWAY AND KIPAPA GULCH ACCESS ROAD  
 (milligrams per cubic meter)

Period	Year/Scenario		
	1989/ Present	1994/ Without Project	1994/ With Project
AM Peak Hour (w/o signal)	1.6	1.5	2.1
PM Peak Hour (w/o signal)	0.9	0.9	13.0
AM Peak Hour (w/ signal)	-	-	7.0
PM Peak Hour (w/ signal)	-	-	7.7

Hawaii State AAQS: 10  
 National AAQS: 40

Table 5

ESTIMATED WORST-CASE 8-HOUR CARBON MONOXIDE CONCENTRATIONS  
 AT INTERSECTION OF KAMEHAMEHA HIGHWAY AND  
 KIPAPA GULCH ACCESS ROAD  
 (milligrams per cubic meter)

Intersection Configuration	Year/Scenario		
	1989/ Present	1994/ Without Project	1994/ With Project
Without signal	1.0	0.9	7.8
With signal	-	-	4.6

Hawaii State AAQS: 5  
 National AAQS: 10

# Appendix H

ARCHAEOLOGICAL SURVEY



# B I S H O P M U S E U M

1525 BERNICE STREET • P.O. BOX 19000-A • HONOLULU, HAWAII • 96817-0916 • (808) 847-1511 • FAX (808) 841-8968

April 10, 1989

Mr. W. Y. Thompson  
98-1051 Kahapili Street  
Aiea, Hawai'i 96701

## POST FIELD SUMMARY:

Surface Survey of Proposed Light Industrial Park  
Kipapa, Waipio, Ewa, O'ahu Island  
(TMK 9-4-05: 52)

The surface reconnaissance of the subject parcel was conducted on Tuesday, April 4, 1989 by myself and Jeff Pantaleo from the Applied Research Group, Bishop Museum.

The project area is a c.50 acre segment of Kipapa Gulch located inland (north) from immediately below the Kamehameha Highway Bridge. The project area can be divided into three parts, the flat, gulch floor which consists of approximately half of the area, and the two relatively steep gulch sides consisting of approximately quarter of the area on each side. Signs of extensive, compounded previous disturbance abound in the area. The major alterations appear to have been associated with: 1) the construction of the Kamehameha Highway bridge, 2) construction of the access road to existing facilities, 3) development of the former dairy and existing chicken farm, 4) use of the existing heavy equipment service depot, and 5) development of the military jet-fuel storage facility located inland of the chicken farms. The vegetation over most of the parcel is indicative of secondary growth following extensive ground altering activities and consist predominantly of spindly, koa haole (*Leucaena leucocephala*), castorbean bushes (*Ricinus communis*) and dense thickets of elephant grass (*Pennisetum purpureum*). In addition the usual array of other exotic grasses, shrubs, and vines were present.

The walk-through, surface survey was concentrated along the lower slopes of the gulch sides and those areas that appeared to be minimally disturbed. No archaeological surface features or exposures of subsurface deposition were observed. All of the existing structures are modern.



The results of the surface survey indicate an absence of significant remains in the subject parcel. However, due to the fact that Kipapa Stream was realigned during modern times, the potential for subsurface deposition in the former flood plain area exists. Thus, prior to construction, following demolition and vegetation clearing, systematic backhoe trenching of selected areas is recommended. In addition, if development plans call for any alteration of the steep gulch sides, a more thorough search for lavatubes in the outcrop faces should be implemented.

The final report for the surface survey is currently under preparation.

If you have any questions or comments, please contact me at 848-4126 or -4189.

Sincerely,



Aki Sinoto  
Public Archaeology Contract Manager  
Applied Research Group

NOTE TO ARCHAEOLOGICAL REPORT:

The complete archaeological report will be filed with:  
Department of Land & Natural Resources  
Office of Hawaiian Affairs  
Department of General Planning

# Appendix I

COMMENTS AND RESPONSES  
TO DRAFT EIS

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

March 23, 1989

Department of the Army  
Directorate of Facilities Engineering  
United States Army Support Command, Hawaii  
Fort Shafter, Hawaii 96858-6000

Attn: John L. Notes, II, Lt. Colonel  
Director of Facilities Engineering

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
THK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review of the draft Environmental Impact Statement for the proposed industrial park at Kipapa Gulch.

The project will not require any easement or right-of-way of the adjacent military lands as all work is expected to be on site. We appreciate your offer of cooperation.

As confirmed with the Real Estate Section of the Corps of Engineers, there is an easement in favor of the U.S. Government across the property for communication purposes. This easement will be protected and access for operation and maintenance available at all times.

This project will be coordinated with the Corps of Engineers and, as such, information on the status of the project available to the military at all times.

Sincerely,



cc: Corps of Engineers

MAR 24 1989

Directorate of Facilities  
Engineering

Department of General Planning  
City & County of Honolulu  
200 S King Street,  
Honolulu, Hawaii 96813

Dear Gentlemen:

We have reviewed the the Draft Environmental Impact Statement for the Proposed Kipapa Industrial Park, Oahu. The project site will be located in proximity to Kipapa Military Reservation. If rights-of-way at Kipapa Military Reservation will be required for the project, a formal request must be submitted to the Real Estate Management Branch, Planning Division, Directorate of Facilities Engineering, U.S. Army Support Command, Hawaii. The request should include a map delineating the affected Army tracts.

The proposed project will probably not impact current Army activities at Kipapa Military Reservation. However, to avoid conflicts with our future plans in the area we would appreciate being periodically informed of the status of this and other projects.

Thank you for the opportunity to comment on the Draft Environmental Impact Statement. If there are any questions, please contact the Environmental Management Branch at 656-1401/2413.

Sincerely,

JOHN L. NOTES, II

LIEUTENANT COLONEL

John L. Notes II  
Lieutenant Colonel, U.S. Army  
Director of Facilities Engineering

Copies furnished:

Office of Environmental  
Quality Control  
W.Y. Thompson, Consultant



DEPARTMENT OF THE ARMY  
U. S. ARMY ENGINEER DISTRICT, HONOLULU  
HONOLULU, HAWAII 96819  
FT SHAFTER, HAWAII 96858-5440

REPLY TO  
ATTENTION OF

February 2, 1989

Planning Branch

Mr. W. W. Thompson, Consultant  
98-1051 Kahapili Street  
Aiea, Hawaii 96701

Dear Mr. Thompson:

Thank you for the opportunity to review the Draft Environmental Impact Statement for the Proposed Kipapa Industrial Park at Kipapa Gulch, Waipio, Ewa, Oahu. Our previous comments (letter dated November 21) have been incorporated into the DEIS, and we have no additional comments on the DEIS.

Please continue to coordinate with Operations Branch (telephone 418-9258) regarding Department of the Army permit requirements for this project.

Sincerely,

*Kisuk Cheung*  
Kisuk Cheung  
Chief, Engineering Division

DAIRY CO., INC.  
1638 KAW IV ROAD  
HONOLULU, HAWAII 96819

February 21, 1989

Department of the Army  
U.S. Army Engineer District, Honolulu  
Building 230  
Fort Shafter, HI 96858-5440  
Attn: Mr. Kisuk Cheung, Chief Engineering Division

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
TMK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review and comments relating to the proposed Industrial park at Kipapa Gulch. We appreciate the assistance we received from the Corps of Engineers staff at Fort Shafter and the Prince Kuhio Federal Building. As noted in your letter, your agency will be consulted in the design of the project to assure compliance with applicable regulations relating to stream alteration.

Sincerely,  
*Richard A. ...*  
Richard A. ...  
Dairy Co., Inc.



DEPARTMENT OF THE NAVY  
COMMANDER  
NAVAL BASE PEARL HARBOR  
BOX 110  
PEARL HARBOR HAWAII 96820

11010  
Ser 03(09P2)/341  
17 FEB 1990

Office of Environmental Quality Control  
465 S. King Street, Room 104  
Honolulu, Hawaii 96813

Dear Sir:

PROPOSED INDUSTRIAL PARK AT KIPAPA GULCH

We have reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Industrial Park at Kipapa Gulch which was sent to us by your letter of January 19, 1989.

The DEIS states that the existing stream bed is to be replaced with a concrete channel and the area is to be subdivided into smaller lots for industrial use.

The Navy feels that the final EIS should address the possible increase in flow rate of storm water because of the concrete channel and development of the industrial park. The increased flow rate could possibly cause flooding downstream and affect the lands at the Waikole Branch of the Havaal Magazine, Luahala.

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

Sincerely,

R. M. GALTEN  
Captain, CEC U.S. Navy  
Senior Civil Engineer  
By Direction of  
the Commander

Copy to:  
W. Y. Thompson, Consultant  
98-1051 Kahapili Street  
Aiea, Hawaii 96701

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

February 23, 1989

Department of Navy  
Naval Base Pearl Harbor  
Box 110  
Pearl Harbor, HI 96860-5020  
ATTN: R. M. Gallen, Captain, CEC, U.S. Navy  
Base Civil Engineer

REFERENCE: 11010  
Ser 03(09P2)/341

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
THK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for reviewing and submitting comments on the draft EIS relating to the proposed industrial park at Kipapa Gulch.

In response to your statements regarding the proposed concrete lining of Kipapa Stream and its effect on the possibility of increasing stream flow, we offer the following:

1. Kipapa Stream is approximately 50,000 lineal feet long above Roosevelt Bridge on Kamehameha Highway. The estimated concrete channel length is 2000 feet, more or less.
2. The drainage area above Roosevelt Bridge is 7,500 acres. The proposed industrial park is 20 acres, more or less.

In view of the minor nature of the project size as related to the over-all nature of the drainage basin, no significant adverse impact on the Kipapa Stream flow is anticipated. As noted in the draft EIS, the highest measured stream flow was 5,680 cfs based on 29 years of records at a site above the project area. The 100-year storm is expected to generate 19,500 cfs. At such a time, the ground is saturated and all rainfall is attributed to run-off; hence, the short section of concrete lining of Kipapa Stream will have no effect on the magnitude of stream flow.

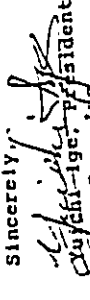
In our study, we have been primarily guided by the need to minimize or prevent pollution of the receiving waters of Pearl Harbor which is the habitat of the nehu, an important resource for our fishing industry. The concrete lining is to prevent or

minimize erosion of the stream channel. Any work on Kipapa Stream will be done under the review and supervision of the U.S. Army Corps of Engineers and the State Department of Land and Natural Resources by its Commission on Water Resource Management whose jurisdictions include channel alterations. Insofar as erosion control is concerned, the project will conform to the City and County standards as reflected in their reports: "Storm Drainage Standards," dated May 1988; and "Soil Erosion Standards & Guidelines," dated November 1975.

For a more comprehensive drainage study of Kipapa Stream, we refer your attention to the study conducted by EDP Hawaii, Inc., dated October 18, 1986, which was cited as a reference in the engineering study performed by Fukunaga & Associates, Inc., for this project (Exhibit E of the draft EIS).

I would like to suggest that your Command be in touch with the Corps of Engineers who can ensure that the Navy's interests are given due consideration during the design and construction stages.

Sincerely,

  
President  
Dairy Co., Inc.

cc: Fukunaga & Associates, Inc.

UNITED STATES  
DEPARTMENT OF  
AGRICULTURE

SOIL  
CONSERVATION  
SERVICE

P. O. BOX 50004  
HONOLULU, HAWAII  
96850

February 15, 1989

Mr. W.Y. Thompson  
98-1051 Kahapili Street  
Aiea, HI 96701

Dear Mr. Thompson:

Subject: Draft Environmental Impact Statement (DEIS) -  
Proposed Industrial Park at Kipapa Gulch, Waipio,  
Ewa, Hawaii

We have no comments to offer at this time, however, we would appreciate the opportunity to review the final EIS.

Sincerely,

*Warren M. Lee*  
WARREN M. LEE  
State Conservationist

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

February 21, 1989

Mr. Warren M. Lee, State Conservationist  
U.S. Soil Conservation Service  
P.O. Box 50004  
Honolulu, HI 96850

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
THK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review of the draft EIS relating to the proposed industrial park at Kipapa Gulch. A copy of the final EIS will be sent you as requested when it is prepared.

Sincerely,  
*Yuching Lee*  
YUCHING LEE, President  
Dairy Co., Inc.





United States Department of the Interior

GEOLOGICAL SURVEY  
WATER RESOURCES DIVISION  
677 Ala Moana Boulevard, Suite 415  
Honolulu, Hawaii 96813



January 20, 1989

W. Y. Thompson  
98-1051 Kahapihi Street  
Aiea, Hawaii 96701

Dear Mr. Thompson:

Subject: Draft Environmental Impact Statement Proposed  
Industrial Park at Kipapa Gulch

The subject EIS for the Proposed Industrial Park at Kipapa Gulch has been reviewed and we offer the following comments to that part of Section 3 that is relevant to the water resources:

Analyses of the water from wells located near and down gradient from the existing well in Kipapa Gulch planned for use has indicated the presence of organics. The State Department of Health ran analyses of the organics of the water from Well 2600-02 about 3 years ago. These analyses are available at the Health Department. Some mention of these analyses and the need for repeat analyses should be made.

