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

FILE COPY

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CP/DGP 87/E-1

March 27, 1987

Dr. John C. Lewin, Director
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Dr. Lewin:

Final Environmental Impact Statement (FEIS)
Resident/Visitor Entertainment Center--Amfac, Inc.
Tax Map Keys 9-1-15: Por 5, Por 17; 9-1-16: Por. 9

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

A copy of our report is attached which explains certain unresolved issues, and the context in which the EIS has been accepted. The report also includes a list of additional approvals which are required before the project could be implemented.

If you have any questions, please contact Mr. Charles Prentiss of my staff at 527-6073.

Sincerely,

Donald Clegg

DONALD A. CLEGG
Chief Planning Officer

Attach.

cc: Mr. Thomas Fee

ACCEPTANCE REPORT: CHAPTER 343, HRS,
ENVIRONMENTAL IMPACT STATEMENT (EIS)
RESIDENT/VISITOR ENTERTAINMENT CENTER (87/E-1)
AMFAC HAWAII, INC.
EWA, OAHU, HAWAII
TAX MAP KEY: 9-1-15: POR. 05, POR, 17;
9-1-16: POR. 09

A. Background

Amfac Hawaii, Inc. has requested an amendment to the Development Plan for Ewa from the City and County of Honolulu, Department of General Planning (DGP). The application requested the redesignation of 106 acres of vacant land from the present Residential, Low Density Apartment, Medium Density Apartment and Agriculture to Commercial use. The site is abandoned sugarcane land. The basic development concept is a theme park stressing Pacific and Asian cultures through architecture, special effects, live-stage productions, cultural exhibits and displays, and ethnic food and merchandise. As many as 1,200 people would be employed. Performers, artisans, multi-media and special-effects presentations will be used to tell stories based on both fact and fiction drawing from the history, cultures, myths and literature of the Pacific and Asian countries portrayed.

B. Procedures

1. The EIS preparation notice was sent to the Office of Environmental Quality Control (OEQC) on October 28, 1986. The Draft EIS was officially received by the OEQC on January 20, 1987 and published in the January 23, 1987 OEQC Bulletin. The deadline for comments and the end of the 30-day public review period was February 23, 1987.

2. Twenty-four letters with comments were received on the Draft EIS during the 30-day review period. Comments from the State Department of Land and Natural Resources were received after the above date on March 19, 1987 but were anticipated and, therefore, included in this acceptance report. DGP review of the comments was prepared and transmitted to the applicant on March 5, 1987.

3. The Final EIS was transmitted to OEQC and DGP on March 9, 1987 which met the required deadlines.

The Department of General Planning's review of the EIS centered on the environmental effects of the construction and operation of the proposed theme park. The project will also be reviewed as part of the DGP Development Plan Annual Review process which evaluates land use requests based upon other planning factors such a compatibility with surrounding uses, market demand, conformance to City and County land use policy, adequacy of infrastructure, community desires and aspirations, etc. DGP recommendations on the Annual Review proposals will be transmitted to the City Planning Commission by July 1, 1987.

C. Content

The EIS meets content requirements, and, in the above context, the following factors appear to be adequately addressed in the EIS:

1. Historic and archaeological sites and structures.

2. Flora and fauna.

3. Relocation of electric transmission line.

4. Soils and erosion.

5. Lagoon water.

6. Palailai Landfill leachate.

7. Noise.

8. Air quality effects of vehicular traffic to the site.

9. Scenic and visual resources.

D. Responses to Comments

The applicant provided point-by-point responses to all comments received within the 30-day response period.

E. Unresolved Issues

Incomplete information, or unresolved issues remain for certain factors discussed in the EIS. However, these will be further investigated during the Development Plan amendment review process. These factors include, but may not be limited to the following:

1. Specifics of ingress and egress for the site.

2. Connection to the Honouliuli WWTP.

3. Water source and competing uses.

F. Major Permits and Approvals Required

Authority	Approval Required
State of Hawaii	
Land Use Commission	Land Use District Boundary Amendment
Department of Transportation	Roadway Land Exchange
Department of Land and Natural Resources	Permit to use Pump 10 Wells
City and County of Honolulu	
Department of General Planning	Ewa DP Amendments
Department of Land Utilization	Change of Zone Application Conditional Use Permit Subdivision Approvals
Department of Public Works	Building Permits Sewer Connection Grading Permits
Board of Water Supply/ Campbell Estate	Water Commitment
Department of Transportation Services	Road and Intersection Approvals

G. 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.

If you have questions, please call Mr. Charles Prentiss at 527-6073.

Approved Donald Clegg

DONALD A. CLEGG
Chief Planning Officer
Department of General Planning

FINAL

ENVIRONMENTAL IMPACT STATEMENT

March 1987

RESIDENT/VISITOR ENTERTAINMENT ATTRACTION

Ewa, Oahu, Hawaii

Amfac
AMFAC HAWAII, INC.

FINAL

ENVIRONMENTAL IMPACT STATEMENT

March 1987

RESIDENT/VISITOR ENTERTAINMENT ATTRACTION

Ewa, Oahu, Hawaii

Prepared for:

Amfac Hawaii, Inc.

Prepared and Submitted by:

Helber, Hastert, Van Horn and Kimura, Planners

Mark H. Hastert, Vice President

For Submittal to:

City & County of Honolulu
Department of General Planning

AMFAC HAWAII, INC.

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CHAPTER I

INTRODUCTION AND SUMMARY

1.1 INTRODUCTION

Amfac Hawaii, Inc. (hereinafter referred to as the "Applicant") has applied to the City and County of Honolulu Department of General Planning (the "Accepting Agency) for a amendment to the Ewa Development Plan (DP) to permit the construction and operation of a resident/visitor entertainment attraction in Ewa, Oahu.*

Specifically, the application requested the redesignation of the 106-acre project area from the present Residential, Low Density Apartment, Medium Density Apartment and Agriculture DP designations to the Commercial DP designation.

By letter dated October 28, 1986, the Department of General Planning (DGP) notified both the applicant and the Office of Environmental Quality Control (OEQC) of its determination that an Environmental Impact Statement (EIS) would be required for the application (Chapter X).

1.2 INTENDED USES OF THIS DOCUMENT

This EIS has been prepared to support the applicant's DP amendment request. Pursuant to DGP's determination, an environmental impact statement preparation notice (EISPN) was published in the November 8, 1986 issue of the OEQC Bulletin. Concurrently, a more detailed version of the EISPN was sent directly to 33 agencies, organizations and surrounding landowners and lessees thought to have an interest in providing input into the preparation of the EIS (Chapter X). A total of 24 responses were received and are reproduced in Chapter IX. Concerns raised in these responses have been addressed in relevant chapters of this report.

The Draft EIS was filed with the accepting agency (DGP) and with OEQC for public distribution on January 20, 1987. Notice of the Draft was published in the January 23, 1987 issue of the OEQC Bulletin. Of the 67 reports distributed to public agencies, organizations and individuals, 26 were received as of march 6, 1987. These comments and our responses are reproduced in Chapter XI.

The report is intended to comply with Chapter 343, HRS and the EIS regulations promulgated by Chapter 200 of Title 11, Department of Health. The purpose of the report is to provide information about the nature of the subject action to public agencies and interested members of the community; to assess the existing

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* Application for Development Plan Amendment and Environmental Assessment, Visitor/Entertainment Attraction, Ewa, Oahu. (Department of General Planning Reference No. 87/E-1). Prepared for Amfac Hawaii, Inc. by Helber, Hastert, Van Horn and Kimura, Planners. October 17, 1986.

environmental conditions of the property and surrounding areas; to evaluate and disclose probable impacts of the action; to propose mitigative measures to minimize adverse project impacts; and to consider alternatives to the proposed action.

1.3 DEVELOPMENT SUMMARY

Amfac Hawaii, Inc. is proposing to construct a major resident/visitor entertainment attraction in the vicinity of the Secondary Urban Center in Ewa, Oahu. The project encompasses a 106-acre site adjacent to Puu Palailai and the H-1 Freeway/Palailai Interchange. Central elements of the project include the "park" site, plant nursery and a future commercial site. Major elements of the park include: international exhibitions, a lagoon system, employee/visitor parking, administration building, and support/maintenance facilities. A brief summary of the subject action is presented below.

Applicant:	Amfac Hawaii, Inc. Post Office Box 3230 Honolulu, Hawaii 96801
Action:	Applicant requests amendment to the Ewa Development Plan (from residential land uses to commercial) during the FY 1987 *Development Plan annual review*. This DP amendment application has triggered the Chapter 343 HRS requirements pursuant to which this report has been prepared.
Accepting Agency:	Department of General Planning
Project Location:	Adjacent to the H-1 Freeway-Palailai Interchange. Directly west of Puu Palailai.
Acreage:	Approximately 106 acres
TMKs:	9-1-15: por 05, por 17; 9-1-16: por 09
Proposed Uses:	Resident/Visitor Entertainment Attraction
Existing Uses:	Vacant land
State Land Use District:	Urban and Agriculture
Development Plan Designations:	Residential, Low Density Apartment, Medium Density Apartment and Agriculture
Zoning:	Agriculture (Ag-1) and Residential (R-6)

1.4 DEVELOPMENT CONCEPT

The basic development concept of the entertainment attraction builds on the theme of Hawaii as the "Crossroads of the Pacific." The project will take both residents and visitors on a journey from Hawaii around the Pacific and Asian Basin. Through representative architecture, multi-media and special-effects presentation, live-stage productions, cultural exhibits and displays, ethnic foods and merchandise, the visitor will take a journey around the Pacific Basin in a five to six hour stay.

The project is intended to entertain, broaden and enrich the visitor by introducing him/her to these faraway lands. The major countries represented will have buildings, streets, landscaping and monuments that are designed to give the visitor a representative experience of each country. Performers, artisans, multi-media and special-effects presentations will be used to tell stories based on both fact and fiction drawing from the rich history, cultures, myths and literature of the countries portrayed. The facility will <u>not</u> contain thrill rides.

1.5 SUMMARY OF PROBABLE IMPACTS

- *Land Use.* The proposed action will commit the project site to urban uses (Chapter 8).

- *Historic and Archaeologic Resources.* No significant historic or archaeological resources were found within the project area (Chapter 4.11).

- *Flora and Fauna.* No endangered flora or fauna were found to inhabit the project site (Chapter 4.7).

- *Employment.* The operation of the attraction will require up to 1,200 employees. (The actual number of employees will be defined once the ultimate size and configuration of the attractions are determined based on the final feasibility studies, design criteria and investment limitations.) (Chapter 5.2).

- *Public Facilities and Services.* The development will create additional demands on public services and infrastructure. Wastewater generated by the project will be treated at the Honouliuli Treatment Plant (Chapter 6.5). No increased allocations for potable or non-potable water are required (Chapter 6.4). Traffic volumes will be increased in the vicinity of the Palailai and Makakilo Interchanges (Chapter 6.2). Existing electrical transmission lines will have to be relocated (Chapter 6.8).

- *Hydrology.* Potential hydrologic impacts of the proposed action were examined and, given the present level of engineering detail provided on the park complex, no adverse impacts are anticipated.

1.6 SUMMARY OF MITIGATING MEASURES

- A new "T" intersection with Farrington Highway will have to be constructed to provide access to the project site (Chapter 6.2).

- Extensive landscaping and berming will shield noise generated by traffic moving along Farrington Highway from park activities (Chapter 4.8).

1.7 UNRESOLVED ISSUES

- An alternative corridor for the 138-KV transmission line has not been identified at this time. Discussions with Hawaiian Electric Company regarding the appropriate route are ongoing.

1.8 *RELATIONSHIP TO LAND USE PLANS AND POLICIES*

Chapter III contains a detailed discussion of the relationship between government plans and policies and the proposed action. The proposed action is consistent with all relevant public goals, objectives, policies, plans and controls except for the regulations of the State Land Use Law which will be the subject of a subsequent petition request for redistricting from the State Agriculture District to the State Urban District.

1.9 ALTERNATIVES CONSIDERED

A number of alternative sites around the island of Oahu were evaluated before deciding on the present site (Chapter VII). A number of alternatives were analyzed for the present site including a no-action alternative (consisting of three options: postponement of action, residential development, and alternative agricultural uses) an alternate commercial use of the site.

The postponement of action alternative and alternative agricultural uses were projected to yield returns far short of those anticipated by the proposed action. The alternative of residential development of the site would yield greater adverse environmental impacts than the proposed action. Finally, the successful development of the site for an alternative commercial use, such as a shopping center, would be constrained by the pending development of a nearby shopping center and existing use restrictions.

In conclusion, the applicant has evaluated alternative proposals and finds that the proposed resident/visitor entertainment attraction represents the most feasible use of the site.

1.10 NECESSARY PERMITS AND APPROVALS

A number of permits and approvals must be secured by the applicant before development of the site can begin. Major permits and approvals still outstanding are listed in Table 1.

Table 1: NECESSARY PERMITS AND APPROVALS

Authority	*Approval Required*
State of Hawaii	
Land Use Commission	Land Use District Boundary Amendment
Department of Transportation	Roadway Land Exchange
City and County of Honolulu	
Department of General Planning	Ewa DP Amendments
Department of Land Utilization	Change of Zone Application
	Conditional Use Permit
	Subdivision Approvals
Department of Public Works	Building Permits
	Grading Permits
Board of Water Supply/ Campbell Estate	Water Commitment

CHAPTER II

PROJECT DESCRIPTION

This Chapter describes the proposed entertainment attraction. The project location is first described. The development concept is then reviewed leading into a discussion of the conceptual master plan and an overview of the key land use and infrastructural features of the project. The preliminary market and economic feasibility of the project is then reviewed ending with a brief discussion of project phasing and costs.

2.1 LOCATION

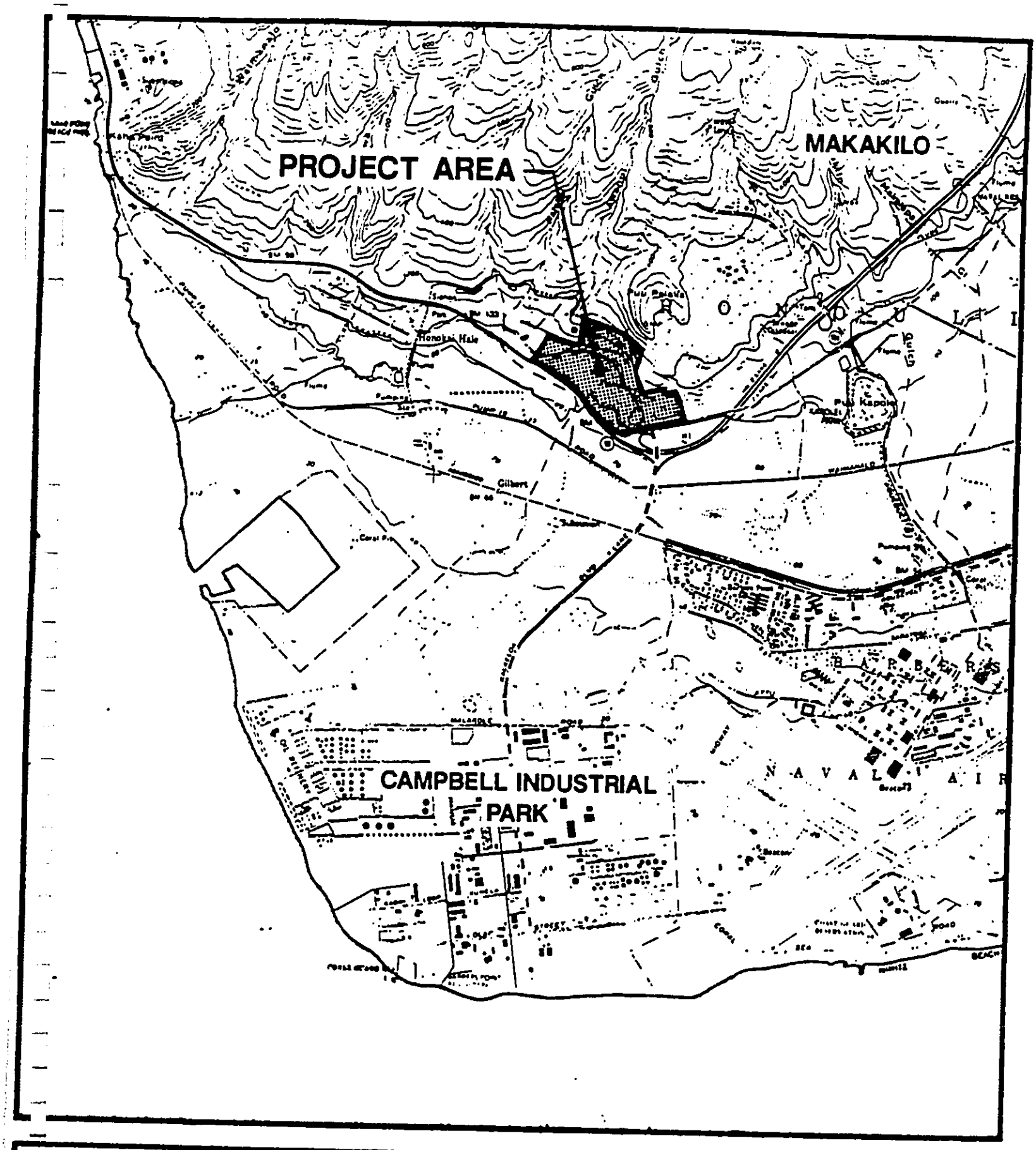
The property is located north of and adjacent to the Farrington Highway and the Palailai Interchange and south of and adjacent to the Palailai cinder cone (Puu Palalai) in the Ewa Judicial District, island of Oahu (Figure 1). The site is approximately 20 miles west of Honolulu, the island's primary urban center.

The approximately 106-acre site consists of portions of Tax Map parcels 9-1-15: 05, 17 and 9-1-16: 09 (Figure 2). The site is oblong in shape with the major axis running parallel to Farrington Highway which forms the southern boundary of the site. The eastern boundary is formed by the base of Puu Palailai. The northern boundary is formed by the old Farrington Highway extension to a point east of the Board of Water Supply's Barbers Point 215 water tanks, where it crosses the old road alignment and includes lots 79 and J of Parcel No. 5. The western boundary is approximately 400 feet east of Awanui Gulch.

2.2 DEVELOPMENT CONCEPT

Amfac Hawaii, Inc. is proposing to construct a major new resident/visitor attraction on vacant land adjacent to the proposed Secondary Urban Center on the Ewa Plain. The attraction has been designed to become the State's premier visitor attraction as well as a much needed source of employment in the Ewa area.

The basic concept of the attraction builds on the theme of Hawaii as the "Crossroads of the Pacific." Hawaii is a state populated by people from diverse cultural heritage. It is a state which proudly markets itself as a place where "East meets West." Hawaii visitor industry experts say that this cultural diversity greatly enhances the state's visitor appeal by providing the Hawaii visitor with an alluring touch of exotic and foreign experience while still inside the safe confines of the United States. In short, Hawaii's cultural diversity coupled with the state's attractive climate, quality visitor plant and services, and spectacular scenery has made Hawaii one of the premier visitor destinations in the world.



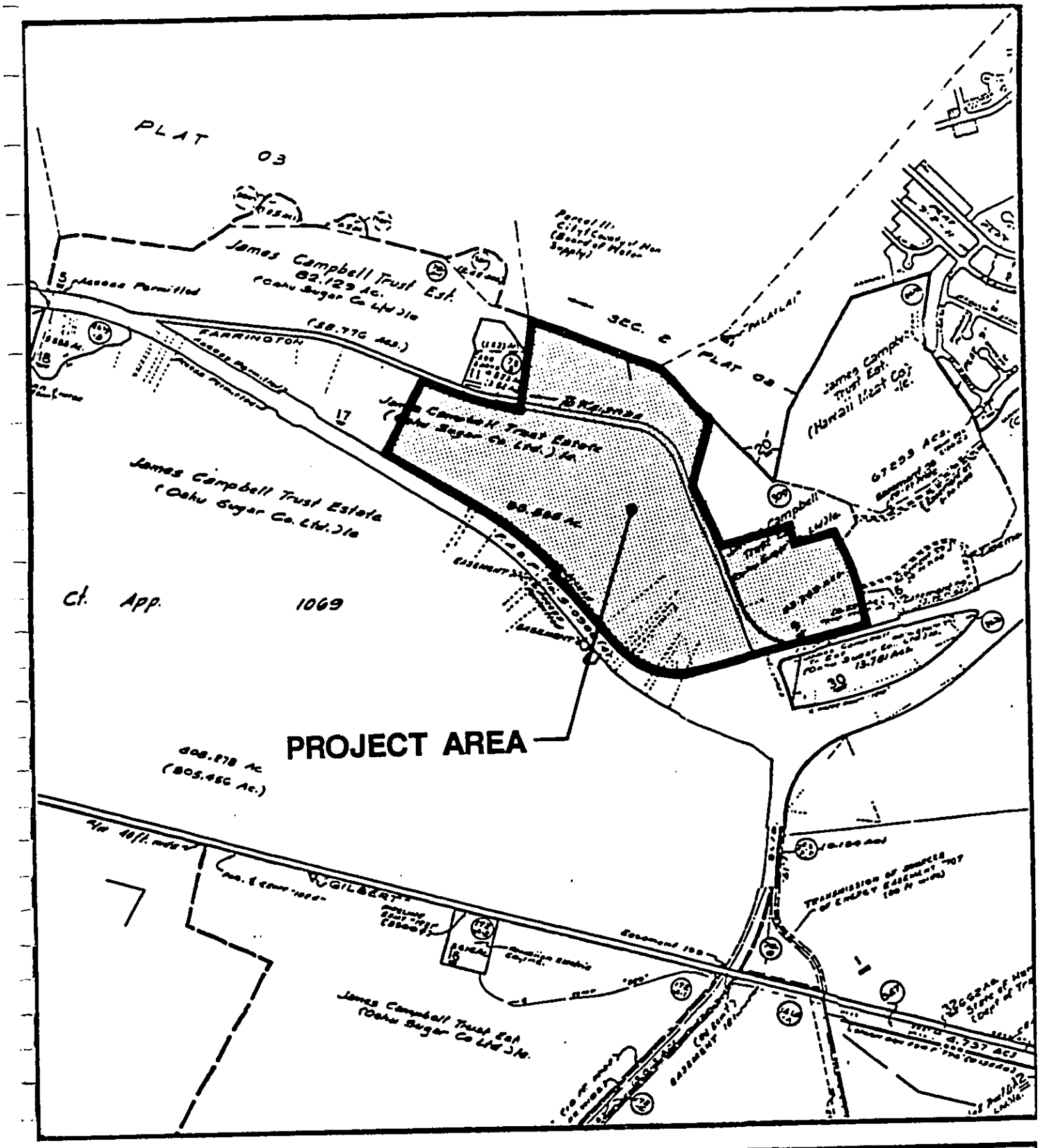
Location Map

FEET
0' 3000'

Figure: 1

Amfac
AMFAC HAWAII, INC.

HELBER, HASTERT, VAN HORN & KIMURA PLANNERS
GROSVENOR CENTER • PRI TOWER • 733 BISHOP STREET SUITE 2890
HONOLULU, HAWAII 96813 TELEPHONE: (808) 545-2055



Tax Key Map

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Figure: 2

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In addition, leisure time studies predict that the traveller of tomorrow will be better educated, more sophisticated, and demanding of a more quality vacation experience. Therefore, this attraction will provide vacationers relaxation as well as fulfilling their need for new experiences and cultural enrichment.

The concept evolving for the attraction will emphasize Hawaii's cultural diversity and will be developed with quality design and enriching content to appeal to the characteristics of the resident and visitor market.

Under the concept of Hawaii as the "Crossroads of the Pacific" the project will remove the visitor from present day reality and take him on an exciting journey around the Pacific and Asian Basin in an approximate five to six hour stay. The attraction is designed to entertain, engage and educate the visitor. It will provide the visitor with numerous and varied visual, culinary and emotional experiences. Feelings of journeying, adventure, romance and mystery will be experienced through the various major presentations. Representative architecture, extensive landscaping, cultural exhibits and displays, and ethnic foods and merchandise will give the visitor a real sense of these places. Multi-media and special effects presentations, live performers, artisans and craftsmen will also tell stories about these exotic places and bring them to life. Story content will draw from the rich history, culture, art and literature of the places portrayed.

In summary, the attraction will combine state-of-the-art presentation technology with history, culture, fantasy and folklore, all displayed in an appropriate and high-quality setting to develop a place of surprising diversity, happiness and knowledge.

2.2.1 Principal Design Objectives

Principal design objectives of the visitor attraction are presented below.

- Use of water to provide a cooling effect on the microclimate and to create a natural setting for depicting Pacific Basin countries. Waterways will also be used for a boat excursion and a variety of themed cultural encounters.
- Use of berming and landscaping to separate themed areas to create a natural setting for visitors during their journey around the attraction.
- Extensive use of shade and rest areas.
- A journey through the attraction designed to permit all guests to experience each themed area.
- An attraction designed to accommodate future expansion and the inclusion of other countries in the Pacific Basin.
- Servicing for all facilities in the project to take place behind the scenes and out of site so as not to interfere with visitor enjoyment.

- o Retail outlets planned to provide visitors with the opportunity to acquire various themed products.
- o An architectural ambience of the highest quality.
- o An open-air theater and show case for local and international entertainers.

2.3 THE MASTER PLAN

The 106-acre project consists of five major areas (Figure 3): a "park complex," a service area (including employee parking), a guest parking area, a nursery, and a commercial expansion area. A summary of the various land use acreages of the project area are provided in Table 2 below.

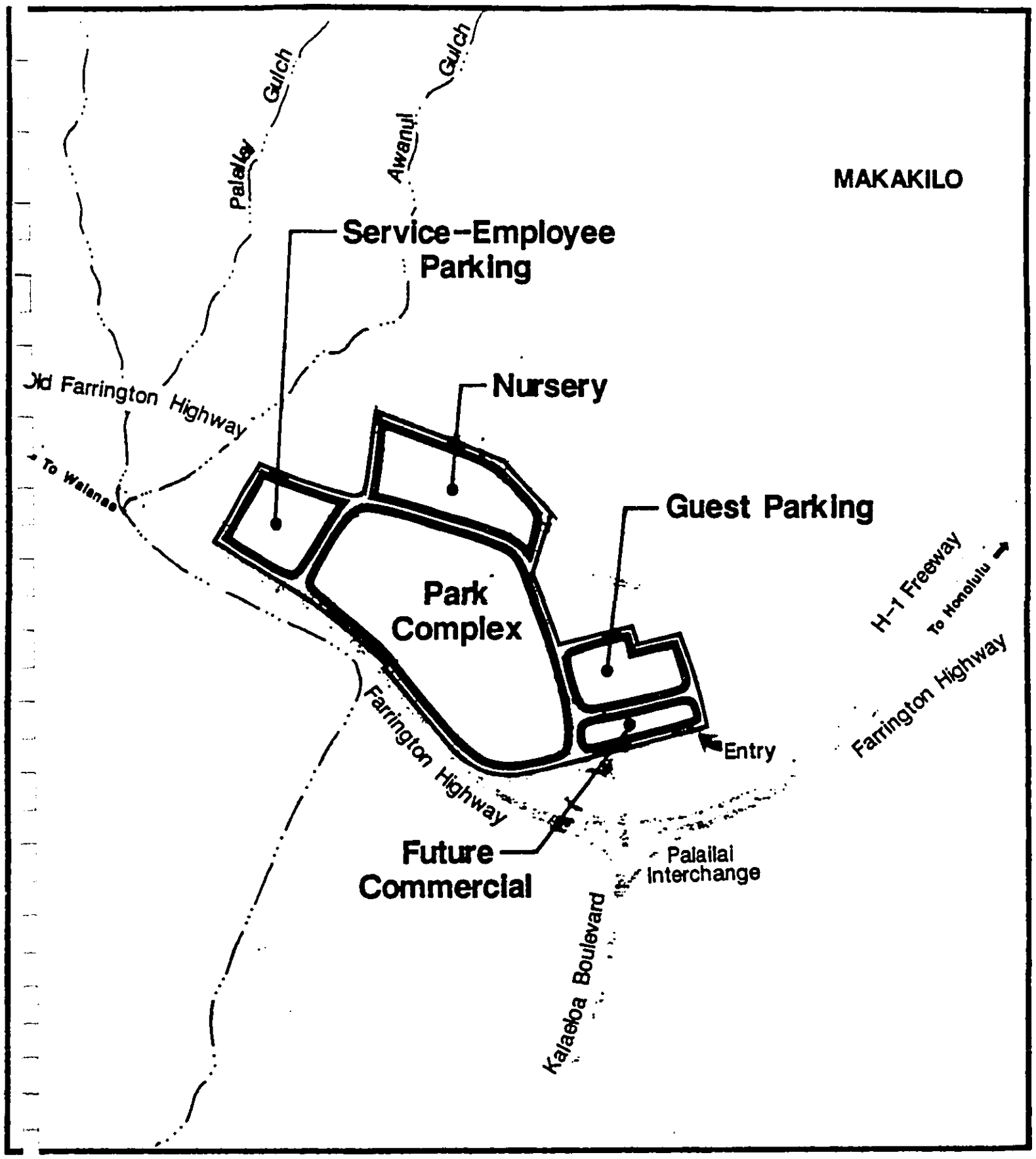
Table 2: PRELIMINARY LAND USE SUMMARY

Land Use	Acres
Nursery Site	18
Service Area/ Employee Parking	6
Guest Parking	6
Park Complex (incl. expansion)	70
Future Commercial Site	6
Total	106

Source: Helber, Hastert, Van Horn and Kimura, Planners. 1986.

A nursery site has been identified for the area above the old Farrington Highway roadway between the Board of Water Supply's Barbers Point 215 tanks and Puu Palailai. This area is required to propagate and maintain the significant landscaping requirements of the park.

An area adjacent to Farrington Highway and the guest parking area has been identified for future park-related commercial activities. Planning for this area is at a very conceptual level and no development is expected to occur within the next five year period. Typical activities now envisioned range from overflow parking, restaurants, and evening/late night entertainment activities.



Conceptual Land Use Map

FEET 0' 1000'

Figure: 3

Amfac
AMFAC HAWAII, INC.