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

Sincerely,

*William Meyer*  
William Meyer  
District Chief

DAIRY CO., INC.  
1638 KAN IV ROAD  
HONOLULU, HAWAII 96819

February 13, 1989

Mr. William Meyer, District Chief  
U.S.G.S., Water Resources Division  
677 Ala Moana Boulevard, Ste 415  
Honolulu, HI 96813

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
TM#: 9-4-03: 52  
Owner: Dairy Co., Inc.

Thank you for your review of the draft EIS relating to the proposed industrial park project at Kipapa Gulch. Your statement regarding the water quality of the existing well is pertinent to the project. In line with your suggestion, we have obtained water analyses results from the State Department of Health and have added this to our final report. In addition, we have shown the chloride content of the well for the past five years since the chloride content is an excellent indicator of the quality of water with respect to the amount of water drawn from the well. These figures have been added to SECTION 3: Environmental Setting, 5. Water Resources.

Both your letters regarding this project have been most helpful. Your assistance is appreciated very much.

Sincerely,

*Yuchi Ige*  
Yuchi Ige, President  
Dairy Co., Inc.



United States Department of the Interior  
 FISH AND WILDLIFE SERVICE  
 PACIFIC ISLANDS OFFICE  
 P.O. BOX 50157  
 HONOLULU, HAWAII 96850

ES  
 Room 6307

JAN 17 1989

Mr. Yuichi Ige, President  
 Dairy Company, Inc.  
 1638 Kam IV Road  
 Honolulu, Hawaii 96819

Re: Draft Environmental Impact Statement, Proposed Industrial  
 Park at Kipapa Gulch, Waipio, Ewa, Oahu

Dear Mr. Ige:

Concerns expressed in our letter of December 2, 1988 to W. V. Thompson, Consultant have been addressed. We have no additional comments to offer at this time.

We appreciate the opportunity to comment.

Sincerely yours,

*Ernest Kosaka*

Ernest Kosaka  
 Field Office Supervisor  
 Environmental Services

DAIRY CO., INC.  
 1638 KAM IV ROAD  
 HONOLULU, HAWAII 96819

February 13, 1989

U. S. Fish & Wildlife Service  
 Pacific Islands Office  
 P.O. Box 50157  
 Honolulu, HI 96850

Attn: Mr. Ernest Kosaka

Dear Sir:

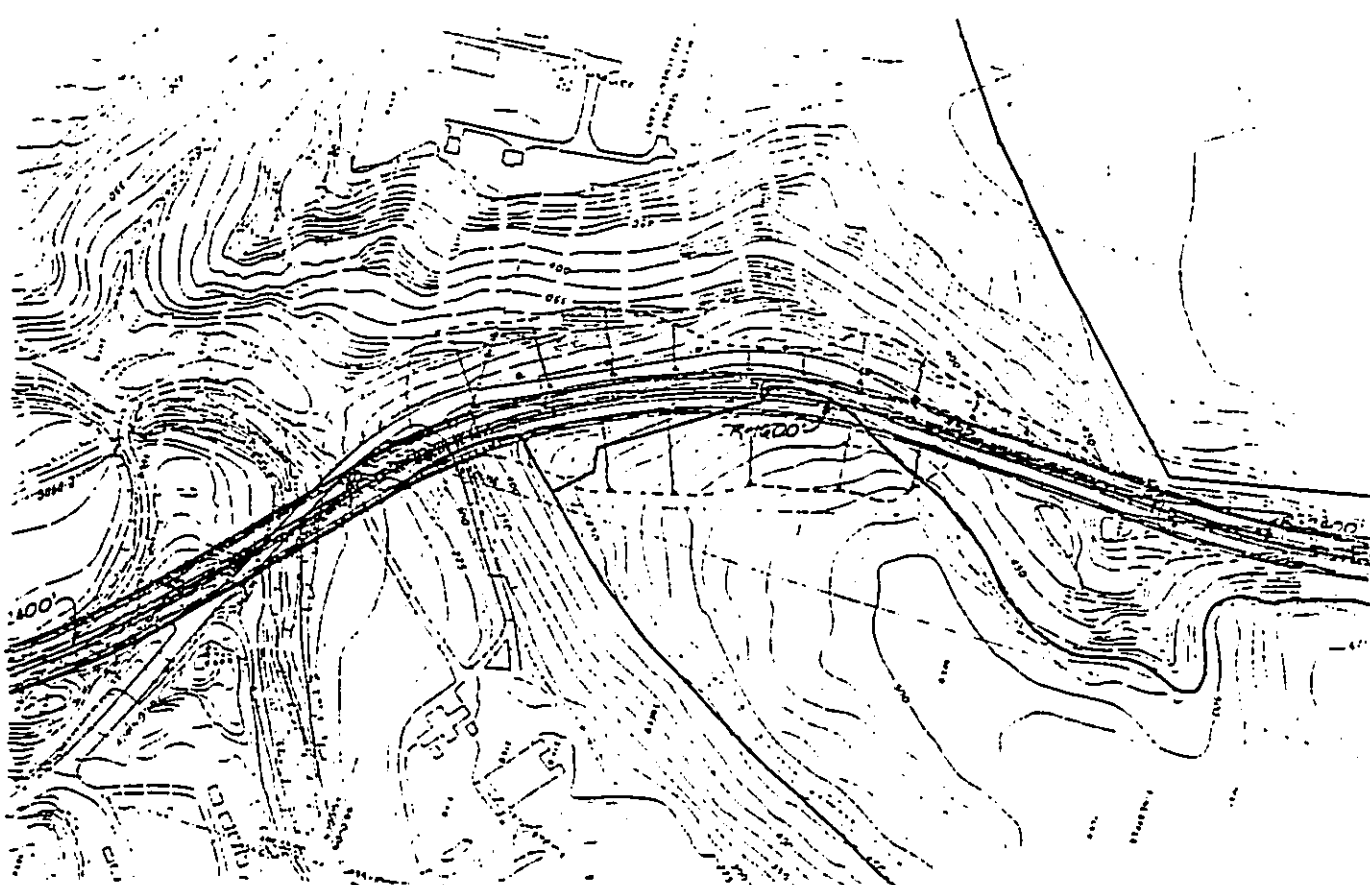
SUBJECT: Proposed Industrial Park at Kipapa Gulch  
 Waipio, Ewa, Oahu  
 TMK: 9-4-05: 52  
 Owner: Dairy Co., Inc.

Thank you for your review of the draft EIS. We are happy that the concerns expressed in your previous letter have been addressed. We appreciate your comments which have been helpful to us in the preparation of the EIS.

Sincerely,

*Yuichi Ige*

Yuichi Ige, President  
 Dairy Co., Inc.



EDWARD Y. HIRATA  
 DIRECTOR  
 HAWAIIAN HIGHWAYS DIVISION  
 DANIEL K. WILSON  
 JEROME S. STARK

99 HIRATA DRIVE  
 HAWAII  
 2-4998



STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 100 SOUTH KING STREET  
 HONOLULU, HAWAII 96813

January 13, 1989

Mr. W. Y. Thompson  
 Consultant  
 98-1051 Kahapili Street  
 Aiea, Hawaii 96701

Dear Mr. Thompson:

Draft EIS, Industrial Park at Kipapa Gulch,  
 Waipio, Oahu, THK: 9-4-05: 52

We have the following comments regarding the proposed Industrial Park:

1. The proposed access should be addressed in greater detail. Emphasis should be focused on the adequacy of required sight distances at the access connections. A copy of the proposed preliminary realignments of Kamehameha Highway at the access location is attached for your further evaluation and analysis of the geometrics of the intersection. The traffic impact analysis report should document the assumptions/calculations used in deriving the recommendations.
2. Lots 1, 20 and 21 will be affected by the proposed widening of Kamehameha Highway. The developer should coordinate with our Highways Division to determine required setbacks for these affected parcels.
3. Construction plans for work within the State Highways right-of-way must be submitted for our review and approval.

We thank you for this opportunity to provide comments.

Very truly yours,

*Edward Y. Hirata*  
 Edward Y. Hirata  
 Director of Transportation

Attachment

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

March 23, 1989

Mr. Edward Y. Hirata, Director  
Department of Transportation  
869 Punchbowl Street  
Honolulu, HI 96813-5097

Reference: HWY-PS 2.4998

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Walpio, Ewa, Oahu  
TRK: 9-4-05: 52  
Dairy Co., Inc.

Thank you for your review of the draft Environmental Impact Statement for the proposed industrial park at Kipapa Gulch. In response to your comments, and in consultation with our traffic consultant, we offer the following:

Comment 1:

We agree the proposed access should be addressed in greater detail, with sight distances for highway traffic as well as for exiting vehicles being of primary concern. Final design of the site access will conform to the requirements of the Hawaii Statewide Uniform Design Manual for Streets and Highways. Further, the access and the layout of the subdivision should account for any future highway realignment plans and will need to be coordinated with the Highways Division. A copy of the consultant's calculations has been transmitted to your Highways Division Planning Branch as requested.

Comment 2:

Thank you for the information regarding the highway widening impact as related to setbacks for the affected parcels of the proposed industrial lots. We will coordinate the final subdivision plans with your Highways Division.

Comment 3:

As is the case with any work proposed within a State Highway right-of-way, construction plans will need to be submitted for review and approval by your department. This, of course, relates to the access road as well as for the pipelines for transporting wastewater to the existing City manhole on Kamehameha Highway.

In closing, we wish to point out that there is existing traffic into and out of the project site whose safety is also our concern. Even without the proposed industrial park, traffic can be expected to increase as the project site will have to be put to some agricultural use to generate income to meet costs of owning the property. As such, we look forward to your proposed Kamehameha Highway improvements with great anticipation as providing for the safety not only for the future users of the site but for the existing tenants as well. You may be assured of our full cooperation in this matter.

Sincerely,

cc: Parsons Brinckerhoff Quade & Douglas, Inc.



STATE OF HAWAII  
 DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT  
 HOUSING FINANCE AND DEVELOPMENT CORPORATION  
 P O BOX 29360  
 HONOLULU, HAWAII 96820-1760  
 March 3, 1989

JOSEPH K. CONANT  
 EXECUTIVE DIRECTOR

IN MYST MIURA

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89:PLJIG/724B JT

JOHN WAINALE  
 CHIEF CLERK

DAIRY CO., INC.  
 1638 KAM IV ROAD  
 HONOLULU, HAWAII 96819

March 23, 1989

Mr. Joseph K. Conant, Director  
 Housing Finance and Development Corporation  
 P.O. Box 29360  
 Honolulu, HI 96820-1760

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
 Waipio, Ewa, Oahu  
 THK: 9-4-05: 52  
 Dairy Co., Inc.

Dear Sir:

Thank you for your review of the draft Environmental Impact Statement for the proposed industrial park at Kipapa Gulch. With respect to the impact on housing caused by the project, we expect the population growth of Central Oahu approved by the City Council and the 60% affordable housing units agreed by the large developers of Central Oahu will meet this need. Our goal is to provide an opportunity for jobs to residents of Central Oahu.

The project site is 50 acres in size; about 40 acres will be taken up by the proposed industrial park. The balance of 10 acres has been proposed for residential purposes. There are 13 cottages on this 10-acre parcel. If necessary, and if governmental approval is obtained, additional housing units could be developed on this site. However, no development plans have been made for this parcel at this time.

The improvements to the existing channel is expected to alleviate the problem of flooding caused by a 100-year storm. Since the existing channel will have to be widened, thereby increasing the size of the channel, the resultant velocity will be decreased rather than increased. One of the prime considerations will be preventing or minimizing soil erosion that would adversely impact the receiving waters of Pearl Harbor. Since the channel improvement covers only a short section of Kipapa Stream, its effect on the downstream properties will be minimal. For your information, the channel improvements will require permits from the City and County Public Works Department, the State Department of Land & Natural Resources by its Commission on Water Resource Management, and the U.S. Army Corps of Engineers. This will ensure proper attention to the work on the drainage channel.

Sincerely,

MEMORANDUM

TO: Dr. Marvin T. Miura, Director  
 Office of Environmental Quality Control

FROM: Joseph K. Conant

SUBJECT: Draft Environmental Impact Statement for the Proposed Industrial Park at Kipapa Gulch

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

It is estimated that the proposed industrial park could generate approximately 300 jobs. Our major concern is the impact of the proposed project on housing. For example, if the proposed project generates a demand for affordable housing, then we believe that appropriate measures should be taken to meet this need.

Additionally, a concrete drainage channel is proposed for construction to mitigate flooding of the project site. Will the proposed action increase the velocity of the stream flow onto the properties downstream and thereby adversely impact them?