HELBER, HASTERT, VAN HORN & KIMURA PLANNERS
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HONOLULU, HAWAII 96813 TELEPHONE: (808) 545-2055

Access to the park is from the Palailai Interchange, Farrington Highway and Kalaeloa Boulevard. The majority of guests are expected to be tourists arriving from Waikiki by bus.

A conceptual master land use plan for the park-complex has been prepared by LARC and is presented in Figure 4. This plan is for illustrative purposes only and is subject to change based on updated financial, design and cost considerations. As more information is generated, the plan will be refined, but in no event will the total investment exceed $50 million, and modifications to the plan may be required to keep the investment within these limits.

The discussion below provides information on visitor and service circulation, a discussion on necessary support facilities, and a general discussion of the lagoon system and a typical themed attraction.

2.3.1 Visitor Circulation

Guests will enter the attraction from either the automobile parking/drop-off area to the east of the old Farrington Highway Roadbed or via the bus drop-off area adjacent to the main entrance. After purchasing entry tickets, guests will enter into the first themed area styled after "Old Honolulu" - possibly representing how Honolulu would have looked in the days of the whaling ships in the mid-1800's. Moving at their own pace, visitors will then encounter seven more themed attractions along a one-mile meandering pathway, arriving back at their point of entry some five to six hours later.

The visitor circulation system will be designed to allow barrier-free access to handicapped persons throughout the park area.

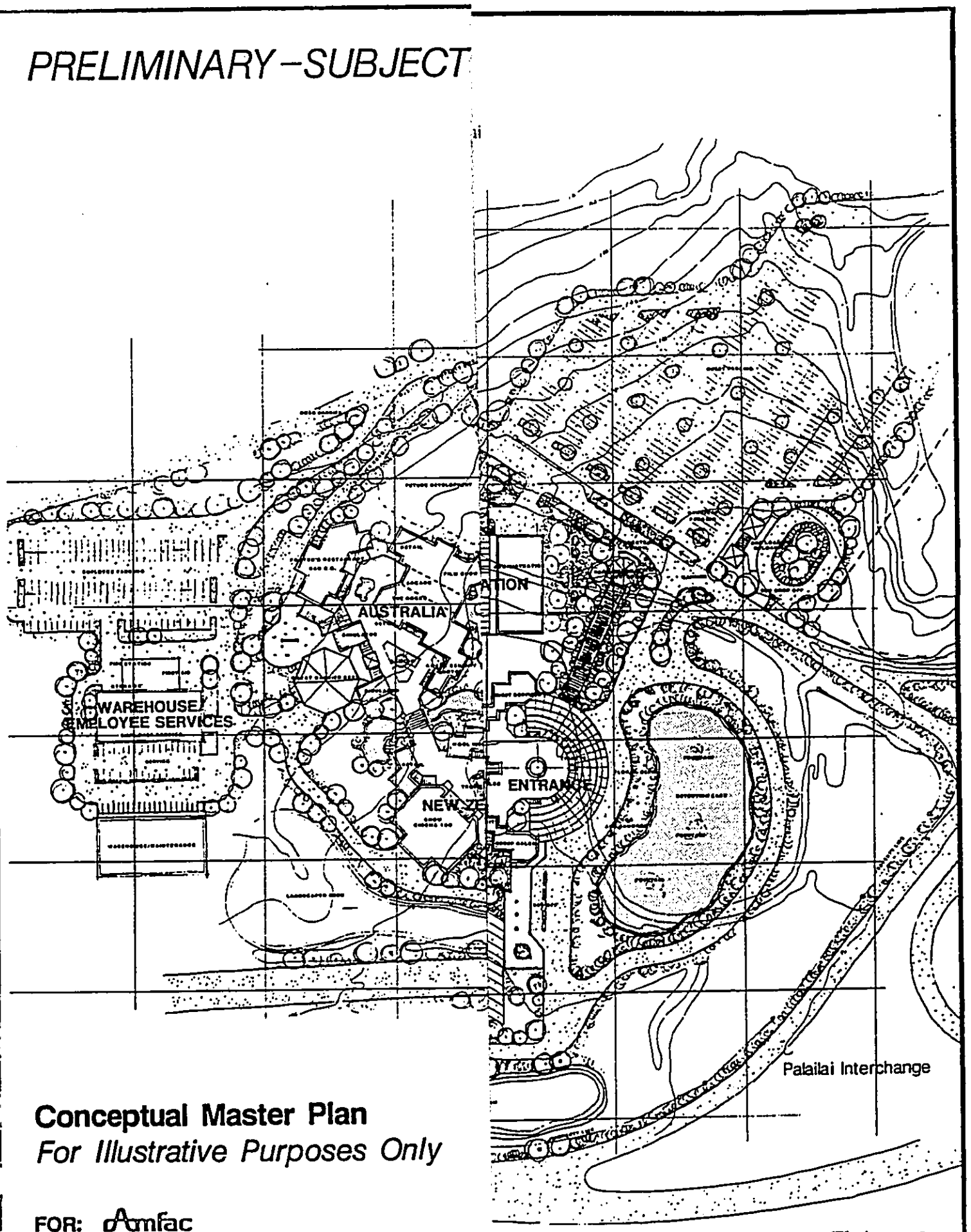
2.3.2 Service Circulation

The major on-site maintenance facility is located near the western boundary of the site along with the employee parking area. Access to this area is via the old Farrington roadway around the mauka side of the park. A network of service roadways extend from the maintenance area to provide behind-the-scenes vehicular access to all areas of the park. In addition to providing service access to the various attractions, these roadways will provide ready access to the park in the event of a fire or medical emergency.

2.2.3 Support Facilities

Major support facilities include an administration building and the warehouse/maintenance/employee services facility.

PRELIMINARY – SUBJECT



Conceptual Master Plan

For Illustrative Purposes Only

FOR: Amfac
AMFAC HAWAII, INC.

BY: LEISURE AND RECREATION CONCEPT

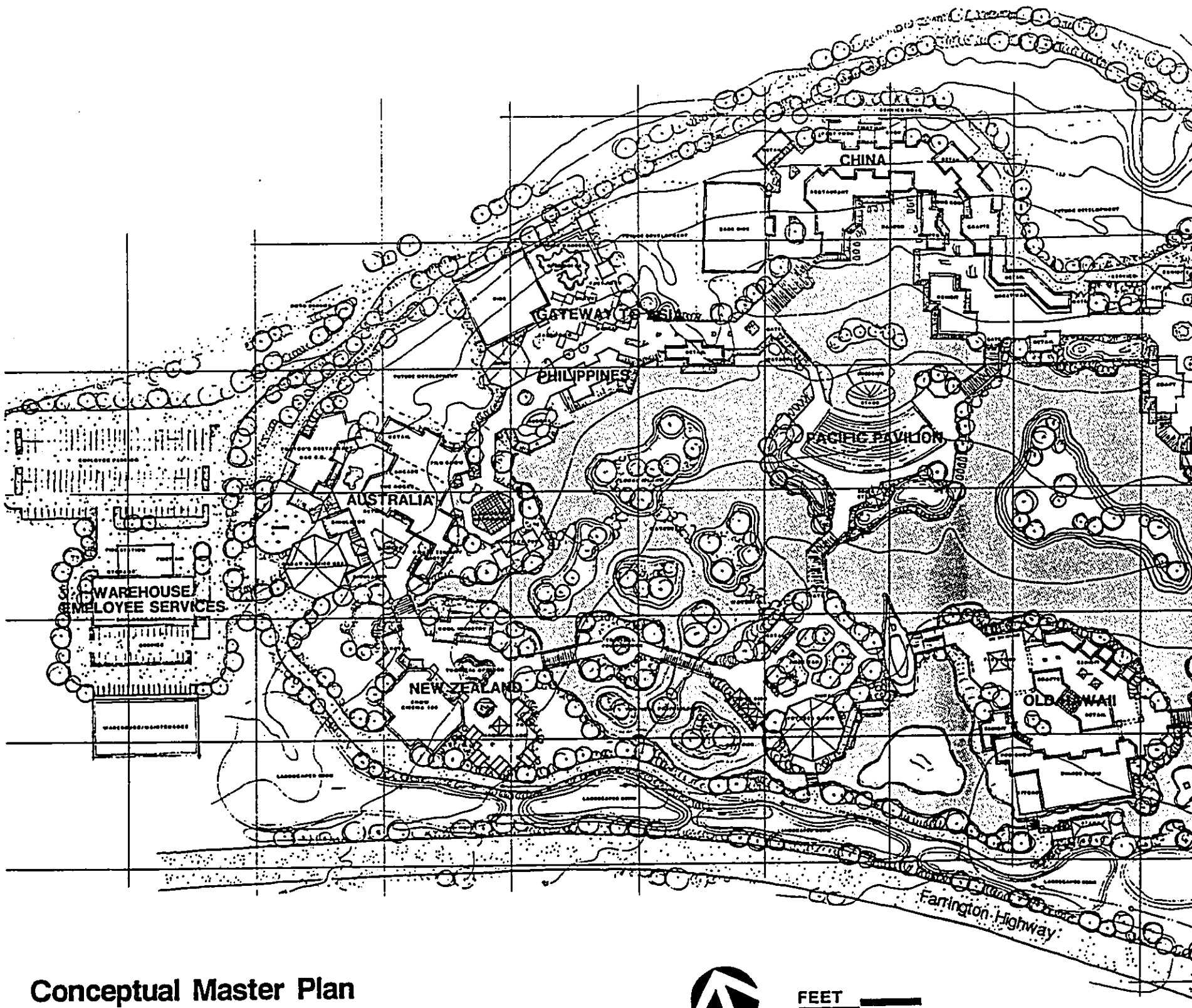
Figure: 4

December 2, 1986

CORRECTION

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

PRELIMINARY–SUBJECT TO CHANGE



Conceptual Master Plan
For Illustrative Purposes Only

FOR: Amfac
AMFAC HAWAII, INC.

BY: LEISURE AND RECREATION CONCEPTS, INC.

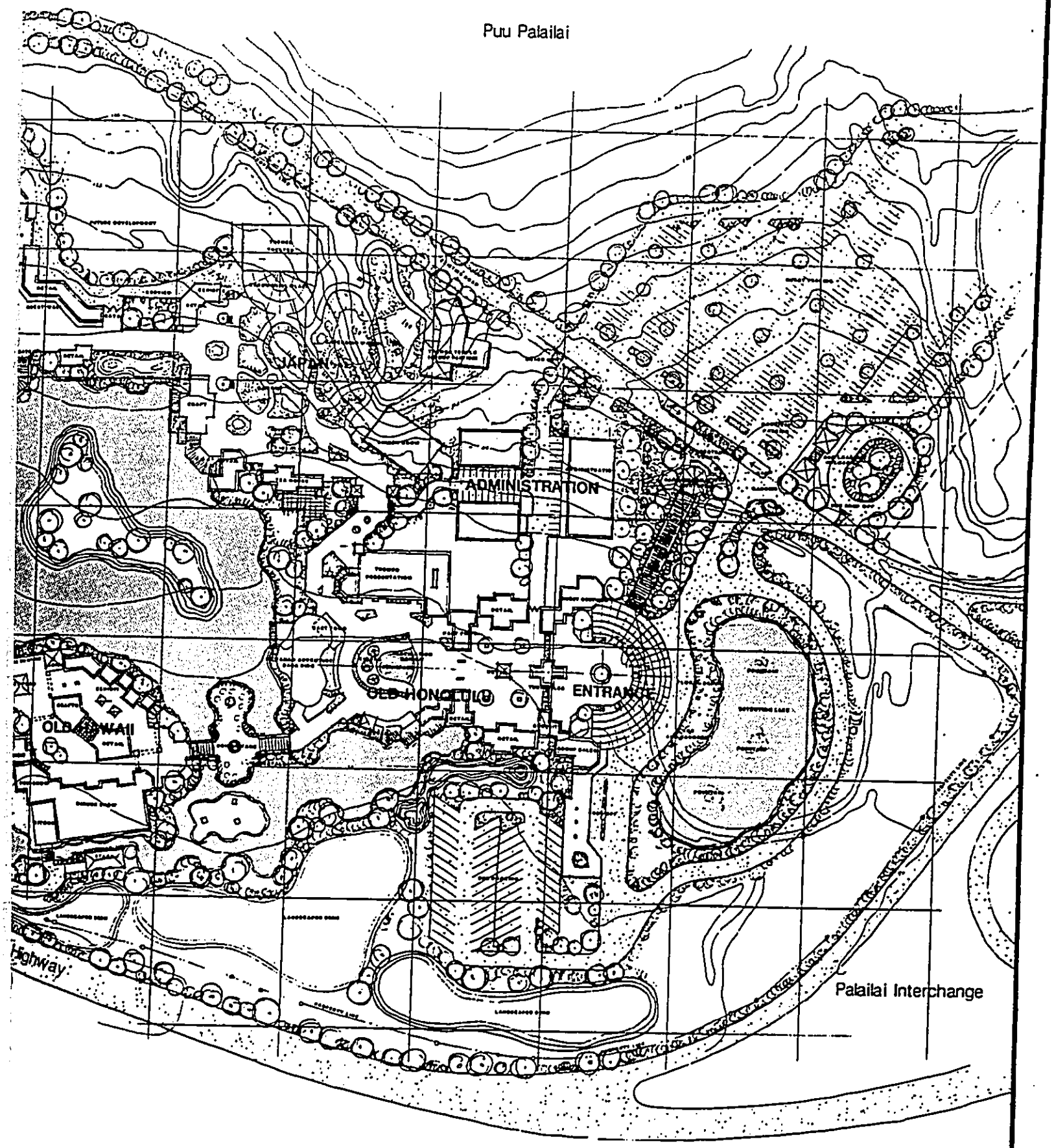


Figure: 4

December 2, 1986

The administration building occupies a site between the visitor parking area and the main entrance. Automobile parking will be available adjacent to the building. This facility will house the office of the park manager, senior executive and managerial staff as well as administrative support staff. Business related parking will be provided adjacent to the administration building.

The warehouse, maintenance and employee services operations are located adjacent to the western boundary of the park area and include provisions for employee and service vehicle parking. Typical warehousing operations include replacement parts for park machinery, an inventory of materials necessary to support the retail and food and beverage operations, and maintenance equipment. The maintenance area will contain the necessary shop functions and a garage for equipment maintenance as well as related maintenance offices. The employee services area would contain the personnel records office, cafeteria, lockers, lounges and employee restrooms.

2.3.4 Lagoon System

Planning for the lagoon system is at a very preliminary level of study. The open water will provide a cooling and beneficial affect on park visitors. The sound of moving water will add to the ambiance of the site. The conceptual master plan shows approximately 8 acres of pond area near the center of the park complex. This represents a maximum average and could well be reduced in subsequent design revisions. Ground elevations vary approximately 35 feet from north to south in the lagoon area allowing for a series of inter-connected ponds with water circulating from the lower areas adjacent to Farrington Highway to the upper ponds by means of a recirculating pump. Circulation may be enhanced by the use of waterfall and water jets and other techniques commonly employed in pond designs. At the present time it is felt that providing for adequate movement of water within the pond environment will control algae growth - precluding the need for biocides. Pond depths, lining materials, pump capacities, and pond maintenance programs are areas which will be examined at the appropriate time.

From time to time the lagoon system may need to be drained for maintenance purposes. Pond water could be diverted to nearby drainage ways for use as irrigation in nearby agricultural operations or pumped to other areas of the Ewa Plain (Section 4.6.3.1). The actual disposal method will be determined in consultation with designated experts at the appropriate stage of the development/design process.

Water losses due to evaporation will gradually increase the salinity of the remaining pond water. Considering the low level of chlorides present in the Pump 10 source water (500 - 800 ppm chlorides) and the rate of chloride build-up due to evaporative losses, the actual increase in salt is expected to be slight and one which will not adversely effect the environment when the ponds are emptied for maintenance purposes (Section 4.6.3.1).

2.3.5 Typical Themed Attraction

Each of the themed areas will represent a particular country within the Pacific and Asian Basin. Each area will provide the visitor with numerous and varied visual, culinary and emotional experiences. Guests will be able to purchase memorabilia and artifacts from the representative countries, sample the ethnic foods and/or just enjoy the sensory perception of visiting a distant land. Feelings of journeying, adventure, romance and mystery will be experienced through various presentations. Representative architecture, extensive landscaping, cultural exhibits and displays, and ethnic foods and merchandise will provide a real sense of place. State-of-the-art multi-media and special-effects presentations, live-performers, artisans and craftsmen will be used to tell stories about the particular themed country and bring them to life.

2.4 SUPPORTING INFRASTRUCTURE

This section provides a discussion of the on-site infrastructure improvements required to support the preliminary master land use plan. Information for this section has been summarized from industry standards, the engineering report (Appendix B), and the Traffic Study (Appendix E). Regional and off-site improvements are discussed in Chapter VI.

2.4.1 Water

The park will employ a dual water system with brackish water providing landscape irrigation, nursery operations, make-up water for lagoons, wash-down water and water for toilets. Potable water will be used in the drinking fountains, food service areas, lavatories and all areas where human consumption is likely. Potable water requirements are estimated at 70,000 gallons per day (GPD) with non-potable requirements estimated at an additional 232,000 GPD (Table 3) (See discussion in Chapter 6.4 and Appendix B).

Table 3: ESTIMATED WATER DEMAND

	Average Daily Demand
Potable	70,000
Non-Potable	232,000
Total	302,000

Source: Community Planning, Inc. December 1986

2.4.2 Wastewater

Wastewater generated by the project will be transmitted to the West Beach/Honouliuli Interceptor and treated at the Honouliuli Wastewater Treatment Plant (WWTP) located approximately 4-miles from the project site.

Total average wastewater flows are estimated at 180,000 GPD (See discussion in Chapter 6.5 and Appendix B).

2.4.3 Drainage

The project site is part of a small drainage area downslope of Puu Palailai and drains into culverts under the H-1 Freeway. The project will not significantly alter existing drainage conditions and therefore no major drainage improvements are necessary (See discussion in Chapter 6.6 and Appendix B).

2.4.4 Access

A new "T" intersection will be constructed approximately 500 feet east of Palailai Interchange along Farrington Highway. The new access road will pass by the proposed guest parking area and connect back to the old Farrington Highway to provide access to the service area (See Chapter 6.2 and Appendix E for related discussion of traffic impacts).

2.4.5 Power and Communications

The electrical and communication improvements necessary to support the project will be served by existing utility systems (See discussion in Chapter 6.8 and Appendix B).

2.5 PROJECT RATIONALE

An initial market analysis conducted by Leisure and Recreation Concepts, Inc. (LARC) concluded that a properly themed visitor attraction designed for the adult market can support an investment of $50 million. The market analyses were conducted in early 1986 and anticipated the first full year of operation to occur in 1990. However, it now appears that the first year of operation will be 1991. Projections for impact analyses were based on third-year operating capacities and therefore will not be affected by the change in the first operating year. A brief review of the LARC findings and recommendations is presented below.

2.5.1 Intended Market

Resident Market. The resident market (consisting of both Oahu and Neighbor Island residents) is estimated at 1.14 million in 1990. The resident population of Oahu in 1990 is estimated at 859,300 residents with neighbor island populations estimated at 279,100 persons (LARC, 1986).

Visitor Market. Statewide, the visitor market has exhibited consistent growth from 686,928 visitors in 1965 to 1,746,970 in 1970, to 3,934,504 in 1980 to 5,000,000 visitors (estimated) in 1985. This represents over a seven-fold growth in 25 years. Projections indicate a growth to more than 7 million statewide visitors in 1995. Between 1990 and 1995, the increase should be nearly 1 million with visitors in 1995 exceeding 7.7 million. The visitor market on Oahu (composed of those visiting Oahu, whether exclusively or as part of a trip including Oahu and the neighbor islands), is estimated to be 4.4 million in 1990 (LARC, 1986).

2.5.2 Attendance Projections

The analysis conducted by LARC indicated that the attraction could initially expect to attract approximately 1.5 million annual visitors, and once it has achieved market acceptance, attendance could increase to over 2 million visitors a year.

2.6 PROJECT PHASING AND COSTS

Work on the attraction will begin as soon as the government approvals process allows. Construction of the approximately $50 million project is expected to take between 18 and 24 months to complete.

CHAPTER III

RELATIONSHIP OF THE PROPOSED PROJECT TO EXISTING PUBLIC PLANS, POLICIES AND CONTROLS

This Chapter analyzes the relationship of the proposed entertainment attraction with existing public plans, policies and controls as required by Section 11-200-17(h) of the Department of Health Chapter 200 Environmental Impact Statement Rules. Relevant Hawaii State plans and policies are examined first, followed by a discussion of relevant City and County of Honolulu plans and policies.

3.1 THE HAWAII STATE PLAN

The Hawaii State Plan (Chapter 226 Hawaii Revised Statutes, as amended) establishes a set of goals, objectives and policies which are to serve as long-range guidelines for the growth and development of the State.

> ...[T]he Hawaii State Plan... shall serve as a guide for the future long-range development of the State; identify the goals, objectives, policies, and priorities for the State of Hawaii; provide the basis for determining priorities and allocating limited resources, such as public funds, services, manpower, land, energy, water. and other resources; improve coordination of state and county plans, policies, programs, projects, and regulatory activities; and to establish a system for plan formulation and program coordination to provide for an integration of all major state and county activities (Chapter 226-1: Findings and Purpose, HRS).

In this section, the project is analyzed with respect to relevant State Plan goals, objectives and policies.

Sec. 226-5 Objectives and Policies for Population

(b)(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.

Comment: The proposed project will provide numerous jobs which will allow Oahu's population to work in the Ewa area. Such an employment opportunity will help alleviate future congestion in Honolulu, and help to distribute growth on Oahu in a desirable, manageable manner.

(b)(3) Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.

Comment: The economy in the area of the proposed project has traditionally been based on agriculture. Recently, it has begun to diversify. The proposal will help to provide an economic base for residents in the Ewa region.

Sec. 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 choice, and improved living standards for Hawaii's people.

(b)(2) Promote Hawaii as an attractive market for environmentally and socially sound investment activities that benefit Hawaii's people.

(b)(3) Seek broader outlets for new or expanded Hawaii business investments.

(b)(4) Expand existing markets and penetrate new markets for Hawaii's products and services.

(b)(6) Strive to achieve a sustained level of construction activity responsive to, and consistent with, state growth objectives.

(b)(8) Encourage labor intensive activities that are economically satisfying and which offer opportunities for upward mobility.

(b)(9) Foster greater cooperation between the public and private sectors in developing Hawaii's employment and economic growth opportunities.

(b)(10) Stimulate the development and expansion of economic activities, which will benefit areas with substantial or expected employment problems.

(b)(12) Provide equal employment opportunities for all segments of Hawaii's population through affirmative action and non-discrimination measures.

(b)(13) Encourage businesses that have favorable financial multiplier effects within Hawaii's economy.

(b)(14) Promote and protect intangible resources in Hawaii, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.

(b)(16) Foster a business climate in Hawaii--including attitudes, tax and regulatory policies, and financial and technical assistance programs--that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry."

Comment: The proposal will increase the potential number and variety of jobs on Oahu. Since the project will be located in the Ewa region, a deemphasis will be placed on commuting to Honolulu, which could increase the quality of life for the residents that work at the entertainment attraction, and those that live in Honolulu.

The proposal will act as a growth pole for the adjacent Secondary Urban Center. Construction of the project would take 18 to 24 months and would supply many short-term construction jobs, providing a significant contribution towards the maintenance of a healthy construction industry in the Ewa area, the island of Oahu and the State in general.

The project offers unique opportunities to expand Hawaii's employment and economic growth and increase the strength of the visitor industry. The proposed project is expected to substantially increase direct civilian employment in the region. A small percent of the full-time positions to operate the entertainment attraction will be senior managerial staff with the remainder filled by a mix of administrative, professional, managerial, technical, supervisory and service positions.

The multiplier effect of the proposed project is many fold. Segments of the economy that would benefit from the development of the proposal include, but are not limited to, construction, commercial/retail, and the visitor industry.

The design of the proposed project is sensitive to Hawaii's scenic beauty and aloha spirit through representative architecture, cultural exhibits and displays, and ethnic foods and merchandise. The countries represented at the project will have buildings, streets, landscaping, monuments, food, music and entertainment that are designed to give the visitor an experience of each country.

Sec. 226-7 Objectives and Policies for the Economy - Agriculture

(a)(1) Continued viability in Hawaii's sugar and pineapple industries.

(a)(2) Continued growth and development of diversified agriculture throughout the State.

(b)(1) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawaii's economy.

(b)(2) Seek the enactment and retention of federal and state legislation that benefits Hawaii's agricultural industries.

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

(b)(8) Expand Hawaii's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.

(b)(9) Promote economically competitive activities that increase Hawaii's agricultural self-sufficiency.

(b)(10) Promote and assist in the establishment of sound financial programs for diversified agriculture.

Comment: Although the proposed project would result in the loss of approximately 90-acres of agriculturally designated land, the fields have been vacant for the past four years, and thus, no direct displacement will take place (See discussion in Chapter 4.5).

Sec. 226-8 Objectives and Policies for the Economy - Visitor Industry

(a) Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaii's economy.

(b)(1) Support and assist in the promotion of Hawaii's visitor attractions and facilities.

(b)(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people.

(b)(3) Improve the quality of existing visitor destination areas.

(b)(4) Encourage cooperation between the public and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.

(b)(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaii's people.

(b)(8) Foster an understanding by visitors of the aloha spirit and the unique and sensitive character of Hawaii's cultures and values."

Comment: Design precautions have been taken to ensure scale consistency with the neighboring residential communities of Makakilo and Honokai Hale. The development concept of the proposal is "Hawaii: Crossroads of the Pacific". The intent of the project is to take visitors on a journey around the Pacific and the Asian Basin through representative architecture, multi-media, special effects presentations, live stage productions, cultural exhibits, displays, ethnic foods and merchandise. A focus will be given to the Hawaiian Islands with their rich history, culture and values. The visitor will leave the entertainment attraction center with a broadened sense of the aloha spirit.

The development of the proposed project, will add to the Ewa region's growth in the tourism industry. The diverse array of employment opportunities offered by the proposed project will provide a major source of long-term primary jobs for west Oahu residents. In doing so, the facility will further the policy of allowing for upward mobility within the visitor industry.

Sec. 226-10 Objectives and Policies for the Economy - Potential Growth Activities

(b)(2) Expand Hawaii's capacity to attract and service international programs and activities that generate employment for Hawaii's people.

(b)(3) Enhance Hawaii's role as a center for international trade, finance, services, technology, education, culture and the arts.

(b)(5) Promote Hawaii's geographic, environmental, social, and technological advantages to attract new economic activities into the State.

Comment: The proposed project is of such a scale, that it may be recognized internationally, and has the potential to expand Hawaii's economic base by demonstrating Hawaii's strategic location and cultural connection between the eastern and western worlds. This would improve Hawaii's capacity to attract new businesses and activities, which would provide jobs for Hawaii's people.

Sec. 226-11 Objectives and Policies for the Physical Environment Land-based, Shoreline, and Marine Resources.

(b)(1) Exercise an overall conservation ethic in the use of Hawaii's natural resources.

(b)(3) Take into account the physical attributes of areas when planning and designing activities and facilities.

(b)(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.

(b)(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.

(b)(8) Pursue compatible relationships among activities, facilities, and natural resources.

(b)(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.

Comment: The site for the proposed project is relatively flat and therefore will require very little grading. Construction of the project should occur without generating costly or irreparable environmental damage. The natural terrain of the site is an integral part of the design of the project. The physical setting will also add to the "sensory" effect that the proposal will have on the visitors, by being located at the southern base of the beautiful Waianae Range. The design theme of the project (Chapter II) is compatible with the site and promotes increased public educational/-recreational opportunities. As mentioned in Chapter IV, no endangered species will be affected by the proposal.

Sec. 226-12 Objectives and Policies for the Physical Environment - Scenic, Natural Beauty, and Historic Resources.

(b)(1) Promote the preservation and restoration of significant natural and historic resources.

(b)(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.

(b)(3) Promote the preservation of views and vistas to enhance visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.

Comment: A design emphasis of the project is to represent the historic culture and beauty of the places which will be represented, including Hawaii. This attempt to present Hawaii's unique, diverse and colorful past, may inspire the preservation of what still physically remains of Hawaii's history. The project will also demonstrate the direct relationship between Hawaii's land and water scapes and the people who made the islands their home. By showing the significance of Hawaii's many land and water features, a stronger effort to preserve them may emerge.

Sec.226-13 Objectives and Policies for the Physical Environment - Land, Air, and Water Quality.

(a)(1) Maintenance and pursuit of improved quality in Hawaii's land, air and water resources.

(a)(2) Greater public awareness and appreciation of Hawaii's environmental resources.

(b)(2) Promote the proper management of Hawaii's land and water resources.

(b)(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.

(b)(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.

(b)(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.

(b)(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.

(b)(7) Encourage urban developments in close proximity to existing services and facilities.

(b)(8) Foster recognition of the importance and value of the land, air, and water resources to Hawaii's people, their cultures and visitors.

Comment: The subject site is relatively flat and therefore there will be little need for extensive grading in site preparation. The proposed development will be serviced by a dual water system which will aid in preserving the vital potable water resource. Groundwater in the vicinity is unsuitable for human consumption and will be used for irrigating the large landscaped areas of the project.

Sec. 226-14 Objectives and Policies for Facility Systems - in General

(a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and communication systems that support statewide social, economic, and physical objectives.

(b)(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.

(b)(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.

(b)(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.

(b)(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.

Comment: Development of the proposed project is expected to take between 18 and 24 months, in accordance with the County's policy to direct growth toward the Ewa region. Public facilities and services necessary will be planned and coordinated with the appropriate State and County agencies as development occurs. More detailed descriptions of proposed facility systems follow under the appropriate sections of this report.

Sec. 226-15 Objectives and Policies for Facility Systems - Solid and Liquid Wastes.

(a)(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.

(a)(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility and other areas.

(b)(1) Encourage the adequate development of sewerage facilities that complement planned growth.

(b)(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.

(b)(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.

Comment: Wastewater generated by the project is projected to be disposed of through the Honouliuli Wastewater Treatment Plant located approximately 4 miles east of the project. The construction of the sewage system will be closely coordinated with the appropriate County agencies and other private

developments in the area to assure a minimum of disruption to present levels of service. Solid wastes generated by the project will be collected and disposed of in accordance with accepted policies and programs of the City and County of Honolulu.