Thank you for the opportunity to comment.

JOSEPH K. CONANT  
 Executive Director

cc: Department of General Planning  
 W.Y. Thompson



STATE OF HAWAII  
OFFICE OF HAWAIIAN AFFAIRS  
1600 KAPIOLANI BLVD., SUITE 1500  
HONOLULU, HAWAII 96813  
(808) 548-3447  
(808) 548-3447

March 8, 1989

Dr. Harvin Miura, Director  
Office of Environmental Quality Control  
465 S. King St. Room 104  
Honolulu, HI. 96813

Subject: Draft EIS: Kipapa Industrial Park, Waipi'o, O'ahu.  
TMK: 9-4-05: 52

Dear Dr. Miura:

Thank you for sending our office a copy of the Draft EIS, and for the opportunity to comment. Because of the historical significance of Kipapa Gulch, as the site of a famous battle, and the location of two important heiau sites, an archaeological survey should be conducted in the project area. Too often it is assumed that agricultural and urban areas lack archaeological resources of interest. On the contrary, most of the archaeological knowledge that exists comes from excavations conducted in highly developed agricultural and urban areas. It is reasonable to expect that an intensive survey of the project area would locate evidence for prehistoric Hawaiian activities on the property, including garden areas and house sites. Such remains may seem insignificant when compared with better preserved sites elsewhere, but they may also contain fragmentary clues to such interesting problems as the dates for early settlement in Hawaii. Please send our office a copy of any archaeological reports that may result from this project.

Historical significance extends to non-traditional cultural remains as well, and it is even possible that some of the older structures on the property meet the criteria of eligibility for the National Register. The potential for historical archaeology on the property should be addressed, as well as a professional evaluation of the existing structures.

Sincerely,

*Richard K. Paglinawan*  
Richard K. Paglinawan  
Administrator

RKP:EH:k1r

cc: DGP/City and County of Honolulu  
M.Y. Thompson.  
DLNR/Historic Sites  
Environmental Center/U.H.

C-189-0022

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

March 31, 1989

Mr. Richard K. Paglinawan, Administrator  
Office of Hawaiian Affairs  
1600 Kapiolani Blvd., Ste 1500  
Honolulu, HI

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
TMK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review and comments on the draft EIS for the proposed industrial park project at Kipapa Gulch.

A consultant has been retained to conduct a reconnaissance survey of the project site. Findings and recommendations emanating from this study will be incorporated in the final EIS.

A summary report will be included in the final EIS. As requested, we shall be happy to furnish your office with the complete report. Complete copies of the report will also be submitted to the State Historic Preservation Office and the City Department of General Planning.

We appreciate your cooperation and should any significant item of archaeological interest surface. We will consult with your office again. Thank you.

Sincerely,

*Richard K. Paglinawan*



# University of Hawaii at Manoa

Environmental Center  
Crawford 317 • 2530 Campus Road  
Honolulu, Hawaii 96822  
Telephone (808) 918-7461

March 6, 1989  
RE:0521

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

Dear Sir:

Draft Environmental Impact Statement  
Kipapa Gulch Industrial Park  
Halpio, Ewa, Oahu

The above referenced document proposes to develop a light industrial park at Kipapa Gulch. The site is presently owned by Dairy-Co., Inc. and consists of 50.152 acres, of which 39.6 acres is proposed for the project and 10.6 acres will remain as a single family, low rental housing site. The 39.6 acres will be subdivided into 21 lots ranging from approximately 0.6 to 2.3 acres in size. The area is presently in the State Land Use Agricultural District and is zoned AG-1 by the City and County.

This review was conducted with the assistance of Paul Ekern, Water Resources Research Center; Peter Flachsbart, Urban and Regional Planning; Michael Graves, Anthropology; and C. Anna Ulaszewski, Environmental Center.

### General Comments

We seriously question the adequacy of this document in regards to disclosure of impacts. According to Title 11, Chapter 220-16: "The contents shall fully declare the environmental implications of the proposed action and shall discuss all relevant and feasible consequences of the action." As noted in the following sections, substantive concerns have been voiced by our reviewers over several areas of inadequacy.

### Archaeology

Page 22, Section 9 of this document states: "Due to the long use of the site for agricultural pursuits and in a dairy operation for many years, surface and near sub-surface archaeological structures, if any, would have been obliterated". According to page 19, paragraph 3, "no

A UTA OF HAWAII PROJECTS RESEARCH CENTER  
AN EQUAL OPPORTUNITY EMPLOYER

Department of  
General Planning

-2-

March 6, 1989

archaeological feature has been found on the property". It is unclear from these statements whether an archaeological study actually was conducted in order to make this determination. While the assumption that the site has no archaeological remains may be correct, it cannot be verified without an archaeological study. In view of the historical importance of this site, as stated on page 22, a study should be conducted.

### Noise

There are actually two aspects of noise that should be considered, noise generated by activities within the park and noise generated by traffic on access roads to the park. Any comparison of noise generated by the park with existing noise from Kamehameha Highway is not justified, since the effects of any additional noise will be cumulative.

### Hazardous Waste Generation and Air Quality (within the park)

According to page IV-3, "construction, transportation, and selected manufacturing operations could probably be attracted to the project." All of these operations have the potential to generate hazardous waste and reduce air quality within the area of their operations. It is important that these issues and their direct and indirect impacts be addressed.

### Waste Disposal

Waste disposal is considered an unresolved issue. According to this document, 80,000 GPD sewage will be generated by the park. Since Honolulu Wastewater Treatment Plant is "close to capacity," feasible alternatives need to be evaluated.

### Flooding

Inadequate assessment of the flood peaks of Kipapa stream: According to page 20, the maximum flow recorded at the gaging station located 1.5 miles upstream (station 2128) was 5,680 cfs, in 1963. In addition to station 2128, the records from station 2129, which is located below the proposed park should be reviewed. It was found that a flood peak for April, 1974, overtopped the stilling well with a flow of about 10,000 cfs (Shroeder, 1976, Water Resources Research Center Technical Report 97). The design estimate for the recorded maximum flood peak at station 2128 might be used to calculate the 100-year peak; however, a flood peak of 8,450 cfs has been calculated for this station (Wang, et al, 1970, HIRC TR 42).

No projections for changes in Kipapa stream discharge: There are no projections in the drainage plans for additional discharge into the gulch from proposed future developments on the interfluvies above the gulch.

Department of  
General Planning

-3-

March 6, 1989

Channelization inadequately discussed: The channelization of Kipapa stream would increase the flood peaks below the proposed project site. No reference is made to the effects of this increase on the flooding potential of down stream areas, particularly on the Waikale Military reservation on which the old station 2129 lies.

Also, the 3-fold pairings of the bottom gradients of Kipapa Gulch might well need some explanation in order to plan properly for the effects of altered flows in the gulch. In particular, the break in stream gradient from 3.31 from 1750' to 1850', to only 0.81 from 3850' to 7500' above the mouth suggests some peculiar features in gradient control of the stream bottom that might have bearing on the success of the proposed channelization.

Weather statistics not pertinent: There does exist a battery of data from the Old Pineapple Research Institute Station at Waipio that would be more pertinent to this site than readings taken at Wheeler Air Force Base.

Geomorphology of the Kipapa Gulch

Some review of the geomorphology of the gulch, beyond that of the projected flood zone, might well be in order. The fall walls on the east and west of the proposed project should be assessed with regards to stability.

The issues we have identified should be addressed prior to the approval of the project. We believe they are of potential significance and warrant withholding acceptance of this Draft Environmental Impact Statement until the information noted is provided in an amended Statement.

Thank you for the opportunity to comment on this Draft Environmental Impact Statement.

Yours truly,



John Harrison  
Environmental Coordinator

cc: OEQC

M.Y. Thompson V  
L. Stephen Lau  
Paul Ekern  
Peter Flachsbart  
Michael Graves  
C. Anna Ulaszewski



DAIRY CO., INC.

1638 KAM IV ROAD

HONOLULU, HAWAII 96819

March 31, 1989

Reference: RE:0521

Mr. John Harrison, Environmental Coordinator  
Environmental Center  
University of Hawaii  
2550 Campus Road  
Honolulu, HI 95822

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Maipio, Ewa, Oahu  
TRK: 9-4-05: 52

Thank you for your review and comments on the draft Environmental Impact Statement relating to a proposed industrial park at Kipapa Gulch. In response to your comments, we offer the following:

**Archaeology:**

An archaeological study was conducted and the results have been reported in the final EIS.

**Noise:**

Due to the location of the project site within Kipapa Gulch, it is intended that the type of industrial activities that are to be permitted in the proposed park will be screened to eliminate those that would generate excessive noise levels. This stipulation has been included in the final EIS. It is intended that the compliance with the provisions of noise regulations will be enforced.

**Hazardous Waste Generation and Air Quality:**

An air quality study was conducted and results have been incorporated in the final EIS. Screening of prospective tenants, such as for that dealing with noise levels, will be made to eliminate potential hazardous waste generation type firms. Since the project site abuts Kipapa Stream, a paramount consideration will be the avoidance of spills by excluding those activities, such as firms which manufacture or utilize large quantities of chemicals, which by accident could enter Kipapa Stream.

Similarly, firms which generate excessive emissions will be excluded. As noted in the final EIS, if any question arises, an air quality study must be done by the tenant as a prerequisite to locating within the proposed development.

**Waste Disposal:**

Without access to the City's wastewater system which connects to the Honolulu WWT, the project will not be developed. There is no alternative at this time for waste disposal other than at the Honolulu WWT.

**Flooding:**

The peak flow of Kipapa Stream was determined by an engineering study conducted in conjunction with the Milliani Town development. The stream study, cited in our draft document, and its results have been accepted by the City. As such, we consider that the study which was done according to the City's Storm Drainage Standards, dated May 1986, prevails and we will abide by it. We appreciate your reference to the WRC Technical Reports; we have obtained copies from the WRC and are reviewing them. If any change is required from our initial findings, we will incorporate it in our final design with the concurrence of the City. The flood peak as calculated by Wang, et al., is most interesting.

As to the increase in Kipapa Stream discharge from proposed future developments on interfluvies above the gulch, this should be done by the such developer and reviewed by the City for approval.

**Channelization effect:**

The short distance of channelization, 2,000 feet, as compared to the length of Kipapa Stream above Roosevelt Bridge, 50,000 feet, will have minimal effect on the increase of flood peak. Since the channelization will result in a larger stream area, there will be some mitigating of peak flows. As noted in our draft document, the engineering study was preliminary in nature to identify the impact of flooding of the project site. The completion of final engineering design will be coordinated with and reviewed by the City Public Works Department, State Water Commission and Army Corps of Engineers; any modification can be made at such time. The bottom gradient feature mentioned in your letter will be addressed during the final design stage. Any improvement to adjusting the gradient can be accomplished more properly at this time.

**Geomorphology of site:**

Disturbance of the east and west pali walls, per se, will not be permitted. Each lot owner will be responsible for the proper maintenance of his section of the pali. Since the stability of the pali walls depend in part to the holding feature of the existing vegetation, clearing of the pali walls is discouraged. We have recently discovered that the new Milliani Town development above the west pali wall will divert surface water from cascading over the pali which in the past has been a factor in accelerating erosion of pali wall. This has been reported in the final EIS.

**Weather data:**

We were not aware of the Pineapple Research Center records. Following up your suggestion, we contacted the WRC office and was directed to Dr. Paul Ekern who graciously made available records relating to the project site. The records have been made available to consultants working on this project.

We appreciate the in-depth review conducted by the UII Environmental Center, more particularly your comments on the probable effects of stream channelization. Those points raised in your letter will be given additional consideration during final design.

Thank you.

Sincerely,

A handwritten signature in cursive script, appearing to read "Spokane".

DAIRY CO., INC.  
1638 KAW IV ROAD  
HONOLULU, HAWAII 96819

Send 2-2-89  
CHARLES T. TOGUCHI  
Superintendent



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P. O. BOX 1540  
HONOLULU, HAWAII 96810

January 27, 1989

OFFICE OF THE SUPERINTENDENT

MEMO TO: Dr. Marvin T. Miura, Director  
Office of Environmental Quality Control

F R O M: Charles T. Toguchi, Superintendent  
Department of Education

SUBJECT: Industrial Park at Kipapa Gulch

Our review of the draft EIS on the subject matter indicates that the project should not have any impact on our school enrollment.

Should you have any questions, please call Wallace Okamura at 737-4743.

CTT:WU:jl

cc: W. Thompson, Consultant  
E. Imai, OBS

February 21, 1989

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

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
TMK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review of the draft EIS relating to the proposed industrial park at Kipapa Gulch. Your non-impact comment is appreciated.

Sincerely,  
*Charles T. Toguchi*  
Charles T. Toguchi, President  
Dairy Co., Inc.