Sec. 226-16 Objectives and Policies for Facility Systems - Water.

(a) Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.

(b)(1) Coordinate development of land use activities with existing and potential water supply.

(b)(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.

(b)(6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs."

Comment: Plans for the development proposal include the use of a dual water system with brackish water providing for necessary irrigation and potable water reserved for human consumption.

Sec. 226-17 Objectives and Policies for Facility Systems - Transportation

(a)(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.

(a)(2) A statewide transportation system consistent with planned growth objectives throughout the State.

(b)(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties.

(b)(4) Provide for improved accessibility to shipping, docking, and storage facilities.

(b)(6) Encourage transportation systems that serve to accommodate present and future development needs of communities.

(b)(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs.

(b)(11) Encourage safe and convenient use of low-cost, energy efficient, non-polluting means of transportation.

Comment: Transportation planning for the Ewa area envisions a multi-modal transportation system consisting of pedestrian, bicycle, automobile and mass transit (buses, fixed and light-rail) modes. The ultimate development of these systems will enhance the environment of the Ewa area and will indirectly benefit the proposed project. The traffic impact analysis prepared for the project notes that the proposal can be expected to ease the increasing traffic demand within Urban Honolulu during peak periods by diverting commuter traffic toward the Ewa region. Because of the late morning and evening operating hours of the project, much of the traffic generated by the park will be during off-peak hours and will thus have minimal impact on adjacent roadways.

Sec. 226-18 Objectives and Policies for Facility Systems - Energy/Telecommunications.

(a)(1) Dependable, efficient, and economical statewide energy and telecommunication systems capable of supporting the needs of the people.

(a)(2) Increased energy self-sufficiency.

(b) To achieve the energy/telecommunication objectives, it shall be the policy of this State to ensure the provision of adequate, reasonable priced, and dependable power and telecommunication services to accommodate demand.

(c)(1) Support research and development as well as promote the use of renewable energy sources.

(c)(2) Ensure a sufficient supply of energy to enable power systems to support the demands of growth.

(c)(3) Promote prudent use of power and fuel supplies through conservation measures including education and energy-efficient practices and technologies.

(c)(4) Ensure that the development or expansion of power systems and sources adequately consider environmental, public health, and safety concerns, and resource limitations.

(d)(1) Facilitate research and development of telecommunication systems and resources.

(d)(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunication planning.

Comment: All energy and telecommunication services necessary for the development of the project will be planned and coordinated with the appropriate agencies and public utilities. Applications of appropriate energy technology will be examined with respect to the heating and cooling needs of the proposed development.

Sec. 226-19 Objectives and Policies for Socio-Cultural Advancement--Housing

(a)(1) Greater opportunities for Hawaii's people to secure reasonable priced, safe, sanitary livable homes located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals.

(a)(2) The orderly development of residential areas sensitive to community needs and other land uses.

(b)(2) Stimulate and promote feasible approaches that increase housing choices for low-income, moderate income, and gap group housing.

(b)(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style and size of housing.

Comment: The employment opportunities which will be offered at the proposed project will improve Ewa's desirability as a place to live. Due to the variety of jobs which will be offered at the entertainment attraction, there will be a demand by residents for existing and planned Ewa residential developments (described in Chapter 4.2) to avail themselves of these employment opportunities.

Sec. 226-20 Objectives and Policies for Socio-Cultural Advancement - Health

(a)(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.

(b)(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.

(b)(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.

(b)(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.

Comment: Medical and health care facilities are currently located in Waipahu and Honolulu areas. Emergency patients in the Ewa area are treated at the Kaiser's Moanalua Medical Center or at the Waianae Comprehensive Health Center. However, as population increases in the Ewa region, it is anticipated that a number of medical facilities and services will be attracted to the Ewa area. The St. Francis Hospital has recently been issued a State Certificate of Need for a new hospital to be constructed in the Ewa area.

Sec. 226-21 Objectives and Policies for Socio-Cultural Advancement - Education

(a) Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities and aspirations.

(b)(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.

(b)(3) Provide appropriate educational opportunities for groups with special needs.

Comment: The proposed project will provide a unique educational opportunity for those people with a special interest in learning more about the cultural heritage of Hawaii and the Pacific Basin. The educational experience would be through multi-media presentations, live stage productions, cultural exhibits and displays.

Sec. 226-23 Objectives and Policies for Socio-Cultural Advancement - Leisure

(a) Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.

(b)(1) Foster and preserve Hawaii's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.

(b)(2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.

(b)(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.

(b)(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.

(b)(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.

Comment: The proposed project will provide a unique form of recreation which can be enjoyed by all segments of society. Visitors will be free to roam the project at their own pace. While enjoying a leisurely stroll, visitors will also have the opportunity to learn about cultural and historical aspects of Hawaii.

Sec. 226-25 Objectives and Policies for Socio-Cultural Advancement - Culture

(a) Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and parts of Hawaii's people.

(b)(1) Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaii.

(b)(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors.

Comments: One objective of the proposed project is to present the cultural heritage of the many people that settled Hawaii and the Pacific Basin. Another emphasis of the proposal is to inform visitors about Hawaii's unique and intriguing history. The proposed project will enable the visitor to enjoy the cultural aspects of each area, as well as the many sensory experiences. Performers, artisans, multi-media and special effects presentations will be used to tell stories based on both fact and fiction, drawing from the rich history, cultures, myths, and literature of Hawaii and other countries portrayed.

Sec. 226-103 Economic Priority Guidelines

(b)(1) Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawaii's residents and visitors.

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

(c)(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawaii.

(e)(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.

(e)(2) Encourage the improvement of irrigation technology and promote the use of non-potable water for agricultural and landscaping purposes.

(e)(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.

(f)(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial and other buildings.

(f)(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.

Comment: Removal of agriculturally designated lands (the site has been vacant for the past four years) will not impact operations at Oahu Sugar Company. A thorough discussion of the impacts of the proposed project on both Oahu Sugar Company and important agricultural lands is found in Chapter IV.

The proposed project responds to such current issues as conservation of potable water by proposing the use of a dual water system and utilizing brackish water for landscape irrigation. The use of energy conserving technology is favored by the applicant and will be considered at the appropriate stage in the design process. To help promote economic stability of the entertainment attraction, a strong sense of the "aloha spirit" will be instilled within the visitors, causing them to be return customers and to tell friends of their experience.

Sec. 226-104 Population, Growth and Land Resources Priority Guidelines

(a)(1) Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawaii's people.

(a)(2) Manage a growth rate for Hawaii's economy that will parallel future employment needs for Hawaii's people.

(a)(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.

(b)(1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of life styles.

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

(b)(3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.

(b)(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open space.

(b)(12) Utilize Hawaii's limited land resources wisely, providing adequate land to accommodate projected population and economic growth while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.

(b)(13) Protect and enhance Hawaii's shoreline, open spaces, and scenic resources.

Comment: County General and Development Plan policies clearly indicate the *public* need to redirect growth to the Ewa area by planning a Secondary Urban Center. The project is adjacent to the planned secondary urban center and will be a prime employer for residents living there and in neighboring communities. The proposal is consistent with the needs and desires of the residents of the City and County of Honolulu.

Sec. 226-106 Affordable Housing: Priority Guidelines for the Provision of Affordable Housing:

(4) Create incentives for development which would increase homeownership and rental opportunities for Hawaii's low and moderate income households, gap-group households, and residents with special needs.

(6) Encourage public and private sector cooperation in the development of rental housing alternatives.

(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.

Comment: The variety of employment opportunities which will be offered at the entertainment attraction will provide jobs in Ewa for residents in existing and planned residential developments in the Ewa area.

3.2 STATE FUNCTIONAL PLANS

The Hawaii State Plan directs the appropriate State agencies to prepare functional plans for their respective program areas including; agriculture, transportation, conservation lands, housing, tourism, water resources, historic preservation, energy, recreation, education, higher education and health. The State Functional Plans serve as the primary implementing vehicle for the goals, objectives and policies of the Hawaii State Plan.

The plans set forth "...the policies, programs, and projects designed to implement the objectives of a specified field of activity when such activity is proposed, administered, or funded by an agency of the State" (Section 226-2 (10) Hawaii Revised Statutes). Each Functional Plan contains objectives to be achieved and policies to be pursued within the specified areas. "...[S]uch policies shall address major programs and the location of major facilities" (Section 226-57 (b) HRS).

All twelve State Functional Plans have been adopted by the Hawaii State Legislature. These plans "...[S]hall be taken into consideration in amending the county general plans (Section 226-52 (a) (3) HRS)." It is important to note that the policies, objectives and implementing actions within the Functional Plans are not mandates for County or private actions. Rather, they should be viewed as a guide, fully recognizing the inherent competing policy interests between the twelve plans. The applicable functional plans have been reviewed and considered in the formulation of this report. The following pages present a review of the agriculture, health, historic preservation, recreation and tourism functional plans.

3.2.1 State Agriculture Functional Plan

The focus of the State Agriculture Functional Plan, prepared by the State Department of Agriculture, is towards the long-term preservation and utilization of lands "suitable and used, or potentially usable, for agricultural production." Such lands are found within the State Agriculture District in areas identified as important agricultural lands.

To help protect these important agricultural lands, Article XI, Section 3 of the State Constitution mandates that Important Agricultural Lands (IALs) shall not be reclassified or rezoned without meeting standards and criteria established by the Legislature. Implementing action B(5)(c) of the State Agriculture Functional Plan states that:

> "Until standards and criteria to conserve and protect important agricultural lands are enacted by the Legislature, important agricultural lands should be classified in the State Agricultural District and zoned for agricultural use, except where, by the preponderance of the evidence presented, injustice or inequity will result or overriding public interest exists to provide such lands for other objectives of the Hawaii State Plan."

To develop a set of standards and criteria, the Hawaii State Legislature in 1983 established the State of Hawaii Land Evaluation and Site Assessment (LESA) Commission to formulate a system. The Commission was to evaluate and recommend a set of agricultural production goals for the State including an assessment of economic feasibility and the identification of specific locational and land area requirements to attain this objective.

The Commission developed a set of standards and criteria regarding the reclassification of important agricultural lands to the Urban District. Although they are not officially adopted as public policy, they are as follows:

- *The proposed designation conforms to the Hawaii State Plan.*
- *The proposed designation conforms to the County General and/or Community Development Plans.*
- *The proposed redistricting is based on a demonstrated need for non-agricultural use, such as housing, employment, economic development or public facilities, which overrides the IAL designation based on agricultural need impact on production goals and feasibility.*

As discussed in other sections of this Chapter, the project conforms to the intent and spirit of the Hawaii State Plan, and implements General and Development Plan policies regarding the development of Ewa. The market study demonstrates a need for the proposed project.

3.2.2 State Health Functional Plan

The State Health Functional Plan is prepared and maintained by the State Department of Health (DOH). The Plan's objectives, policies, and implementing actions are intended to: (1)prevent disease and promote healthful lifestyles and environmental conditions; (2)ensure and promote appropriate provisions and access to health care for the total community; (3)protect society from potential dangers (e.g., epidemics, hazardous environmental conditions or violent persons); and finally, (4) prevent environmental degradation and enhance the quality of the air, land and water.

Implementing actions in the State Health Functional Plan describe the Health Department's permit/approval processes that directly impact the proposed project. These include: administering permit processes for discharges into the air, surface water and ground water; and the review of a dual water system with brackish water providing for necessary irrigation and potable water reserved for human consumption. These subjects are discussed in the relevant sections of the environmental assessment. Also addressed in the State Health Functional Plan are implementing actions concerning the reuse of treated sewage effluent for irrigation purposes, excessive noise, and the adequacy of health care facilities. These areas are also discussed in the relevant sections of this report.

3.2.3 State Historic Preservation Functional Plan

The State Historic Preservation Functional Plan is prepared and maintained by the State Department of Land and Natural Resources (DLNR).

An archaeological survey of the site has been conducted (Appendix D) to locate, describe and determine the significance of the historic and archaeological sites within the project area. As stated in the Historic Preservation Functional Plan, "By providing a means to preserve and perpetuate the public's knowledge of Hawaii's cultural heritage and history, the visitor industry's quality and visitor satisfaction is maintained and enhanced; a pride in our past is fostered, which in turn stimulates the other topic areas addressed in this plan..." The proposed Visitor/Resident Entertainment Attraction is consistent with this functional plan.

3.2.4 State Recreation Functional Plan

The State Recreation Functional Plan is prepared and maintained by the Department of Land and Natural Resources. The purpose of the Plan is "to assess present and potential demand and supply of outdoor recreation resources and to guide State and County agencies in acquiring or preserving lands of recreational value, providing adequate recreational facilities and programs, and ensuring public access to recreational areas."

The State Recreation Functional Plan also states that, "In addition to their intrinsic and scientific value, Hawaii's physical resources contribute to the State's superb living environment, furnish links with Hawaii's natural and cultural heritage, and provide many of the attractions which buoy the visitor industry." The proposed project will provide a means of recreation in the Ewa area to help promote Hawaii's cultural heritage.

3.2.5 State Tourism Functional Plan

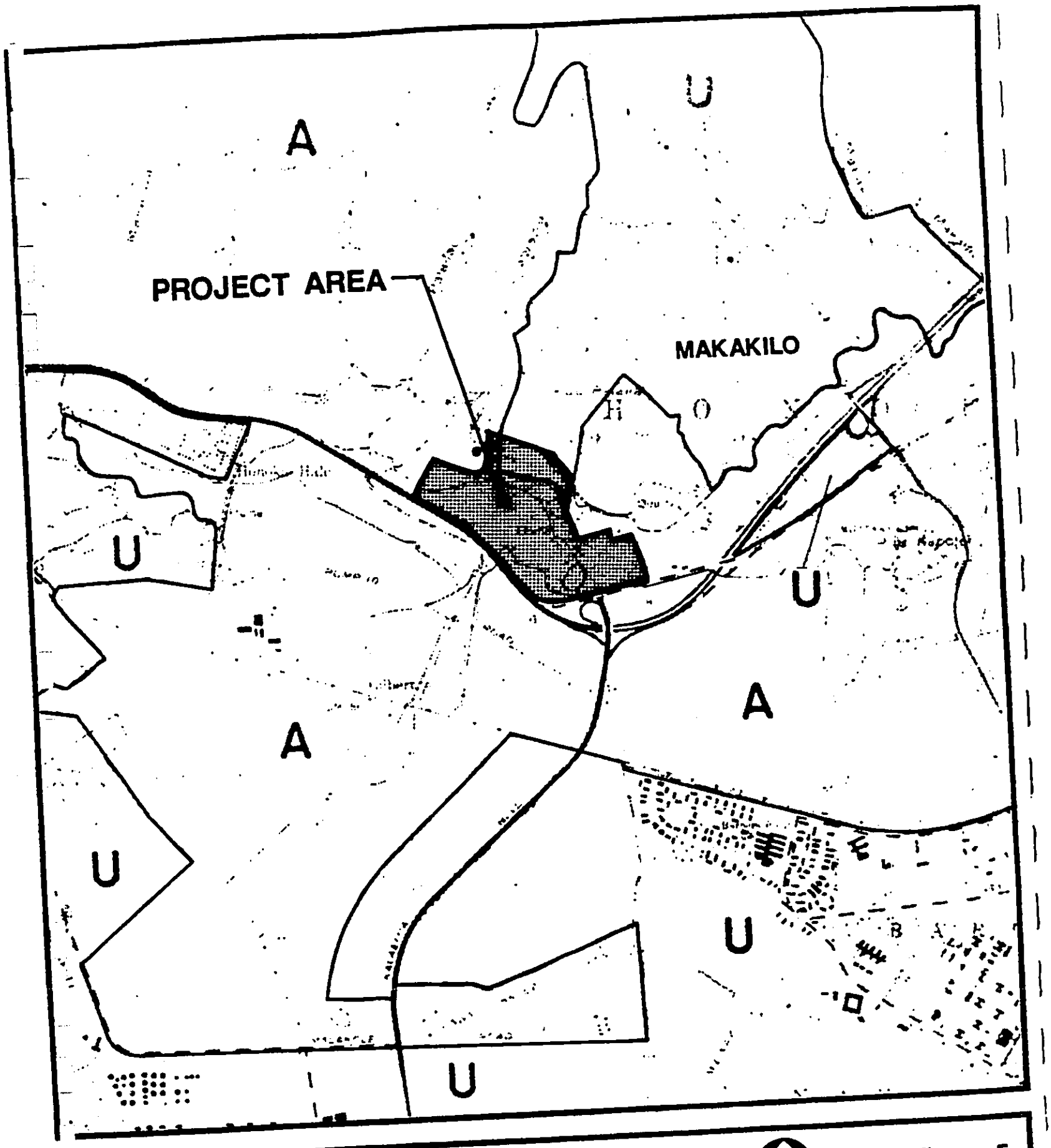
The State Tourism Functional Plan is prepared and maintained by the Tourism Office of the State Department of Planning and Economic Development (DPED). The overall theme of the Plan is, "the achievement of a visitor industry that constitutes a major component of steady growth for Hawaii's economy." The Plan identifies major issues and problem areas, and sets forth policies and actions "to insure against unplanned growth which could be damaging to the visitor industry and to the quality of life and well-being of the people of Hawaii". The Plan addresses the following functional areas of the visitor industry; tourism promotion, physical development, employment and career development and community relations.

The objectives, policies and implementing actions of the Tourism Functional Plan provide guidelines for a successful visitor industry development in Hawaii. The proposed Visitor/Resident Entertainment Attraction will directly interact Waikiki and all major Oahu activities as well as with the planned resort at West Beach and with the adjacent secondary urban center proposal. Due to existing and planned transportation links between these, a great deal of interaction is expected to occur. The proposal is planned to take advantage of these relationships through design themes directed to allure visitors.

3.3 STATE LAND USE LAW

All lands in the State have been classified in one of four land use districts, Urban, Rural, Agricultural, and Conservation, by the State Land Use Commission, pursuant to Chapter 205 HRS. The majority of the site is designated Agricultural, with a small portion as Urban, see Figure 5 and Table 4. Reclassification to the Urban District is a prerequisite for development of the subject property, as proposed and will be the objective of a subsequent petition request.

The State Land Use Commission Rules, adopted October 1986, require that an application for a boundary amendment show that it is "reasonable, not violative of Section 205-2[HRS] and consistent with the policies and criteria established pursuant to Sections 205-16, 205-17 and 205A-2, HRS" (Hawaii Land Use Commission Rules, Section 15-15-77). In reviewing petitions for reclassification of district boundaries, the Commission must specifically consider four criteria. The criteria are presented below, in italics, followed by a brief discussion of each criterion.



State Land Use Districts

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Figure: 5

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(1) *The extent to which the proposed reclassification conforms to the applicable goals, objectives, and policies of the Hawaii State Plan and relates to the applicable priority guidelines of the Hawaii State Plan and the adopted functional plans;"*

Comment: As discussed in Chapters 3.1 and 3.2 of this report, the proposed entertainment attraction is consistent with the goals, objectives and policies of the Hawaii State Plan and the guidelines of the State Functional Plans.

(2) *"The extent to which the proposed reclassification conforms to the applicable district standards."*

Comment: The applicable standards for the Urban District are found in Section 15-15-18 of the Land Use Commission Rules. These are reprinted and discussed below.

In determining the boundaries for the Urban District, the following standards will be used:

(1) It shall include lands characterized by a "city-like" concentration of people, structures, streets, urban level of services and other related land uses;

(2) It shall take into consideration the following specific factors:

A. Proximity to centers of trading and employment facilities except where the development would generate new centers of trading and employment;

B. Substantiation of economic feasibility by the petitioner;

C. Proximity to basic services such as sewers, water, sanitation, schools, parks, and police and fire protection; and

D. Sufficient reserve areas for urban growth in appropriate locations based on a ten year projection;

(3) It shall include lands with satisfactory topography and drainage and reasonably free from the danger of floods, tsunami and unstable soil conditions and other adverse environmental effects;

(4) In determining urban growth for the next ten years, or in amending the boundary, lands contiguous with existing urban areas shall be given more consideration than non-contiguous lands, and particularly when indicated for future urban use on State or County General Plans;

(5) It may include lands in appropriate locations for new urban concentrations and shall give consideration to areas of urban growth as shown on the State and County General Plans;

(6) It may include lands which do not conform to the standards in paragraphs (1) to (5):

A. When surrounded or adjacent to existing urban development; and

B. Only when such lands represent a minor portion of this District;

(7) It shall not include lands, the urbanization of which will contribute towards scattered spot urban development, necessitating unreasonable investment in public infrastructure or support services;

(8) It may include lands with a general slope of twenty percent or more which do not provide open space amenities or scenic values if the Commission finds that such lands are desirable and suitable for urban purposes and that official design and construction controls are adequate to protect the public's health, welfare and safety, and the public's interests in the aesthetic quality of the landscape.

Comment: The project site is strategically located adjacent to the secondary urban center to take advantage of the existing and proposed highway network. The project is proximate to many residential communities, which may serve as homes for employees. These communities include Makakilo, Hanokai Hale, the Ewa Villages, Ewa Beach and the planned communities of Ewa Marina and West Beach. The majority of the project site is relatively flat and readily adaptable for urban development.

(3) "Impact on Areas of Statewide Concern."

A. Preservation or maintenance of important natural systems or habitats.

Comment: There are no native or endangered species' habitats within the vicinity of the proposed project site (Chapter 4.7).

B. Maintenance of valued cultural, historical, or natural resources.

Comment: There are no valued cultural, historical, or scenic resources within the project site (Chapter 4.11).

C. Maintenance of other natural resources relevant to Hawaii's economy, including, but not limited to, agricultural resources.

Comment: Although prime designated agricultural land will be lost, this acreage is not essential to maintain the viability of the sugar industry or diversified agriculture (Chapter 4.5).

D. Commitment of state funds and resources

Comment: No State funds or resources are required for the development of the proposed project.

E. Provision for employment opportunities and economic development.

Comment: Long term employment opportunities projected for the petition request have been estimated at up to 1,200 employees.

(4) In establishing the boundaries of the districts in each county, the Commission shall give consideration to the General Plan of the County in which the land is located.

Comment: The Honolulu General Plan clearly states the long range objective of establishing the Secondary Urban Center (SUC) in Ewa (see discussion in Section 3.4 below). The proposed attraction will provide a major new source of employment in the designated SUC area and will therefore serve to implement the General Plan growth policy.

3.4 GENERAL PLAN OF THE CITY AND COUNTY OF HONOLULU

The General Plan for the City and County of Honolulu (adopted 1977) was revised by the City Council in December 1982. The Plan is a statement of the long-range social, economic, environmental and design objectives for the general welfare and prosperity of the people of Oahu. A discussion of the relevant objectives and policies of the General Plan follows:

- Population Objectives and Policies. The major thrust in this section is to manage the growth of the island's population in a manner that promotes the ideals of social, economic and environmental harmony. A major policy of the General Plan is to direct growth to the "secondary urban center in the West Beach-Makakilo area" (Policy C 2).

  Comment: The proposed entertainment attraction will provide a significant employment base for the new Ewa Town Center and thereby directly promote the population objectives and policies.

- Economic Activity Objectives and Policies. Relevant objectives of the General Plan with respect to economic activities include Objective A: "To promote employment opportunities that will enable all the people of Oahu to attain a decent standard of living;" and Objective B: "To maintain the viability of Oahu's visitor industry."

  Comment: The entertainment attraction is expected to create a variety of employment opportunities to island residents. A critical issue which is addressed by the project is the decline of Oahu's share of the visitor industry. With the advent of direct mainland flights, the neighboring islands are attracting an increasing share of the visitor market. No new major entertainment attraction has been developed on Oahu in recent years. Thus, the proposal presents the opportunity to recapture, or at least compete more effectively for Oahu's market share of the visitor industry.

  The proposed project is of such a scale, that it may be recognized internationally, and has the potential to expand Hawaii's economic base by

demonstrating Hawaii's strategic location and cultural connection between the eastern and western worlds. This would improve Hawaii's capacity to attract new businesses and activities, which would provide jobs for Hawaii's people.

- Transportation and Utilities. The major thrust of this section is to provide new and innovative means of transportation and utilities that are efficient and cost effective.

  Comment: Planning for the Ewa Secondary Urban Center has long envisioned a multi-modal transportation system including transportation options such as a light rail system, a marine bus system providing service between the marinas at West Beach, Ewa Marina and Honolulu, and a possible limited-access "Ewa Parkway" facility which would connect the Ewa area with Honolulu via a 1.1 mile tunnel under the Pearl Harbor Channel.

- Physical Development and Urban Design. The Physical Development and Urban Design element of the General Plan is closely related to the Population element, with the major thrust being the coordination and sequencing of infrastructural systems to accommodate population objectives. Objective C, similar to Population Policy 2, is "To develop a secondary urban center in the West Beach-Makakilo area." Policy C(2) states, "Encourage the development of a major residential, commercial, and employment center within the secondary urban center."

  Comment: The entertainment attraction will act as a prime employment base for the adjacent secondary urban center, which would directly implement this objective.

- Culture and Recreation. Objective A, "To foster the multiethnic culture of Hawaii", supported by Policies 1 and 2 will be satisfied with the proposed project.

  Objective B, "To protect Oahu's cultural, historic, architectural and archaeological resources," is an objective that will also be supported by the proposed project with representative and restorative architecture.

  A major emphasis of the Visitor/Resident Entertainment Attraction is to encourage a greater public awareness, understanding and appreciation of Hawaii's cultural heritage, along with several other islands in the Pacific Basin. The design concept capitalizes on Hawaii's multiethnic and cultural diversity with attractions that are intended to entertain, engage and educate the visitor. The attraction will provide the visitor with numerous and varied visual, culinary and emotional experiences.

3.5 EWA DEVELOPMENT PLAN

The City and County's Development Plan (DP) program provides a relatively detailed framework for implementing General Plan objectives and policies on an area-wide basis. A total of eight Development Plan regions have been established on Oahu. The Development Plan Ordinances consist of three elements: Common

CORRECTION

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

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Provisions, Special Provisions (for each DP area), and Development Plan Maps (Land Use and Public Facilities).

3.5.1 Development Plan Text

Section 3 of the DP Common Provisions describes the various land use categories found within each of the eight planning areas. The commercial designation requested for the site is described as follows: "...[C]ommercial areas are principally for business or commercial activities, in contrast to other types of economic uses. Limited accessory uses directly related to the principal uses may be permitted but only on the same lot and not as a principal use."

The Special Provisions for the Ewa Development Plan includes an area description which states, "A new secondary urban center shall be gradually developed in the West Beach-Makakilo area in order to accommodate most of the influx of population into the area between 1980 and the year 2000." The "Attraction" is located adjacent to the secondary urban center, and as an employment base, would help to implement this objective.

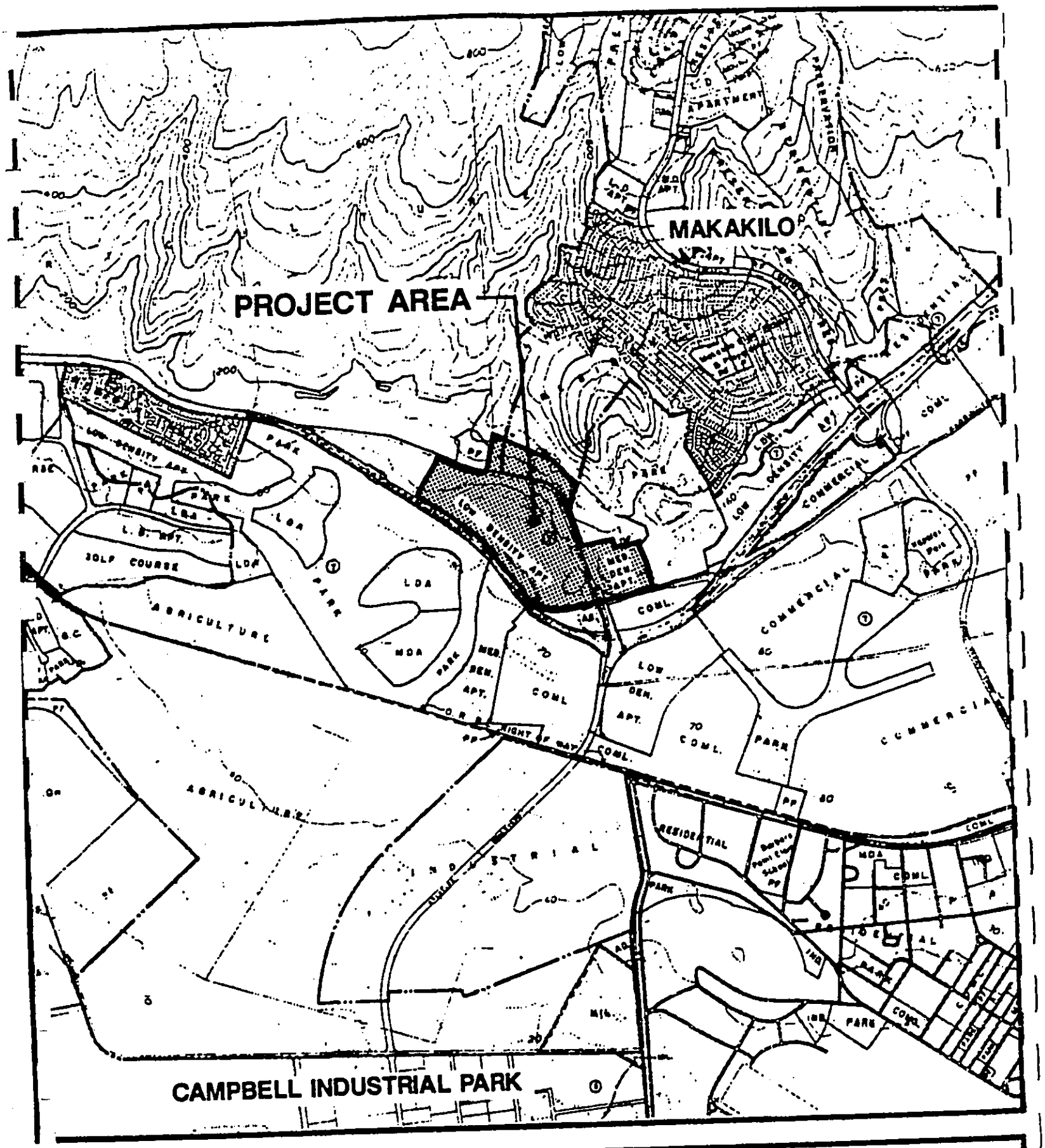
3.5.2 Land Use Map

Major revisions were made in the FY 1985-85 annual review of the Ewa DP when the Ewa Town Center was first proposed (Figure 6). As indicated, four different land use designations dividing the proposed project site in the following manner: the majority of the site is Low Density Apartment; a Residential designation extends southward from Makakilo; along the eastern boundary is a Medium Density Apartment designation; and a designated sliver of Agriculture at the northwest portion of the site.