JOHN WAIHEE  
GOVERNOR



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

STATE OF HAWAII  
DEPARTMENT OF AGRICULTURE  
1428 So. King Street  
Honolulu, Hawaii 96814-2512

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

January 30, 1989

Mr. William Y. Thompson  
January 30, 1989  
Page -2-

discourage such encroachment or ensure that both the livestock operator(s) and non-agricultural developer/resident(s) clearly understand each other's rights and responsibilities.

Thank you for the opportunity to comment.

Sincerely,

Mr. William Y. Thompson  
98-1051 Kahapili Street  
Aiea, Hawaii 96701

Dear Mr. Thompson:

Subject: Draft Environmental Impact Statement (DEIS) for  
Proposed Industrial Park at Kipapa Gulch  
Daily Company, Inc.  
TMK: 9-4-05: 52 Waipio, Oahu  
Area: 50.152 acres

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

The concerns found in our letter to you (dated November 30, 1988) have been addressed to our satisfaction. We would like to offer further information regarding the following statement made in the DEIS.

Page 14 - "No (milk) quota is available for purchase at this time."

Presently, about 30 percent of the milk quota established for Oahu is now available for purchase. Both Mountain View (Waianae) and Meadow Gold (North Shore) dairies are seeking purchasers for their share of the quota.

Existing and proposed dairies and other livestock operations such as piggeries and poultry are hard-pressed to establish, maintain and/or expand their operations partly as a result of urban encroachment. In the instances where non-agricultural uses encroach upon those few areas which have existing livestock operations, efforts should be made to

*Yukio Kitagawa*  
YUKIO KITAGAWA

Chairman, Board of Agriculture

cc: OEQC  
DLU  
DIP



DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

February 13, 1989

Mr. Yukio Kitagawa, Chairman,  
Board of Agriculture  
P.O. Box 22159  
Honolulu, HI 96822-0159

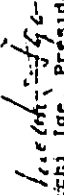
Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Maipio, Ewa, Oahu  
TRK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review of the draft EIS. Your statement regarding the availability of possible purchase of milk quota being offered for sale at this time by other dairies is very interesting. As studies cited in our draft EIS shows, the dairy business is not an easy money-making proposition. As to the possibility of Dairy Co., Inc., purchasing the milk quotas now offered for sale, we can only state that this matter will be taken under advisement. The industrial park proposal has progressed too far to be pulled back at this time.

We will, however, amend our draft EIS to state that milk quotas of two dairies are now being offered for sale.

Sincerely,

  
Yuzchi Ige, President  
Dairy Co., Inc.

JOHN WAINHEE  
GOVERNOR



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

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

Mailing Address:  
P O Box 22159  
Honolulu, Hawaii 96822-1159

March 7, 1989

MEMORANDUM

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

Subject: Draft Environmental Impact Statement (DEIS) for  
Proposed Industrial Park at Kipapa Gulch  
Dairy Company, Inc.  
THK: 9-4-05: 52 Waipio, Oahu  
Area: 50.152 acres

The Department of Agriculture has reviewed the subject DEIS and offers the following comment.

The response from the applicant (dated December 30, 1988) to the concerns expressed in our memorandum on the subject project (to Mr. W. Y. Thompson, dated November 30, 1988) should be included in the final EIS. Specifically, the following should be included: "...the poultry farm was there before the proposed industrial park and the industrial park tenants will accept the present condition as it exists. However, it is expected that the poultry farm operations will continue to use good practice in maintenance of its area to minimize odor."

As we noted in our memorandum of November 30, Chapter 165 of the Hawaii Revised Statutes (the Right-to-farm Act) limits the circumstances under which normal farming activities may be considered a nuisance.

Thank you for the opportunity to comment. We would like to receive a copy of the final EIS.

*Suzanne D. Peterson*

YUKIO KITAGAWA  
Chairperson, Board of Agriculture

cc: OEQC  
Mr. W. Y. Thompson



DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

March 23, 1989

Mr. Yukio Kitagawa, Director  
Department of Agriculture  
P.O. Box 22159  
Honolulu, Hawaii 96822-0159

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Maipio, Ewa, Oahu  
THX: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review of the draft Environmental Impact Statement. Following your letter of January 30, 1989, we amended the document to reflect the current availability of milk quotas. Further, your reference to Chapter 165, HRS, was excellent and to ensure that the intent of said Right-to-Farm Act is clearly understood, we have added the following to the statement in Section 7, pages 44-45, of the draft:

The adjoining poultry farm will generate odor commonly associated with such an enterprise. The lots nearest the poultry farm can expect to be exposed to such malodorous impact, especially following wet weather and downwind conditions. Since the poultry farm will pre-exist the industrial park, tenants of the park will have to accept the status quo. The Hawaii Right-to-Farm Act (Chapter 165, HRS) states:

No court, official, public servant, or public employee shall declare any farming operation a nuisance for any reason if the following have been proven:

1. That the farming operation was not in violation of this section at its established date of operation;
2. That the stated or implied basis for the nuisance complaint is that conditions have changed in the vicinity of the farming operation since its established date of operation;
3. That the farm operation was lawfully in operation for at least one year prior to the nuisance complaint;
4. That the alleged nuisance did not result from the negligent conduct or improper operation of the farming operation; or from any aspect of the operation which is determined to be injurious to public health or safety; and

5. That the alleged nuisance does not involve water pollution or flooding.

(Note: Underlined section added to draft EIS.)

We trust that the above additions to the draft EIS is acceptable and adequately responds to the concern expressed in your letter of March 7, 1989.

Sincerely,





DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT

ENERGY DIVISION 335 MERCHANT STREET, ROOM 110, HONOLULU, HAWAII

JOHN WARD  
COMPTROLLER  
ROGER A. ...  
BARBARA ...  
LIZ ...

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

January 20, 1989

February 12, 1989

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

Energy Division  
Department of Business & Economic Development  
335 Merchant Street, Room 110  
Honolulu, HI 96813

Dear Sir:

Subject: Proposed Industrial Park at Kipapa Gulch

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
TMK: 9-4-05: 52  
Owner: Dairy Co., Inc.

We have received a copy of your letter to the City & County Department of General Planning. Your review of the draft EIS is appreciated.

Thank you for the opportunity to review the Draft EIS. We have no comments to offer at this time.

Sincerely,

*Maurice H. Kaya*  
MAURICE H. KAYA  
Energy Program Administrator

*John W. ...*  
JOHN W. ...  
Dairy Co., Inc.

cc: Mr. M. Y. Thompson, Consultant



STATE OF HAWAII  
DEPARTMENT OF BUSINESS  
AND ECONOMIC DEVELOPMENT



LAND USE COMMISSION

Room 104, 810 Federal Building, 315 Merchant Street  
Honolulu, Hawaii 96813 Telephone: 548-4811

Dr. Edith  
Governor  
RICHARD L. K. HIR  
Chairman  
LAWRENCE F. OHRI  
Vice Chairman

COMMISSION MEMBERS:

Sharon B. Brown  
Honorable Phil Iwatake  
Alice Ogilvie  
Robert Taylor  
Frederick P. Whittemore  
Tara Saito  
Allen B. Lee  
ESTHER UEDA  
Executive Officer

January 18, 1989

Mr. W. Y. Thompson  
98-1051 Kahapili Street  
Aiea, Hawaii 96701

Dear Mr. Thompson:

Subject: Draft EIS for the Proposed Kipapa Industrial Park

We have no comments to offer on the subject draft EIS at this time.

Thank you for the opportunity to comment.

Sincerely,

ESTHER UEDA  
Executive Officer

EU:to

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

February 13, 1989

Ms. Esther Ueda, Executive Officer  
Land Use Commission  
325 Merchant Street, Room 104  
Honolulu, HI 96813

Dear Ms. Ueda:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
THK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for reviewing the draft EIS for the proposed industrial part project at Kipapa Gulch. We will continue to consult with your office as the project moves forward. Any comment you may have to offer at any time will be appreciated.

Sincerely,

YURCHI YEG, President  
Dairy Co., Inc.

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

(P)1065.9

February 13, 1989

JAN 25 1989

Department of Accounting & General Services  
Division of Public Works  
1151 Punchbowl Street  
Honolulu, HI 96813

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

Attn: Mr. Teuane Tomiaga, Chief Engineer

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
THK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Office of Environmental  
Quality Control  
465 South King Street, Room 104  
Honolulu, Hawaii 96813

Gentlemen:

Subject: Draft Environmental Impact Statement  
Proposed Industrial Park at Kipapa Gulch

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

We have received a copy of your letter to the City & County  
Department of General Planning relating to your review of the  
draft EIS. Thank you for your cooperation.

Sincerely,

*Teuane Tomiaga*  
Teuane Tomiaga, President  
Dairy Co., Inc.

Very truly yours,

*Teuane Tomiaga*  
TEUANE TOMIAGA  
State Public Works Engineer

LO:jk  
cc: W. Y. Thompson

JOHN W. WILSON  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF HEALTH

P. O. BOX 338  
HONOLULU, HAWAII 96801

February 21, 1989

JOHN C. LEWIS, M.D.  
DIRECTOR OF HEALTH

IN REPLY, PLEASE REFER TO  
SUBJECT NUMBER 9801

Mr. W. Y. Thompson  
February 21, 1989  
Page 2

Another problem with chicken farms is rodents. Rodent populations are usually high in chicken farms because of the availability of food. Businesses and residents in the area will be subjected to constant rodent activities.

#### Drinking Water

The existing water system, owned by Dairy-Co., Inc., consists of one groundwater well and a 50,000 gallon steel storage tank. We have noted numerous bacteriological violations for this system over the past seven years. The number of violations per year from 1982 to 1988 (to date) are as follows: 1982 (3); 1983 (2); 1984 (1); 1985 (2); 1986 (2); and 1988 (1). The bacteriological problems have frequently been associated with a lack of chlorine residual in the system. Because of the frequent problems with the current system serving only 13 homes, it is our feeling that the system would need to be substantially upgraded in order to meet the requirements of a light industrial park.

Any new wells that would be drilled would be subject to the State's potable water system regulations, Chapter 20, Title 11, Administrative Rules. Section 11-20-29 of Chapter 20 requires new sources of public water system (PWS) water to be approved by the Director of Health prior to their use to serve potable water. Section 29 approval is based primarily upon the satisfactory submission of an engineering report which addresses all concerns set down in the section. The engineering report must be prepared by a registered professional engineer and bear his or her seal upon submittal.

#### Wastewater Disposal

No cesspools or onsite wastewater systems will be allowed. The wastewater generated from the park must be connected to the City and County of Honolulu sewer system.

#### Groundwater Protection

We recommend that Mr. Ije be required to sewer the 13 single-family houses located on his property when the proposed industrial park is connected to a regional sewage collection system or the Honolulu Sewage Treatment Plant. All new residential developments on Mr. Ije's property should be sewered and connected to the system servicing the industrial park. The County should also consider extending this system to service Peterson's poultry farm if it is not currently sewered.

#### Air Pollution

The environmental assessment has stated that the industrial zone will be an I-1 Limited Industrial District in which users are limited to those activities which have few environmental impacts and those which complement the development needs of the community. The industrial district should be further clarified and examples provided on the type of industries or activities that will be allowed in the area. The examples should be the worst-case air or water polluting industries or activities. Obviously, a clothing manufacturer would have less of an environmental impact than an asphalt concrete plant. The environmental assessment should then address the air quality impacts as a result of these industries or activities.

Mr. W. Y. Thompson  
90-1051 Kalaupah St.  
Aiea, Hawaii 96701

Dear Mr. Thompson:

Subject: Draft Environmental Impact Statement (EIS) for Proposed Light Industrial Park, Kipapa Gulch, Waipuu, Ewa, Oahu, Tax Map Key 9-4-05; 52

Thank you for the opportunity to review and comment on the EIS for a proposed light industrial park at Kipapa Gulch, proposed location at the site of the former Waialae Nui Dairy. We provide the following comments:

#### Hazardous Waste

Businesses of the proposed Kipapa Industrial Park that may generate hazardous waste, as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, are advised of applicable Federal Regulations: 40 CFR Parts 260 to 270.

#### Underground Storage Tanks

Proposed businesses that may utilize underground storage tanks (UST) are advised of applicable Federal Regulations. USTs for both fuel and hazardous substances must be designed, installed and operated in accordance with 40 CFR Parts 200 and 201.

#### Vector Control

There are reservations about the proposed industrial development and serious objections about the proposed housing development which would take up approximately 10,560 acres of the parcel.

The area, as described, is made of Peterson's poultry farm and we have objected to this type of development in the proximity of animal farms in other areas of Oahu.

We find problems associated with maintaining poultry farms and pigeries inevitably become a source of severe discomfort to humans and residents of the area. Specifically, flies breed heavily in chicken manure, especially during the rainy season. Pesticides are no longer effective against these flies. Manure management is the only solution; however, this in itself presents another problem, odor.