As noted earlier, representatives of the Campbell Estate have indicated their intent to request a Development Plan redesignation of a similar amount of land within the proposed secondary urban center from commercial to residential. In effect, the land use pattern, housing and population implications to the Ewa Development Plan would remain unchanged.

3.5.3 Public Facilities Map

The Public Facilities Map (as amended through June 13, 1986) is reproduced as Figure 7. Proposed, privately funded roadways are indicated on the map by a series of outlined squares. One of the proposed roadway segments links the Palailai Interchange with the proposed Makaiwa Sanitary Landfill. This segment uses, for the most part, the old Farrington Highway alignment passing through the site. The other proposed roadway alignment appears to link Makakilo with the proposed Landfill access road. Other facilities indicated on the map are the approximate locations of two potable water reservoirs (PW RES) and associated transmission lines, and a site for a non-potable water reservoir (NPW RES) and associated transmission line. Programmed within six years, publicly funded roadway improvements are shown as solid dots located within the H-1 Freeway right-of-way while unprogrammed roadway improvements, of beyond six years, are indicated for Farrington Highway east of the project site.



Ewa Development Plan
Land Use Map

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Figure: 6

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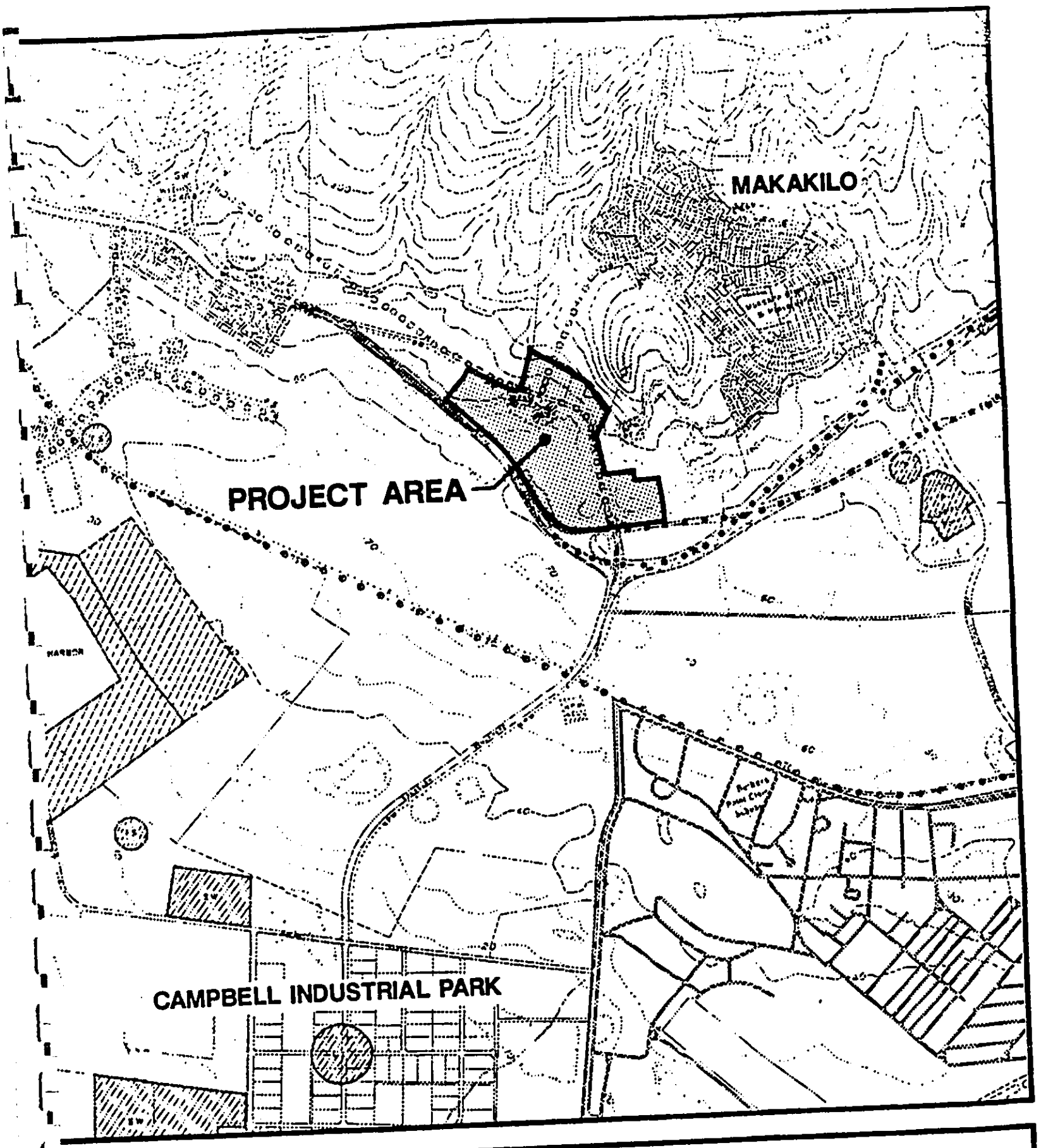

Ewa Development Plan
Public Facilities Map

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Figure: 7

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3.6 COUNTY ZONING

Under the Comprehensive Zoning Code,, approximately 95% of the subject site is zoned Ag-1; Restricted Agricultural District (See Table 6). The remainder of the site is zoned R-5; Residential District (5%). At the appropriate time, the applicant will apply for a zone change to the commercial zone.

3.7 COASTAL ZONE MANAGEMENT/SPECIAL MANAGEMENT AREA RULES AND REGULATIONS

The objectives and policies of the Hawaii Coastal Zone Management (CZM) Program are included in the Shoreline Projection Act of 1975 (Chapter 205A-2, Hawaii Revised Statutes, Part I). All of Oahu lies within the CZM area except for the forest reserve areas. Relevant CZM objectives and policies pertaining to the proposed project are as follows:

"(b)(5)(A) Provide public or private facilities and improvements important to the State's economy in suitable locations."

Comment: The proposed project is an excellent example of private party endeavors which will stimulate the region, county and state economies. Its location is also sensitive to the State's needs by not being proposed within the Coastal Zone Management or the Special Management Area. A more indepth discussion concerning the economic benefits of the proposal are discussed in Chapter V of this Environmental Impact Statement.

"(c)(2)(C) Support state goals for protection, restoration, interpretation, and display of historic resources."

Comment: The theme "Crossroads of the Pacific" for the Visitor/Resident Entertainment Attraction is carried out through representative architecture, cultural displays, and many other special effects which will help to instill the "aloha spirit" to those who visit. A more indepth discussion on how the proposed project relates to State goals concerning historic resources may be found in Chapter III of this Environmental Impact Statement.

(c)(3)(D) Encourage those developments which are not coastal dependent to locate in inland areas."

Comment: The project does not require locating in the coastal area. The closest distance to the coastline is approximately two miles away, toward West Beach.

The project site does not lie within the Special Management Area (SMA) and therefore does not require a Special Management Area Permit from the City and County of Honolulu.

3.8 ENVIRONMENTAL IMPACT STATEMENTS (CHAPTER 343, HRS)

Section 343-5 (a)(6) HRS notes that the provisions of Chapter 343 apply to "any amendment to existing county general plans where the amendment would result in designations other than agriculture, conservation, or preservation..."

A State Attorney General opinion (Opinion No. 85-30) has broadened the scope of the definition of county general plans to include "...non-county initiated actions which propose amendment or change to a county's planning documents, however denominated, as development plans or otherwise, and which would result in a designation other than agriculture, conservation or preservation." Thus, because the Visitor/Resident Entertainment Attraction will require a change in development plan designation from agriculture to commercial, it is subject to the Chapter 343 requirements.

Accordingly, an environmental assessment of the project was prepared and submitted to the Department of General Planning (DGP). On October 28, 1986, DGP informed the applicant that an EIS would be required pursuant to the provisions of Chapter 343.

CHAPTER IV

ASSESSMENT OF EXISTING CONDITIONS AND PROBABLE IMPACTS: PHYSICAL ENVIRONMENT

This section describes the physical environment in which the project will be situated. After a brief description of the existing conditions, probable impacts (where appropriate) both to and from the proposed action are analyzed. In certain cases, impacts are distinguished as: (1) *Short-term impacts*, usually of short duration and confined primarily to the construction period; (2) *Long-term impacts*, that occur while the development is operational or represent irreversible or irretrievable impacts; or (3) *Cumulative impacts*, resulting from the combined effects associated with the development of the entertainment attraction and other projects in the region. Where appropriate, mitigative measures are proposed to ameliorate or reduce adverse impacts.

4.1 EXISTING USES AND OWNERSHIP

Approximately 90 acres of the 106-acre project site were formerly used for sugar cane cultivation by Oahu Sugar Company. Use of these fields was discontinued in 1982. At the present time the only use of the property is to provide access to: 1) A 138-KV transmission line crossing the site providing service from the Kahe Power Plant to the Campbell Industrial Park (A 46-KV transmission line maintained by HECO also runs along the eastern edge of the old Farrington Roadway through the project site); 2) The two Barbers Point 215' water tanks (4.0 and 5.0 million gallon capacities) and the 24- and 30-inch water mains (servicing the two water tanks) lying under the old Farrington Highway roadbed maintained by the Board of Water Supply; and, 3) A new satellite earth station facility operated by the American Satellite Company located on the western slope of Puu Palailai.

The Estate of James Campbell, the owner of the project site, is in the process of subdividing and conveying title of the site to the applicant. The 1.2 mile segment of the old Farrington Highway roadbed, which crosses a portion of the site, is owned by the State of Hawaii. Negotiations are underway between Campbell Estate and the State of Hawaii to exchange this segment for another segment of Farrington Highway owned by Campbell nearer Waipahu. The segment transiting the project site would then be conveyed by Campbell to the applicant.

The site is currently designated for low and medium density apartments (LDA and MDA), and residential uses on the Ewa Development Plan (Table 4).

Table 4: EXISTING LAND USE DESIGNATIONS

TMK Parcel/Lot	Size (ac.)	Land Use Designations
9-1-15: (por 5)		
Lot 79	10	State Land Use: 33% Agriculture, 66% Urban. County DP: 33% Agriculture, 66% Residential.
Lot J	8	State Land Use: 100% Urban. County DP: 100% Residential.
9-1-15: (por 17)	68	State Land Use: 100% Agriculture. County DP: 100% Low-Density Apartment.
9-1-16: (por 07)	20	State Land Use: 100% Agriculture. County DP: 100% Medium-Density Apartment.
Total	106	

Source: Helber, Hastert, Van Horn and Kimura, Planners 1986

4.1.1 Probable Impacts

The proposed entertainment attraction will alter the vacant undeveloped parcel to an urban state (although over half of the project area will remain in landscaped open space). The development will require the relocation of the 138 KV transmission line crossing the site. Access to the satellite earthstation facility will also have to be relocated (discussions with the landowners, Campbell Estate, indicate that arrangements have been made to provide an alternative access for the earthstation operators). Existing access to the BWS facilities (water tanks and transmission mains) and the existing 46-KV electrical transmission lines will not be affected.

Under the proposed use, the site would be redesignated Commercial. Approximately 1,250 potential residential, low and medium density dwelling units (approximately 2,500 future residents) would thus be removed from the Ewa DP area and an additional 106 acres of commercially designated land would become available within the DP area. However, representatives of the Campbell Estate have indicated their intent to request redesignation of a similar amount of land near the proposed Ewa Town Center from commercial to residential uses. Therefore, the effect of the proposed change will be completely offset by the Campbell Estate redesignation.

4.2 SURROUNDING LAND USES

4.2.1 Existing Land Uses

The Ewa area encompasses the entire Ewa Plain which stretches from Kunia Road in the east to Kahe Point in the west. Within this lie four residential communities, one major industrial park, a deep draft harbor, a major military base, and a portion of Oahu's largest sugar plantation. In addition, there are a number of less extensive activities, such as quarrying operations and smaller scale agricultural operations (such as horticulture). A brief description of the major surrounding land uses is provided below.

Makakilo. A 22 year-old residential community consisting of mid-priced single-family and multi-family housing is located on the lower slopes of the Waianae Range to the north and east of the subject site. About 2,400 housing units had been built by 1985, with an estimated 2,700 units remaining to be built. The population in 1985 was 9,000 with the ultimate future population estimated at 16,700.

Ewa Beach. An older, completed residential community with a small commercial center is located southeast of the subject site along the shoreline. Homes in Ewa Beach are moderately priced, except for some oceanfront property. The Ewa Beach community had 3,465 housing units and 14,500 residents in 1985.

Ewa Villages. A group of existing plantation villages (Varona, Tenney, Renton, and Fernandez) that are also known collectively as the Ewa Villages, are southeast of the subject site and west of Fort Weaver Road along Renton Road. Most of the existing Ewa Village housing units are very old and are low priced. As of 1985, 3,000 people lived in Ewa Villages. The City has initiated two low income housing projects within this area.

Honokai Hale/Nanakai Gardens. To the west of the project area, adjacent to and south of the H-1 Freeway lie the communities of Honokai Hale and Nanakai Gardens. This is an older completed residential tract with 500 moderately priced housing units and 2,000 population in 1985.

James Campbell Industrial Park (JCIP). An approximately 2,400-acre industrial park with 1,360 acres absorbed and the remaining acreage available for future expansion is located south of the subject site. JCIP users include a mix of heavy industrial and light industrial businesses. The businesses provided employment for 2,500 people in 1985.

Barbers Point Deep Draft Harbor (BPH). A partially completed deep draft harbor for which the primary basin has been completed is located west of JCIP. Development of wharf and dock facilities will be started in the near future, with the first phase of development scheduled to begin in 1987. Complete development of the harbor and all facilities is expected to take 10-15 years.

Naval Air Station, Barbers Point (NASBP). A Naval aviation facility that housed 2,900 residents in 1985 and provided about 1,500 civilian jobs is located south of the subject site. "The mission of NASBP is to maintain and operate facilities and provide services and materials to support operations of aviation activities and units of the operating forces of the Navy." (Department of the Navy, 1985)

Palailai Sanitary Land Fill. The landfill is operated by Pacific Concrete and Rock as a private landfill. It is located within the Palailai cindercone approximately 1,500 feet east of the project site. The landfill is scheduled to be closed in 1988 and is planned as a future regional park area by the owners of the site, Campbell Estate.

Comsat Facility. A small satellite communications station has recently been constructed at the base of Puu Palailai east of the project site by the American Satellite Company. The facility consists of a single dish satellite antenna and a small masonary block equipment building.