Businesses and residents downwind will have to contend with constant odor resulting from our efforts to control fly breeding by a process called culling. We require the farmer to allow his manure to pile under the coop, essentially create a condition similar to composting. This process controls fly breeding to an extent but generates foul odor.

Mr. W. Y. Thompson  
February 21, 1969  
Page 3

Noise

There are reservations on the proposed project. In the past, complaints have been received from residents overlooking the Pearl City Industrial Park regarding noise from various activities in an area also zoned I-1 (limited industrial). The present topography may not be adequate to protect existing or planned residences from noise impacts from the proposed project.

Should the proposed project allow for active type industrial use, noise associated with such activities may adversely impact residents of Ithiliam Town, Unit 19. A comparable situation exists in regards to Pearl City Industrial Park, where complaints regarding noise from various activities have been received from residents overlooking this area. The buffer zone identified in the DEIS may not be adequate to protect ridge lining residents from potential noise impacts. In addition, concerns are directed toward heavy vehicles utilized for transportation of goods and services associated with proposed facilities.

In order to minimize potential impacts, mitigative measures should be incorporated into the project design to insure that noise emitted by air conditioning units, exhaust fans and related equipment, and including noise associated with industrial-type activities, comply with the provisions of Title 11, Administrative Rules Chapter 43, Community Noise Control for Oahu.

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 rules.
- b. Construction equipment and onsite vehicles requiring an exhaust of gas or air must be equipped with mufflers.
- c. The contractor must comply with the requirements specified in the rules and conditions issued with the permit.

Sincerely yours,

*Bruce S. Anderson*  
BRUCE S. ANDERSON, Ph.D.  
Deputy Director for  
Environmental Health

DAIRY CO., INC.  
1638 KAW IV ROAD  
HONOLULU, HAWAII 96819

March 31, 1989  
Reference: EPHSD

Dr. Bruce S. Anderson, Deputy Director  
Department of Health  
P. O. Box 3378  
Honolulu, HI 96801

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
TMX: 9-4-85: 52  
Owner: Dairy Co., Inc.

Thank you for your review and comments on the draft EIS for the proposed industrial park at Kipapa Gulch. In response to your comments, we offer the following:

**Hazardous Waste:**

Due to the unusual location of the proposed project, we have amended the draft EIS to provide a screening process to prevent or deter those industries that may cause environmental problems from locating in the proposed industrial park. Since the project site abuts Kipapa Stream, we are especially concerned about the potential of spills or leaks. The reference you have cited relating to the Resource Conservation and Recovery Act of 1976, will be included in our final EIS document.

**Underground Storage Tanks:**

The screening process mentioned above will also apply to those firms installing underground tanks. The reference you have cited will also be included in the final EIS document. Again, the presence of industries that could cause severe environmental problems will be screened. While the proposed industrial park seeks to attract tenants to make it a success, we have an obligation to protect the environment. It is likely that in our screening process, we will call upon your department for information and assistance.

**Air Control:**

We understand the possible nuisance problem that may arise from time to time due to the proximity of the poultry farm. However, it is a condition that all tenants must accept and take whatever measures necessary to mitigate such problem. Under the Right to Farm Act, the poultry farm is legally entitled to continue its operation and we must accept this status quo condition.

**Drinking Water:**

Under plans for the industrial park, the existing private water system will have to be upgraded considerably. The present rather crude method of chlorination will be converted to an automatic operation to assure a more constant acceptance of bacteriological testing. We are also seeking to connect to existing city water mains in this area, if permitted, as an alternative.

The upgrading of the private water system, if carried out, will be processed through the Department of Health and will meet applicable provisions of the department's regulations.

**Wastewater Disposal:**

It is understood that no cesspools or onsite wastewater systems will be permitted in the proposed industrial park project. We have requested permission from the City to connect to the existing wastewater system and will be allowed connection as long as the Honolulu WMP has capacity to accommodate such load on a first-come first-serve basis.

**Groundwater Protection:**

The recommendation that the existing homes be sewerd will be taken under advisement at this time. The homes are old and one of the original 13 units is presently vacant due to its run down condition. As stated in the draft EIS, no plans for the existing homes or the site is planned at this time. The disposition of the existing homes are uncertain to warrant further renovation. This is not to say that this matter will not be pursued.

As to the poultry farm connecting to the new wastewater system of the industrial park, we must defer to the poultry farm owner. Since the wastewater system is to be dedicated to the City, the choice to connect will be left to the poultry farm owner and the City.

**Air Pollution:**

Your comment on the air quality of the prospective industries that may locate in the industrial park is well taken. As mentioned above, we have provided a screening process in the final EIS to prevent industries that may generate excessive emissions from becoming park tenants. In this regard, an air quality survey is underway and will be included in the final EIS. Those firms that are shown to generate excessive emissions will not be permitted entry.

**Noise:**

Your comments with regards to noise is also well taken. In

this matter. too. we have provided a screening process in the final EIS to exclude those industries known to generate excessive noise which may exceed approved levels of the current regulation. Your reference to mitigating the operation of exhaust fans, air conditioning units and related equipment has been added to the final EIS document. We have also included a statement relating to noise control regarding the construction activities that will occur upon approval of this project.

Your comments have been most helpful and we are appreciative of your analysis and recommendations concerning this proposed development. Thank you.

Sincerely,



POLICE DEPARTMENT  
CITY AND COUNTY OF HONOLULU

1535 SOUTH BERTHOUD STREET  
HONOLULU, HAWAII, 96813 - TEL. 535-5111



DOUGLAS G. GIBB  
CHIEF  
HONOLULU POLICE DEPARTMENT

Donald Clegg

-2-

February 8, 1989

FRANK P. PAH  
MAJOR

OUR REFERENCE: ES-LK

February 8, 1989

TO: DONALD CLEGG, CHIEF PLANNING OFFICER  
DEPARTMENT OF GENERAL PLANNING

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

SUBJECT: PROPOSED INDUSTRIAL PARK AT KIPAPA GULCH  
WAIPIIO, EWA, OAHU  
TRK: 9-4-05: 52

We have reviewed the draft environmental impact statement for the proposed industrial park at Kipapa Gulch and wish to offer the following comments.

In general, the project should have a minimal impact on the need for police service. We do not foresee a substantial increase in calls for service as a result of it.

We recommend that consideration be given to appropriate safety and security measures in the design and construction of this project. Specifically, we recommend that parking areas and building perimeters be well lighted during hours of darkness, and that everything be accessible to police patrols.

Before this project goes forward, however, we believe that there is need for a thorough examination of the existing physical limitations on traffic entering and leaving the site. The Wahiawa district patrol command has given extensive consideration to the safety issues inherent in these limitations; these are outlined below.

1. In spite of H-2, there is still heavy traffic on Kamehameha Highway through Kipapa Gulch during the peak periods of the morning and afternoon. There is a steady flow of traffic at all other times.

2. We can anticipate a considerable increase in traffic flowing through Kipapa Gulch when the entrance/exit ramps to H-2 at Milliani Cemetery Road Overpass are completed. This will result from Milliani residents using the Cemetery Road ramps to avoid driving to the ramps at Meheula Parkway.
3. It will be highly unsafe to permit southbound traffic to make left turns into Kipapa Gulch. Likewise, it will be highly unsafe to permit traffic leaving the gulch to make left turns onto Kamehameha Highway to go south. In both cases, vehicles making such turns will be:
  - a. Attempting to cross a lane of rapidly moving traffic.
  - b. Attempting to merge with rapidly moving traffic from a stopped position.Both of these problems are aggravated by the fact that visibility is obscured on all approaches (on Kamehameha Highway going south and north and on the road leaving Kipapa Gulch).
4. In addition, delays in vehicles turning left from Kamehameha Highway into the site will cause southbound traffic to back up. Such backups tend to frustrate drivers and increase the likelihood that they will take risks. This can only increase the hazards for all concerned.
5. It is even hazardous for northbound traffic to make frequent right turns from Kamehameha Highway into the site. A vehicle has to slow to almost a complete stop right at the end of the narrow Roosevelt Bridge to make this turn. This creates a hazard for rapidly moving traffic behind the turning vehicle. And, because of the physical limitations of the site, there is no space for a deceleration lane.
6. Vehicles leaving the site and turning right (northbound) onto Kamehameha Highway have a similar problem. The upgrade will make it difficult for vehicles to merge safely with the traffic on Kamehameha Highway, and the sheer rock mass on the right side of the road leaves no room for an acceleration lane.
7. Even the installation of traffic lights on Kamehameha Highway to facilitate entry and exit from the site is unlikely to make the area safer. This location has a history of frequent and serious (often fatal) accidents, due largely to roadway design and topography. Kamehameha Highway in this area is narrow, twisting, and sloping, and has inadequate shoulders and visibility problems. The portion of the highway immediately south of the access to the Kipapa site is a narrow, two-lane bridge. Any effort to bring traffic to frequent, complete stops there could well result in more accidents than there are now.

Donald Clegg

-3-

February 8, 1989

In summary, we believe that this area needs to be thoroughly studied with regard to traffic safety before any commercial activity that involves substantial vehicular traffic is permitted. We believe that cosmetic changes (such as signs and restriping) will not solve the problems at this location; that left turns into and out of the site are too hazardous; that traffic control signals may create as many or more problems than they solve; and that some major engineering changes are needed to permit safe, regular use of the Kipapa site. Specifically, we believe that acceleration and deceleration lanes are needed on the east side of Kamehameha Highway, which means widening the bridge south of the entrance to the site and cutting away the rock north of it.

Thank you for the opportunity to comment.

DOUGLAS G. GIBB  
Chief of Police

By



JAMES FEMIA  
Acting Assistant Chief of Police

cc: Office of Environmental Quality Control  
W. Y. Thompson, Consultant  
Captain William Gulledege, District 2



DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

March 22, 1989

Mr. Douglas G. Gibb, Chief of Police  
Police Department  
1455 South Beretania Street  
Honolulu, HI 96814

Reference: ES-LK

Dear Chief Gibb:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
TMK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review and comprehensive analysis of the traffic requirements relating to the proposed industrial park at Kipapa Gulch. Our traffic consultant reviewed your correspondence and, in response to your comments, stated the following:

- Comment 1:  
Traffic volumes on the existing Kamehameha Highway have been identified in the traffic assessment.
- Comment 2:  
The existing peak hour volumes were increased for the analyses of future conditions.
- Comment 3:  
The assessment recommends restricting access to right turns into and out of the project at an unsignalized intersection.
- Comments 4 & 5:  
In the final design of the subdivision, the proposed access will be addressed in greater detail, with sight distances for highway traffic as well as for exiting vehicles being of primary concern. Final design of the site access will conform to the requirements of the Hawaii Statewide Uniform Design Manual for Streets and Highways.
- Comment 6:  
A traffic signal, when warranted by traffic conditions, will be designed using accepted State and national standards to provide for safe operations at the intersection.

The consultant also expressed their appreciation for your extensive study of the situation and stated your comments will be helpful in subsequent evaluations of access into the site.

In closing, we would like to mention that there is considerable traffic into and out of the project site. Traffic could increase even without this project if the present agricultural aspects of the site is exploited to its maximum. Therefore, for the present as well as the future tenants of the site, we are hoping for a solution to the existing traffic problem. Fortunately, the State has plans for improvement to Kamehameha Highway which is expected to result in easing the problem which exists to some extent to all users of the highway. We look forward to coordinating our efforts with the State highway engineers to overcome most, if not all, of the concerns stated in your letter.

Sincerely,

cc: Parsons Brinckerhoff Quade & Douglas, Inc.  
Department of Transportation



MILILANI/WAIPIO/MELEMANU NEIGHBORHOOD BOARD NO. 25

PO BOX 3118 - MILILANI, HAWAII 96703

March 17, 1989

William Y. Thompson  
98-1051 Kalapili Street  
Aiea, Hawaii 96701

Dear Mr. Thompson:

Thank you for your letter of January 11, 1989, requesting our views on the Draft Environmental Impact Statement (DEIS) for the Proposed Kipapa Industrial Park. In this regard, we offer the following comments for your consideration:

- (1) The DEIS fails to enumerate and assess the specific kinds of light industrial uses that could or would be allowed. Without such a disclosure and evaluation, it is virtually impossible for ascertain the real, if not true, impact of the proposed Park on the surrounding community.
- (2) The DEIS fails to consider the true impact of the odors from the poultry farm on either the surrounding community or in terms of the marketability of the lots with respect to potential occupants.
- (3) The DEIS fails to address the question of aesthetics as viewed from Kam Highway. This will prove to be particularly relevant if Kam Highway is eventually realigned and elevated.
- (4) The DEIS fails to address whether or not the Roosevelt Bridge is structurally adequate to withstand the added weight of heavy trucks standing on the bridge awaiting the proposed traffic light to change, allowing them to make a right turn into the proposed Park from Kam Highway.

Thank you for the opportunity to offer these comments.

Sincerely,

*Fritz McKenzie*  
Fritz McKenzie  
Chair

cc: Department of Land Utilization  
Tyronne T. Kusao, Planning & Zoning Consultant  
Neighborhood Commission



Office of Neighborhood Hearings System, established 1971

DAIRY CO., LLC.  
1638 KAW IV ROAD  
HONOLULU, HAWAII 96819

March 31, 1989

Mililani/Waipio/Melemanu Neighborhood Board No. 25  
P. O. Box 3116  
Mililani, HI 96789

Attn: Ms. Fritz McKenzie, Chair

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Eva, Oahu  
TMK: 9-4-05: 52  
Owner: 9-4-05: 52

Thank you for reviewing and submitting comments on the draft EIS for the proposed industrial park at Kipapa Gulch. In response to your letter of March 21, 1989, we offer the following information and clarification:

**Comment 1: Types of industrial uses**

It is our intention to limit the type or character of light industrial uses that will occupy the park. Due to the topography of the area, our two primary concerns will involve air quality and noise levels. We have inserted appropriate clauses in the final EIS preventing businesses that will generate excessive emissions or noise levels from operating in the proposed industrial park. Through this procedure, we will exclude, for example, chemical firms that may contribute to air pollution and auto shredding plant with loud compressors and air hammers that most likely will exceed noise level regulations.

**Comment 2: Odors**

Since the poultry farm is an existing agricultural facility, we have been cautioned by the State Department of Agriculture that under the Right to Farm Act, the poultry farm is legally entitled to continue its operations and that adjacent tenants will have to accept the status quo condition. A copy of the Department of Agriculture's letter is attached for your information.

**Comment 3: Aesthetics**

The landscaping of the proposed industrial park will be a requirement imposed on all tenants. At this time, not knowing the exact spatial requirements of the future occupants, we have not prepared a landscaping plan. However, in our Notice of Preparation, we did state that a landscaping plan will be developed. We hope to present any plan which we prepare submitted to this Neighborhood Board for review and comment. In assessing the topography, it

appears that the most appropriate design will include spreading trees as the view will primarily be from above as noted in your letter.

**Comment 4: Structural integrity of Roosevelt Bridge**

A recent inquiry at the State Department of Transportation revealed that all legal loads are permitted on Roosevelt Bridge. As to traffic lights, this matter is still under study and unresolved. At this time, traffic lights will most likely not be permitted by the State; hence our position is that no left turns in or out the project site be allowed for the interim period. When Kamehameha Highway is improved as proposed by the State, the traffic light proposal can be properly evaluated. In working with the State Department of Transportation, we have emphasized that traffic in and out of the project area exists and can increase even without the development of the proposed industrial park. We look to the proposed Kamehameha Highway improvement program as a solution to easing the traffic problems in this area.

We expect to consult with your Neighborhood Board in developing plans for this project. There are other enabling permits: Land Use Amendment and Zoning to be secured. Then, there are the construction permits: grading, drainage control, channel improvements, infrastructure facilities, etc., which must be processed. Therefore, we will appreciate the opportunity to be in touch with this Neighborhood Board to gain your input as our plans progress and to keep you apprized of the status of this project.

Sincerely,  
  
Fritz McKenzie

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



FRANK PARI  
-1100

DONALD A. CLEGG  
Chief Planning Officer

GENE CONNELL  
Deputy Chief Planning Officer

WM/DGP 1/89-78

March 1, 1989

Mr. W. Y. Thompson, Consultant  
98-1051 Kahapili Street  
Aiea, Hawaii 96701

Dear Mr. Thompson:

Draft Environmental Impact Statement  
for the Proposed Kipapa Industrial Park

The Department of General Planning has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Kipapa Industrial Park. The department offers the following comments.

Conformance to Development Plan

The subject parcel is designated Agriculture on the Development Plan Land Use Map for Central Oahu. A request for a change in designation from Agriculture to Industrial and Residential is being processed in the 1989 Annual Amendment Review.

The Development Plan Public Facilities Map designates the portion of Kamehameha Highway fronting the parcel (including Roosevelt Bridge) for proposed roadway improvements, beyond six years, and requiring additional right-of-way. These long range plans could include constructing a new bridge at a higher elevation. A private sewage pump station and force main are also shown on the Public Facilities Map adjacent to the parcel. However, as this is a private sewage system, it is not anticipated that the additional transmission capacity would benefit the proposed development.

It should be noted that infrastructural improvements involved with the proposed project may be required to be shown on the Public Facilities Map. Should the land use change be approved, Form 101s for proposed improvements, such as sewer transmission lines and pump station, drainage improvements, and major collector streets, should be submitted to the Department of General Planning.

Mr. W. Y. Thompson, Consultant  
Page 2  
March 1, 1989

Conformance to General Plan

As a portion of this request involves a change from Agriculture to Residential use, the applicant should be aware that the Central Oahu Development Plan (DP) area has reached its population ceiling as reflected in the General Plan population distribution tables. Any increase in the DP area population for the year 2010 would require an amendment to the General Plan.

Access to Kamehameha Highway

The department has serious concerns relative to the project's proposed access to Kamehameha Highway. These concerns are basically that the applicant's suggested mitigative measures may not adequately address issues of safety at the Kamehameha Highway intersection and that the traffic analysis does not address possible traffic impacts on the adjacent communities.

In addition to a right turn only restriction on vehicles entering or leaving the site, the applicant proposes to restripe the intersection to allow additional shoulder on the east side of Kamehameha Highway in order to improve visibility for vehicles exiting the site. However, upon inspection of the existing conditions at the intersection, it is apparent that additional shoulder area cannot be provided on the east side merely by restriping the existing roadway without reducing the shoulder width on the west side of the highway and/or reducing the highway's lane widths. This department opposes any action which would reduce shoulder or lane widths and compromise the safety of traffic on Kamehameha Highway.

The applicant's only alternative to restriping the intersection is to provide traffic signals and signal warning lights. It is felt that this would disrupt the flow of traffic along Kamehameha Highway. The Honolulu Police Department has stated that traffic control signals would not solve the problem of safe vehicular access to the site and specifically recommended acceleration and deceleration lanes (along with the "right turn only" provision) along the east side of Kamehameha Highway. While this would involve acquisition of additional land area and substantial construction costs in order to widen the road right-of-way, this department would support the provision of acceleration and deceleration lanes as a possible solution to the problem of safe vehicular access to the site.

Mr. W. Y. Thompson, Consultant  
Page 3  
March 1, 1989

The department would also suggest that the acceleration lane extend at least to the point where Kamehameha Highway widens into two northbound lanes and that the access road and its shoulders be radiused to allow tractor trailers to negotiate right turns into and out of the access road without having to encroach into the through-traffic lane.

As noted in the traffic analysis (Appendix F), the State of Hawaii has long range plans to widen Kamehameha Highway in this area and to construct a new bridge over Kipapa Gulch. There is a possibility that the new bridge would be constructed at a higher elevation. In either case, the applicant would be required to reconstruct portions of the access road in order to connect to Kamehameha Highway in its new alignment and configuration. It may be preferable to await the widening of Kamehameha Highway prior to upgrading the access road or to locate some other suitable access route to the site which would not directly access Kamehameha Highway near Roosevelt Bridge.

#### Other Traffic Concerns

The department is also concerned that the traffic analysis does not address potential traffic impacts on adjacent communities. With the right turn only restriction, industrial park traffic would be allowed to enter or leave the site from only the northbound lane of Kamehameha Highway. Southbound traffic would be required to either U-turn at an intersection beyond the site or take a circle route by an alternate roadway (such as the H-2 Freeway). For example, a vehicle headed for Waipahu would exit the site, travel northbound into Mililani and either make a U-turn in Mililani in order to head southbound on Kamehameha Highway or travel through Mililani in order to access the southbound lanes of H-2. Similarly, a vehicle southbound from Mililani would have to travel into Crestview or the Gentry Business Park via either Kamehameha Highway or H-2 and then "backtrack" northbound on Kamehameha Highway in order to gain access to the site.

If it is assumed that each vehicle entering the site makes a roundtrip (that is, returns to its point of origin), it can be expected that one half of the total vehicle trips generated by this development would impact traffic patterns in the adjacent communities. As such, the Final Environmental Impact Statement should address potential adverse impacts on current levels of traffic in the adjacent communities particularly during the afternoon peak hours (which are identified in the Traffic Analysis as having the greatest potential for adverse impacts).

Mr. W. Y. Thompson, Consultant  
Page 4  
March 1, 1989

#### Jet Fuel Storage Facility

The DEIS notes that the U.S. Air Force maintains a jet fuel storage facility within Kipapa Gulch upstream from the project site. Of course, the applicant cannot be held responsible for maintenance and safety measures in place within the jet fuel facility. However, the jet fuel facility places a de facto constraint on urban development within the gulch just by virtue of its existence. In the past, this department has objected to the placement of urban uses, particularly housing, within blast zones, say, for ammunition storage. The department would be hard pressed, given past concerns, to support urban development one half mile downstream of a jet fuel storage facility without substantial mitigative measures.

Certainly berms and stream channelization can limit adverse impacts of liquid fuels on the project site in the event of catastrophic failure of the storage tanks and subsequent discharge of fuel into the gulch. However, if such a catastrophic event was to involve ignition of the discharged fuel, there is no assurance that the effects of blast, heat and fire would be minimized merely by the distance involved. In addition, the presence of industrial chemicals and materials (such as chlorine, flammable gasses and liquids, and so forth) may contribute to the overall hazard in the event of a major conflagration.

The applicant should work with the Air Force in project design and in siting berms and buffers in order to contain the significant destructive effects of a catastrophic event within the upper portion of Kipapa Gulch. The siting of hazardous and noxious chemicals and materials should be controlled in order to keep these uses out of likely avenues of blast and heat. Clear zones should be established and maintained to prevent spread of fire and to allow access for fire fighting equipment. Potential industrial park owners and tenants should be made aware of the potential dangers.

#### Text Correction

While not an environmental issue, page 43 of the DEIS refers to the site's "conversion to an urban-type dairy operations" (sic). Within the normal context of planning nomenclature, dairy operations would hardly be considered "urban" in nature. Therefore, the conclusion, again on page 43, that the site has been in an "urban-type" use since the early 1950s is, in fact, erroneous and misleading. While crops have not been cultivated in over thirty years, the site was in agricultural production. The conversion of the site to dairy operations in no way constitutes an established precedent for urban uses.

Mr. W. Y. Thompson, Consultant  
Page 5  
March 1, 1989

Downstream Impacts

The DEIS does not address potential adverse impacts of the project on the Kipapa Stream and Pearl Harbor ecosystems, and on downstream properties. Of particular interest are potential impacts of runoff and drainage discharge and the possibility of noxious substances (such as industrial chemicals, petroleum byproducts, and the like) leaching into the ground or being carried downstream into the Pearl Harbor basin. The FEIS should address these issues.

Conclusion

The Department of General Planning feels that there are still unresolved environmental issues related to the development of an industrial park in Kipapa Gulch. The department hopes that these issues will be addressed in the Final EIS. Should you have any questions, please contact Bill Medeiros of this office at 527-6089.

Sincerely,

*Donald A. Clegg*

DONALD A. CLEGG  
Chief Planning Officer

DAC:lh

cc: OEQC

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

April 4, 1989

Mr. Donald A. Clegg, Director  
Department of General Planning  
650 South King Street  
Honolulu, HI 96813

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
TMK: 9-4-05: 52  
Owner: Dairy Co., Inc.  
REFERENCE: WH/DPG 1/89-79

Thank you for your review and comments on the draft EIS for the proposed industrial park at Kipapa Gulch. In reviewing your comments, we wish to state the following:

Conformance to General Plan

Thank you for the information relating to the Development Plan features for this area. As noted by you, should the project receive approval, Form 1015 will be submitted to your department regarding the proposed improvements.

Conformance to General Plan

Your reference to the residential use of the 10+ acres site as related to the population ceiling for Central Oahu is appreciated. As stated in our draft EIS, there are no plans for development of this 10+ acres. The cottages in this site were built in support of the dairy which was located in the gulch. Since the dairy ceased operations, these cottages are used as rental units. As they are no longer part of any agricultural pursuit, and since the dairy site is proposed for an industrial park, its association with agriculture is ended. Therefore, it was felt that a residential designation on the Development Plan would be more appropriate for this site. Further, as this was the site of a quarry, there are no productive soils to permit use of this parcel for farming. We realize that any development which seeks to increase the residents on this parcel will necessitate a General Plan change.

Access to Kamehameha Highway and Other traffic concerns

The applicant will evaluate other access alternatives and coordinate access requirements for the proposed project with the Department of Transportation; all comments received in the EIS review will be considered in this evaluation.

Vehicular access to the site, which is presently permitted, will have to be maintained; the applicant will cooperate with the Department of Transportation to locate suitable access to the site when Kamehameha Highway is realigned. Any improved connection to either the existing or new highway will be designed to provide adequate turning radii for the vehicles using the roadways; plans for any improvements will be submitted to the Highways Division for review and approval.

With regard to the other traffic concerns, minimal impact on the adjacent communities is expected since left turn movements that would not be allowed at the project access road are expected to use only Kamehameha Highway, which is expected to be improved in the near future. Further work at this time to identify traffic impacts should be deferred until an acceptable access scheme is developed with the approval of the State.

Jet Fuel Storage Facility

As recommended by you, we will work with the U.S. Air Force to minimize possible hazards in the event of an accident. The project site is also used by the military for a communication easement. Dairy Co., Inc., has a good working relationship with the military and will continue to exhibit a spirit of cooperativeness.

One of the concerns expressed by the U.S. Air Force was the problem of vandalism. We have informed them that this matter will be investigated. They felt the general public would have easier access to their facility. Our earlier letter to them pointed out that the industrial park would be a more tempting target and it is likely that industrial security personnel would be retained by the industrial park tenants. This, then, would assist in the surveillance of the general area.

The development of the industrial park would mean that larger water mains would be installed providing a greater degree of fire protection. This would be most helpful in the event of fire. The poultry farm which lies between the project site and the U.S. Air Force facility would be benefited considerably by this new fire protection system.

Text Correction

We have deleted the reference to "urban-type" use. We had mentioned this since the Land Study Bureau, in their soil productivity rating, had classified the site as urban. It was not our intention to convey the impression that the site is already urban. We regret this mis-interpretation.

Downstream Impacts

We have included in our final EIS document a screening process to eliminate industries that are inappropriate for this site. Our concerns relate to hazardous materials as well as air quality and noise levels. In keeping with the recommendation of the State Division of Aquatic Division and the concern of the Department of Health, we will screen the prospective tenants to prevent those that may contribute to pollution of Kipapa Stream from locating in the industrial park. The strict provisions of the Resource Conservation and Recovery Act, as noted by the Department of Health, will be included in the final document. Some mitigating measure will be provided by stream channelization which will reduce silt from the project site entering Kipapa Stream due to erosion. Please refer to our response to the Department of Health.

Conclusion

We have received many comments from reviewers and several of these have been most helpful in clarifying our statements and assisting us in adding substantive material to the EIS document. We appreciate this help and trust that the final EIS identifies the impacts and that sufficient detail has been provided to describe the handling of these impacts or the mitigation measures that are to be provided.

Thank you.

Sincerely,

*W. Thompson*  
for  
Yuichi Ige, President  
Dairy Co., Inc.



DEPARTMENT OF LAND UTILIZATION  
**CITY AND COUNTY OF HONOLULU**  
430 SOUTH KING STREET  
HONOLULU, HAWAII 96813 • (808) 521-4000



FRANK T. PARI  
DIRECTOR

JOHN P. WHALEN  
DIRECTOR

February 22, 1989

MEMO: DONALD CLEGG  
Page 2

If turning movements at the access road intersection are restricted to right turns in and right turns out, what route(s) might people traveling in an easterly direction on Kamehameha Highway take to enter the access road? Likewise, how might a person exiting the access road enter Kamehameha Highway to travel in an easterly direction?

What is the basis for assuming a 10 percent increase in traffic?

MEMORANDUM

TO: DONALD CLEGG, CHIEF PLANNING OFFICER  
DEPARTMENT OF GENERAL PLANNING

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

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)  
FOR KIPAPA INDUSTRIAL PARK  
HAIPPO, EWA, OAHU; TAX MAP KEY 9-4-05:52

We have reviewed your Draft Environmental Impact Statement (DEIS) and have the following suggestions and questions:

- Water  
What is the projected water demand for the proposed project?  
How will this demand be met?
- Traffic  
The DEIS reports that the State has a long range plan to widen Kamehameha Highway in the area of the intersection leading to the project. Will a new access road be required subsequent to this widening? Who will construct this road?  
Is the short term proposal to restripe Kamehameha Highway at the bridge and install an intersection warning signal acceptable to the Department of Transportation?  
Who will monitor traffic conditions to determine if traffic signals are warranted as suggested on page 47 of the DEIS? Is a traffic signal at this intersection acceptable to the Department of Transportation?

3. Archaeological Resources

An archaeological survey should be conducted to determine the existence of archaeological resources.

4. Kipapa Stream

The preliminary drainage report recommends a channel 2000 feet in length, extending 900 feet mauka of the northern property boundary. This would require the cooperation of the adjacent property owner. The proposed channelization may require permits from the Army Corps of Engineers and the Department of Land and Natural Resources.

How will the proposed industrial park and stream channelization impact the quality and quantity of downstream flows and receiving waters? Will aquatic habitats located downstream be impacted? If stream channelization is disallowed, how would you alter your site plan?

5. Drainage

Where will surface drainage be discharged?

6. Wastewater

Is there existing capacity at the Honolulu Sewage Treatment Plant to accommodate the estimated 80,000 GPD of sewage which will be generated by the industrial park?

MEMO: DONALD CLEGG  
Page 3

7. Existing Land Use

Three Conditional Use Permits (CUP) have been granted for this parcel. The sale and service of machinery used in agricultural production in an AG-1 Restricted Agricultural District is permitted under 86/CUP1-16, 88/CUP1-75, which expires November 15, 1990 allows a wood cutting operation for fire wood. On January 24, 1989 the DMU granted 88/CUP2-4 to allow an agricultural products processing operation (pelletizing chicken manure) in an existing barn on the site. This permit expires five years after the issuance date.

8. Zoning

Should the Development Plan amendment be approved, rezoning of the subject parcel for industrial use would be limited to those areas developable for that use. Areas considered inappropriate for industrial activities should remain in AG-1 zoning.

JPM:sl  
0289N

cc: Mr. Yuichi Ige

*John P. Whalen*

JOHN P. WHALEN  
Director of Land Utilization

DAIRY CO., INC.  
1638 KAM IV ROAD

HONOLULU, HAWAII 96819

April 4, 1989

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

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Eva, Oahu  
TRK: 9-4-05: 52

Thank you for your review and comments on the draft EIS relating to the proposed industrial park at Kipapa Gulch. In response to your questions, we offer the following:

Comment 1: Water

The projected water demand is estimated to be 100,000 to 124,200 gpd as stated in the draft document. The area is presently served by a private water system. The area is to be improved to meet the demands of the proposed project. Appendix E contains a description of the proposed water improvement program.

Comment 2: Traffic

An improved access to Kamehameha Highway will be constructed should the industrial park development be approved. The responsibility will lie with the developer for the access road cost. This will be done in two phases: prior to the Kamehameha Highway widening, access road improvements will improve the right turns into and out of the project site as an interim measure; subsequent to, or rather, in conjunction with the Kamehameha Highway realignment/widening, the long range or permanent access road improvements will be constructed. As to whether or not the access road entry will be performed as part of the Kamehameha Highway widening will be decided by the State Department of Transportation.

The short term proposal to restripe Kamehameha Highway and install warning signal lights has been presented to the State Highways Division. This matter is under study by the State.

The monitoring of traffic conditions to determine when and if signal lights are warranted will be done at the cost of the developer. No decision has been made on a traffic signal at this intersection at this time. Any action by the State will be reported to the City Department of General Planning at such time.

Exiting traffic headed toward Honolulu would turn right onto Kamehameha Highway, then make a U-turn at Lanikuhana Avenue (first) signalized intersection to return on Kamehameha Highway; while some traffic could opt to turn into Mililani to use H-2, this should be deemphasized.

Entering traffic from the north (Mililani/Waiawa) on Kamehameha Highway would drive past the access road, execute a left turn into Ka Uka Boulevard (Gentry Business Park), a U-turn back toward Kamehameha Highway and a right turn onto Kamehameha Highway; improvements to Kamehameha Highway near Ka Uka Boulevard could allow for U-turns on Kamehameha Highway. Southbound traffic on H-2 would exit onto Ka Uka Boulevard at the Waipio Interchange, which is currently under construction, rather than travel down to Waipahu (Waiawa Interchange).

The 10 percent increase is based on the recent increase in Central Oahu General Plan design population.

Comment 3: Archaeological Resources

An archaeological survey has been authorized and the findings and recommendation of the consultant will be included in the final EIS.

Comment 4: Kipapa Stream

Kipapa Stream is approximately 50,000 lineal feet in length above Roosevelt Bridge. The 2,000 lineal feet of channelization is not expected to have any significant effect on the peak discharge. Since the channel will be widened, there is some mitigation effect. What the channelization does from an environmental standpoint is to reduce erosion of the stream banks. Such erosion could add to the degradation of the waters entering the Pearl Harbor Basin and may contribute siltation to the downstream areas. The quality of stream flow will not be materially affected by the project development if channelization is permitted. As noted in the final EIS, a screening process is permitted. Those industries which might affect Kipapa Stream through spills or leaks will mitigate possible adverse impacts. The project, in this respect, will not adversely impact aquatic habitat for the nehu in the waters of Pearl Harbor which was called to our attention by the State Aquatic Resources Division. If stream channelization is disallowed, we will consult with the U.S. Army Corps of Engineers, the State Water Commission, and the City Public Works Department to develop another method of preventing flooding of the project based on the design flood peak discharge.

Comment 5: Drainage

Control of surface drainage will be in accordance with

Chapter 23: Grading, Soil Erosion and Sediment Control of the Revised Ordinances of Honolulu, and the Soil Erosion Standards and Guidelines of the Department of Public Works.

Comment 6: Wastewater

As noted in Appendix E, Engineering Study, the Department of Public Works indicated that there is additional capacity at the Honolulu WTP to accommodate the proposed industrial park discharge. However, this accommodation is on a "first come, first serve" basis.

Comment 7: Existing Land Use

As noted in your letter, three Conditional Use Permits have been granted for businesses currently on the site. Dairy Co., Inc., has been attempting to have the project site generate income to meet expenses for several years now. However minor, these small businesses do contribute to the reduction of expenses. It is with the intent of making the project site a viable enterprise that an industrial park has been proposed since agricultural uses have not materialized.

Comment 8: Zoning

While 39+ acres have been proposed for the industrial park site, the remaining 10+ acres of the 50.152-acre parcel has been recommended for residential uses. This 10+ acres is physically separated from the proposed industrial site by the steep pali walls. The agricultural district zone was appropriate as this 10+ acres was the site for housing of the dairy employees and was part of an agricultural enterprise. Since this 10+ acres is the remnant of a former quarry, there is no productive soil to permit conversion of this site into an agricultural farm enterprise, and hence retaining the AG-1 zoning would be inappropriate. There are still 12 families residing in the former cottages owned by the dairy and, therefore, a residential designation on the Development Plan would be justified.

We hope we have satisfactorily responded to your questions. We are of the opinion that due to the changing character of Central Oahu and looking to the needs of the district, the proposed industrial park would be appropriate. We realize that due to the topography of the area, there are special concerns that must be considered, e.g., traffic, channel improvements, as noted in your letter. We have attempted to identify the impacts of the project and describe the manner in which they would be handled or the mitigation measures that are to be provided.

Sincerely,

*W. J. Thompson*  
for Yuichi Ige, President  
Dairy Co., Inc.

DAIRY CO., IRC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

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



FORM OF PERS  
NOTION

SAM CALLEJO  
DIRECTOR AND CHIEF ENGINEER  
In reply refer to:  
ENV 89-16(449)

February 13, 1989

Mr. Sam Callejo, Director/Chief Engineer  
Department of Public Works  
650 South King Street  
Honolulu, HI 96813

Ref: ENV 89-16(449)

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Maipio, Ewa, Oahu  
THK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review of the draft EIS for the proposed industrial park at Kipapa Gulch. In response to your two statements, I am pleased to report:

1. The wastewater pump station will be constructed according to City & County standards and, upon acceptance, dedicated to the City & County as part of the City's wastewater system for Central Oahu. We are sorry for not clarifying this matter. The following has been added to SECTION 7: Probable Adverse Impacts and Mitigation Measures, Item 3. Waste Disposal:  
"The wastewater system including the pump station will be constructed to City & County standards and dedicated to the City & County upon completion."  
2. As mentioned under SECTION 7: Erosion, page 45 of the draft EIS, erosion control measures shall comply with applicable erosion control standards of the City & County. This will be provided in the construction specifications of the project at a later date and submitted for approval by your department.

We appreciate your timely comments.

Sincerely,

Sam Callejo, President  
Dairy Co., Inc.

January 30, 1989

MEMORANDUM

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

FROM: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)  
PROPOSED INDUSTRIAL PARK AT KIPAPA GULCH  
(TAX MAP KEY: 9-4-05: 52)

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

1. The Environmental Impact Statement should discuss the operation and maintenance of the proposed wastewater pump station.
2. Best management practices should be employed to control erosion and soil loss at the project site during and after construction.

SAM CALLEJO  
Director and Chief Engineer

cc: M. Y. Thompson, Consultant

BOARD OF WATER SUPPLY  
CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANA STREET  
HONOLULU HAWAII 96819



FRANK F. FASO, Mayor  
DUFFAN B. GUTH, Chairman  
JONAS I. SOLO, Vice Chairman  
SCOTT H. HALE, Chairman  
SABU CALLEJA  
LUMBERT T. HANAI  
HARVEY A. HANAI  
MURRAY H. TAMASAITO  
KAZU HAYASHIDA  
Manager and Chief Engineer

February 8, 1989

Mr. W. Y. Thompson  
98-1051 Kahapii Street  
Aiea, Hawaii 96701

Dear Dr. Thompson:

Your Letter of January 11, 1989 on the Draft Environmental Impact Statement for the Proposed Industrial Park at Kipapa Gulch, Waipio, Ewa, Oahu, TMK: 9-4-05: 52

We have no additional comments on the proposed project which will be serviced by a private water system.

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

Very truly yours,

KAZU HAYASHIDA  
Manager and Chief Engineer

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

February 21, 1989

Mr. Kazu Hayashida, Manager/Chief Engineer  
Board of Water Supply  
630 South Beretania Street  
Honolulu, HI 96843

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
TMK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review of the draft EIS relating to the proposed industrial park at Kipapa Gulch. We will be in consultation with your department during the preparation of the construction design and will call Mr. Lawrence Whang as noted in your letter.

Sincerely,

LAWRENCE WHANG, President  
Dairy Co., Inc.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 8TH FLOOR  
HONOLULU, HAWAII 96813  
PHONE: 533-4421



FRANK F. ASH  
DIRECTOR

MICHAEL H. SCAREONE  
DIRECTOR  
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

January 27, 1989

Mr. Donald Clegg, Chief Planning Officer  
City and County of Honolulu  
Department of General Planning  
650 South King Street, 8th Floor  
Honolulu, Hawaii 96813

Dear Mr. Clegg:

Subject: Draft Environmental Impact Statement  
Kipapa Industrial Park  
Central Oahu, Hawaii

Thank you for the opportunity to review and comment on the EIS for Kipapa Industrial Park.

The Department of Housing and Community Development has been requesting that ten (10) percent of all residential units be set aside for low- and moderate-income households, or an acceptable in-kind substitute be provided for all development plan amendments involving residential uses. This policy has up to now only affected residential projects, however, all developments requesting rezoning actions would be subject to some kind of requirement under a Bill for a Community Benefit Assessment Ordinance currently before the City Council. Therefore, the proposed project could be affected by the change in policy.

Thank you for the opportunity to provide these comments.

Sincerely,

MICHAEL H. SCAREONE  
Director

Wcc: W. Y. Thompson, Consultant  
98-1051 Kahapii Street  
Aiea, Hawaii 96701

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

February 13, 1989

Mr. Michael N. Scartane, Director  
Department of Housing & Community Development  
650 South King Street  
Honolulu, HI 96813

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Maipio, Eva, Oahu  
TRK: 9-4-05: 52  
Owner: Dairy Co., Inc.

We have received a copy of your letter to the Department of General Planning. Your comments are appreciated; we were not aware of the proposed ordinance relating to Community Benefit Assessment.

As noted in the draft EIS, a portion of the parcel on which the project is located is proposed for residential use (10+ acres). When planning for expanded residential development of this site (which presently accommodates 13 cottage units) is initiated, we will consult your department. Any requirement under the proposed Community Benefit Assessment can more properly be handled in this manner.

Thank you.

Sincerely,

  
Yutchi Ige, President  
Dairy Co., Inc.

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



FRANK PARI  
MAYOR

FRANK K. KAHOHANOHIANO  
FIRE CHIEF  
1455 BERETANIA STREET, ROOM 305  
HONOLULU HAWAII 96814

January 18, 1989

W. Y. Thompson  
98-1051 Kāhapili Street  
Aiea, Hawaii 96701

Gentlemen:

SUBJECT: EIS: Proposed Industrial Park at Kipapa Gulch  
Maipio, Ewa, Oahu (IHK: 9 4-05:52)  
Owner: Dairy Company, Inc.

We have reviewed the subject material provided and foresee no adverse impact in Fire Department facilities or services, planned or now provided. We have no additional comments at this time.

Should you have any questions, please contact Battalion Chief Kenneth Word of our Administrative Services Bureau at 943-3838.

Very truly yours,

*Frank K. Kahohanohiano*  
FRANK K. KAHOHANOHIANO  
Fire Chief

HA:ny

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

February 13, 1989

Mr. Frank K. Kahohanohiano, Fire Chief  
1455 Beretania Street, Room 305  
Honolulu, HI 96814

Dear Chief:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Maipio, Ewa, Oahu  
IHK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review of the draft EIS relating to the proposed industrial park at Kipapa Gulch. We appreciate your comments and will consult your department when construction plans are initiated in response to the concerns expressed in your earlier letter.

Sincerely,

*Frank K. Kahohanohiano*  
Frank K. Kahohanohiano  
Dairy Co., Inc.



DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

February 13, 1989

Mr. Herbert K. Muraoka, Director  
Department of Building  
650 South King Street, 2nd Floor  
Honolulu, HI 96813

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
THK: 9-4-03: 52  
Owner: Dairy Co., Inc.

We have received a copy of your letter to the Department of  
General Planning regarding the draft EIS for the proposed  
Industrial park at Kipapa Gulch.

Thank you for your review of the document.

Sincerely,

*[Signature]*  
Yu/ishi Ige, President  
Dairy Co., Inc.

PB 89-66

January 24, 1989

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

FROM: HERBERT K. MURAOKA  
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)  
PROPOSED KIPAPA INDUSTRIAL PARK

We have reviewed the draft EIS for the proposed Kipapa  
Industrial Park and have no comments.

Thank you for the opportunity to review the document.

HERBERT K. MURAOKA  
Director and Building Superintendent

TH:JO  
cc: W. Y. Thompson  
J. Harada

245 North Kukui Street, Honolulu, Hawaii 96817, Telephone (808) 537-5060

**AMERICAN LUNG ASSOCIATION of Hawaii**  
The Christmas Seal People

Mr. Donald Clegg  
Director  
Department of General Planning  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Clegg:

Subject: Draft Environmental Impact Statement for the  
Proposed Industrial Park at Kipapa Gulch

We have reviewed the subject EIS with particular attention to those sections addressing air quality. The assessment of air quality impact was rather cursory with no supporting analysis. While traffic at the intersection with Kamehameha Highway was identified as a major impact, no analysis of air quality impact in the area was provided. As a minimum, a simple screening analysis of the cumulative impact should have been included.

Yours truly,

James W. Morrow  
Director  
Environmental Health

JWM:ct  
18907

cc: OEOC  
Environmental Center  
/H. Y. Thompson

Christmas Seals Fight TB, Asthma, Emphysema, Air Pollution

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

March 31, 1989

American Lung Association  
245 North Kukui Street  
Honolulu, HI 96817

Attn: Mr. James W. Morrow

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
THK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review and comments relating to the proposed industrial park at Kipapa Gulch. Your recommendation for a simple screening analysis was pursued following discussion with you. A consultant has been retained for this air quality study and an appraisal of the present air quality will be included in the final EIS.

The air quality study will:

- 1) Qualitatively assess construction-related air quality impacts;
- 2) Quantitatively evaluate indirect air quality impacts from carbon monoxide emissions associated with project-related traffic;
- 3) Qualitatively assess indirect offsite air quality impacts from project electrical generation and solid waste disposal; and
- 4) Qualitatively assess direct impacts on air quality from industries to be located at the project site.

Thank you for your comments and helpful suggestions.

Sincerely,



Hawaiian Electric Company, Inc.

DAIRY CO., INC.  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819



February 12, 1989

January 25, 1989

Mr. W. Y. Thompson  
98-1051 Kahapili Street  
Aiea, Hawaii 96701

Dear Mr. Thompson:

Draft Environmental Impact Statement  
Proposed Industrial Park at  
Kipapa Gulch - TMK 9-1-5:52

Our engineers have reviewed the Draft Environmental Impact Statement for the proposed Industrial Park at Kipapa Gulch and have the following comments and recommendations:

- The three Hawaiian Electric easements should be shown on either Figure 3 (survey map) or Figure 4 (Proposed Light Industrial Park). It is lightly indicated on Figure 5 (Kipapa Gulch) but should be noted more clearly.
  - Appendix A, Market Analysis by John Child & Company, Page 1-2, third paragraph, the overhead easement in favor of Hawaiian Electric should reflect the right of way width, is a perpetual easement, no relocation, no buildings within the easement area, and waivers would be required from tenants under the 138 kv lines spanning across the gulch releasing Hawaiian Electric from any liability.
- The draft EIS also proposes to amend the development plan (Figure 10) to rezone a portion of the lot from agricultural to residential. Right of Way Document No. 57-220 may have an impact on any new development within this portion of the project.

Should you have any questions, please call me at 543-7810. Thank you.

Sincerely,

*Charles T. Ane*  
Charles T. Ane  
Land Agent

20 FEB 1989

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
TMK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review of the draft EIS for the proposed Industrial Park project at Kipapa Gulch. Your recommendations are pertinent to the project and we have made the following additions to the final EIS:

1. The easements shown on Figure 5 have been enhanced and marked more definitively. We regret that the reduction of the base map lost the clarity defining the ownership of the various easements.
2. On page 12 of the draft EIS, under Item 9. Potential Impacts: Existing easements, we have added the following: The easements for the HECO transmission lines which are 100-foot and 25-foot wide as noted on Figure 5, are perpetual easements with provisions specifying no buildings within the easement area (under the power lines; unless waivers are signed by tenants who may erect structures within said easements. No interference with the existing easements owned by HECO, Hawaiian Telco, U.S. Army, et.al., is permitted. The easement owners shall have the right to maintain their facilities at all times."

With respect to the 10,569-acre section which is proposed for residential use, no plans have been made for use of this section at this time. Should development plans be initiated, HECO will be consulted.

Again, thank you for your helpful reviews of the Notice of Preparation and the draft EIS.

Sincerely,

*Yulchi Ige*  
Yulchi Ige, President  
- Dairy Co., Inc.

**GTE Hawaiian Tel**

PO Box 2200  
Honolulu, Hawaii 96841  
Telephone (808) 941-1111

February 2, 1989

W. Y. Thompson  
98-1051 Kahapili Street  
Aiea, Hawaii 96701

Dear Sir:

Draft Environmental Impact Statement  
Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu

We have reviewed the draft Environmental Impact Statement for the proposed industrial park at Kipapa Gulch and have no objections to the project.

Our concerns have been addressed in the draft document.

Sincerely,



Walter M. Matsumoto  
Operations Manager -  
OSP Engineering

LK/SS/st(0159)

DAIRY CO., LLC,  
1638 KAM IV ROAD  
HONOLULU, HAWAII 96819

February 21, 1989

Hawaiian Tel  
P.O. Box 2200  
Honolulu, HI 96841

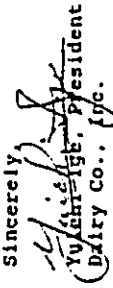
Attn: Mr. Walter M. Matsumoto, Operations Manager

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
Waipio, Ewa, Oahu  
THK: 9-4-05: 52  
Owner: Dairy Co., Inc.

Thank you for your review of the draft EIS relating to the proposed industrial park at Kipapa Gulch. We appreciate the help we received from your staff at the Airport Branch office. We will be in consultation with your staff when construction design is initiated.

Sincerely,



Yuchi Hsu, President  
Dairy Co., Inc.



Mililani Town Association  
 95-303 Kaloopau Street  
 Mililani Town, Hawaii 96789  
 Telephone (808) 623-7300

DAIRY CO., INC.  
 1638 KAM IV ROAD  
 HONOLULU, HAWAII 96819

January 23, 1989

Mr. W. Y. Thompson  
 98-1051 Kahaonui Street  
 Aiea, Hawaii 96701

Dear Mr. Thompson,

Thank you for including the Mililani Town Association to be among those scheduled to review the draft Environmental Impact Statement for the Kipapa Industrial Park. This organization supports your Industrial Park Project.

Sincerely,

MILILANI TOWN ASSOCIATION

*Eric M. Matsumoto*  
 Eric M. Matsumoto, President

EMM/gss

February 12, 1989

Mr. Eric M. Matsumoto, President  
 Mililani Town Association  
 95-303 Kaloopau Street  
 Mililani Town, HI 96789

Dear Sir:

SUBJECT: Proposed Industrial Park at Kipapa Gulch  
 Waipio, Ewa, Oahu  
 TRK: 9-4-05: 52  
 Owner: Dairy Co., Inc.

Thank you for your review of the draft EIS relating to the proposed industrial park project at Kipapa Gulch. I am most pleased to receive the support of your community organization for this project.

When construction plans are initiated, your organization will be consulted again.

Sincerely,

*Mr. Yaichi Ige*  
 Mr. Yaichi Ige, President  
 Dairy Co., Inc.