4.2.2 Approved Developments in Ewa

The three major planned developments located in the Ewa area are discussed below. All have recently received governmental approvals. Physical development has just begun on one of the projects and is scheduled to begin on the other two in 1987. A brief discussion of each development follows.

Ko Olina. Ground-breaking for the planned 970-acre Ko Olina (West Beach) residential/resort community took place on December 2, 1986. Land and infrastructure development is scheduled to begin in 1987, with completion anticipated in mid-1989. The Estate of James Campbell has conveyed the initial phase (620-acres) in fee simple to the developer. First phase development plans call for 5,200 housing units. 3,700 units will be apartment/condominium units, primarily in high-rise buildings, with 1,500 units designated as low-rise, lower density attached units located around the golf course. 4,000 visitor units, consisting of hotel rooms and resort condominiums, are also planned. The Ko Olina development plans include the following amenities and facilities: A 500-slip marina; An 18-hole championship golf course; Four newly created sandy beaches; A Hawaiian cultural center; Two shopping centers, one of which will be a specialty center similar to San Francisco's Fisherman's Wharf; and, a number of dinner house restaurants.

Ewa Marina. Ewa Marina, located on the coast five miles south of the project site, is a master planned water-oriented development that consists of 727 acres of land and water area organized around the central focus for the project, a 98-acre marina. The marina is the dominant physical element of the master plan, providing over 4.5 miles of water frontage to serve as the location for residential and commercial purposes. This waterway also establishes the major design themes for residential and boating activities in coordination with the open space/recreation, major utility, and flood control system. Of the total development area, 476 acres are allocated for residential use. This acreage is projected to support a total of 4,850 units, subdivided into 26 residential development areas. A range of residential unit types is to be provided in order to achieve maximum market penetration through housing offered by different builders. An estimated

10% of the residential program will be geared toward affordable housing pricing. The plan also includes a commercial marina, restaurants, a retail shopping center and a golf course as well as a school and parks.

Ewa Plantation (Pearl Meadows). Ewa Plantation, also known as Pearl Meadows, is a planned residential development adjacent to the older Ewa Villages. The project site is located adjacent to Fort Weaver Road, approximately three miles east of the subject site. The first phase consists of 4,527 housing units with 279 single family detached units and 4,248 apartment/condominium units. Total development is expected to include about 8,500 units consisting of single family detached, single family attached, townhomes, and apartment/condominium units at various densities.

4.2.3 Proposed Developments

Two projects have been announced recently near the proposed entertainment attraction: The Kapolei Town Center to be located south of the project site; and a housing development proposed by the Hawaii Housing Authority (HHA) located to the east of the Barbers Point Access Road.

Kapolei Town Center. The Estate of James Campbell is proposing to develop a 700-acre "Town Center" makai of the H-1 Freeway approximately one mile southeast of the project site. An additional 250 acres of the project are located mauka of the Freeway including: a 50-acre residential site located above Honokai Hale near the western boundary of the project site; the proposed 140-acre "Palailai Regional Park" to be located on the site of the soon-to-be-closed Palailai Landfill directly to the east of the project site; and additional residential lands located further east between Makakilo and the H-1 Freeway. The Estate is in the process of preparing a petition to the State Land Use Commission to reclassify the 950-acre project area into the State Urban District from the current Agriculture District. According to the market study projections prepared for the project, the Kapolei Center could provide employment for 12,500 persons and support a residential population of 8,900 residents in 3,040 dwellings by 2005.

Hawaii Housing Authority (HHA). The HHA is planning to develop an approximately 600-acre parcel located due east of the petition area, across Barbers Point Access Road. HHA plans to build a mixed housing development where both market-rate and "affordable" housing units will be produced. The project could provide 4,000 housing units with a production rate of 400 units per year. Implementation of the first increment of the proposed development will be under way in two years. HHA is also working with Honolulu Department of Housing and Community Development on the housing program.

4.2.4 Probable Impacts

The proposed entertainment attraction will play a key role in implementing the County General Plan policies of establishing a Secondary Urban Center (SUC) in Ewa. The significant employment opportunities offered by the project will provide jobs in the Ewa region to support the housing and other urban services proposed for the area and thus contribute to the viability of the SUC concept of a self-contained, second city. The developers of the Kapolei Town Center, the Estate of

James Campbell, has indicated their support of the project because of its complimentary impact on the growth of the Ewa region.

No adverse impacts of the project on immediately surrounding land uses, such as the Palailai Landfill and the Comsat Facility are expected. Impact of the landfill operation (scheduled to be closed in 1988) have been considered. These impacts include the possibility of odors and potentially hazardous gases (such as methane) drifting from the landfill to the site, and the potential for leachate from the landfill to be adversely impacted by the proposed action. The potential impacts related to leachate area discussed in Section 4.6.3.

The project site is insulated from the Palailai Landfill by a distance of 1,500 to 2,500 feet and the natural wall of the Palailai cindercone. Odor and hazardous gases should not be a problem providing the landfill is operated according to accepted operating procedures for sanitary landfills. As noted above, the landfill is nearing capacity and is scheduled to be closed in the near future. The landfill site has been designated as "Park" on the Ewa D.P. land use map and is identified as a regional park on the Campbell Estate long range development plan. Every effort will be made to reclaim this landfill for subsequent use as a major recreation area for future Ewa residents.

4.3 CLIMATE

The climate of the project area is constant and relatively dry, with prevailing trade winds providing a cooling influence. Wind data is available from the Naval Air Station, Barbers Point, located south of the site. The dominant wind regime in the Barbers Point area is the northeast tradewinds which blow 85 percent of the time at an average of 9 knots per hour.

Temperature in the project area ranges from 72 to 80 degrees Fahrenheit (F). Climactic data taken at Honolulu International Airport in 1983 show the warmest average monthly temperature is 80.7 F and the coolest monthly average temperature is 72.3 F. The highest temperature of record is 93 F and the lowest temperature of record is 53 F.

The Ewa Plain experiences light rainfall of about 20 inches per year.

4.4 GEOLOGY, PHYSIOGRAPHY AND TOPOGRAPHY

The project area is located at the foot of the Waianae range on the Ewa Plain. Encompassing much of southwestern area of Oahu, the Ewa Plain is underlain by an elevated coral reef partially covered by alluvium. Honolulu Series lava flows are interbedded with reef deposits suggesting that the two were forming at the same time.

Puu Palailai, rising to a height of 492 feet above mean sea level (MSL), is the major physiographic feature visible from the site (peak height approximately 1,500 feet east of the rear property line). Since most of the site was under sugar cane cultivation until 1982, much of it has been graded with both a furrow-irrigation

system and access roadways in place. At the east end of the site, an abandoned 3-acre *punawai* was once used to store irrigation water. This prominent man-made feature consists of a circular earthen berm rising five to ten feet above the adjacent grades. A 1.2 mile segment of the now closed Farrington Highway bisects the property. This is a two-lane, bi-directional roadway in fair condition. Access to the roadway is restricted to authorized vehicles by large metal gates at both intersections with the realigned Farrington Highway. Elevations at the site vary from a low of 85 feet MSL at the southeastern boundary with Farrington Highway to approximately 200 feet MSL at the northern boundary above the proposed nursery site.

4.4.2 Probable Impacts

Because the site has been extensively graded, natural topographic features have long-since disappeared. The project respects the lay of the land and will use the gently sloping property to its maximum advantage.

4.5 SOILS AND AGRICULTURAL POTENTIAL

4.5.1 Existing Conditions

Soils have been identified in terms of four classification systems: 1) the United States Department of Agriculture, Soil Conservation Service (SCS) system; 2) the University of Hawaii's Land Study Bureau (LSB) system; 3) the Agricultural Lands of Importance in the State of Hawaii (ALISH) system; and, 4) the proposed State of Hawaii's Land Evaluation and Site Assessment (LESA) system.

Soil Conservation Service. The U.S. Soil Conservation Service (SCS) method has an eight class capability system, rating the soils I through VIII with I representing the highest capability and VIII the lowest. The soils of the site were given a rating between I and IV if irrigated, and between IV and VII if non-irrigated.

Land Study Bureau. The University of Hawaii's Land Study Bureau (LSB) Detailed Land Classification system ranks soils in five overall productivity categories, ranging from the best, "A", to worst "E". Factors in this ranking include machine tillability, stoniness, texture, clay properties, drainage, rainfall, elevation, and slope. The overall productivity ratings for the site as are: "A", "B","C" and "E". The quarry portion of the site, due to its nature, was given no productivity rating.

ALISH. The State of Hawaii Department of Agriculture ALISH map (Agricultural Lands of Importance to the State of Hawaii) has identified the site as containing two land types. The 95-acre parcel has been identified as "Prime Agricultural Land," which has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed according to modern farming methods. Another small portion of the site near Puu Palailai was identified as containing "Other Important Agricultural Land," land other than Prime or Unique Agricultural Land that is also of statewide or local importance for agricultural use.

LESA. The Hawaii State Legislature in 1983 established the State of Hawaii Land Evaluation and Site Assessment Commission (LESA) to formulate a system which would identify and recommend for legislative adoption "important agricultural lands" (IALs) based on a classification system developed by the Commission. Specifically, the Commission was to evaluate and recommend a set of agricultural production goals for the State including an assessment of economic feasibility and the identification of specific locational and land area requirements to attain this objective. The entire project area has been identified as important agricultural land.

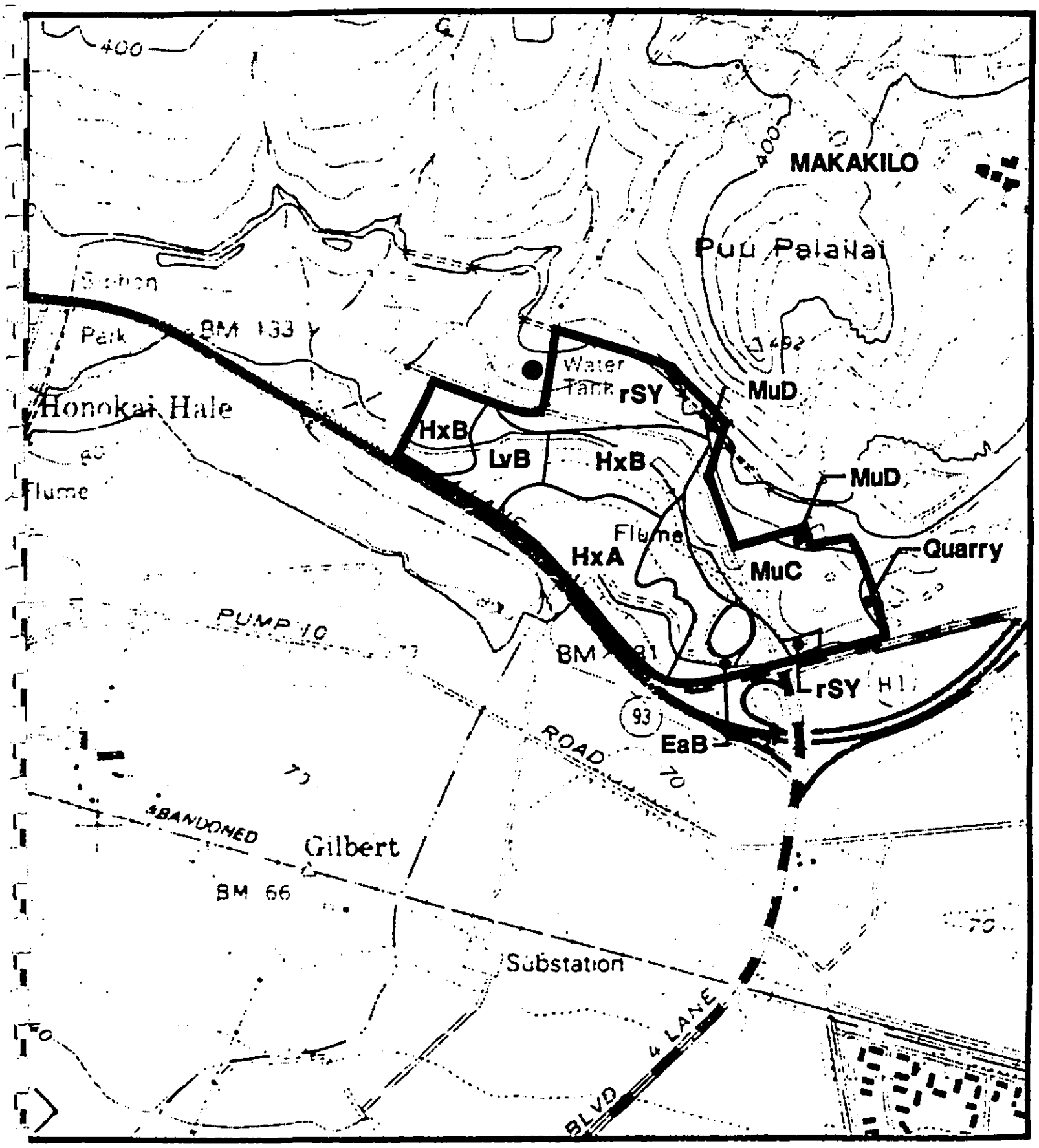
The soil types within the petition area have been identified using the SCS soils maps (Figure 8). Characteristics of each soil type identified in Figure 8 is described below. The LSB Overall Productivity Rating, the ALISH designation and the LE (Land Evaluation) score have been added to each description.

EaB Ewa silty clay loam, 3 to 6 percent slopes. This soil occurs on alluvial fans and terraces. In a representative profile, the surface layer is dark reddish-brown silty clay loam about 18 inches thick. The sub-soil, about 42 inches thick, is dark reddish-brown and dark-red silty clay loam that has subangular blocky structure. The substratum is coral limestone, sand, or gravelly alluvium. The soil is neutral in the surface layer and subsoil. Permiability is moderate. Runoff is slow, and the erosion hazard is slight. The SCS rating for this soil type is II when irrigated and IV non-irrigated. The LSB rating for this soil type is "A", with a LE rating ranging between 70 and 90.

HxA Honouliuli clay, 0 to 2 percent slopes. This soil occurs in the lowlands along the coastal plains. In a representative profile, the soil is dark reddish-brown, very sticky and very plastic clay throughout. The surface layer is about 15 inches thick. The subsoil and substratum have subangular blocky structure, and they have common to many slickensides. The soil is neutral to mildly alkaline. Permiability is moderately slow. Runoff is slow, and the erosion hazard is no more than slight. The SCS rating for this soil type is I when irrigated and IV non-irrigated. The LSB rating for this soil type is "B", with a LESA rating ranging between 71 and 91.

HxB Honouliuli clay, 2 to 6 percent slopes. On this soil, runoff is slow and the erosion hazard is slight. The SCS rating for this soil type is II when irrigated and IV non-irrigated. The LSB rating for this soil type is "B", with a LESA rating between 70 and 90.

LvB Lualualei stoney clay, 2 to 6 percent slopes. This soil occurs on Oahu adjacent to drainageways. It is similar to Lualualei clay, 0 to 2 percent slopes, except that there are enough stones to hinder machine cultivation. Runoff is slow, and the erosion hazard is slight. The SCS rating for this soil type is III when irrigated and IV non-irrigated. The LSB rating for this soil type is "B", with a LESA rating between 62 and 82.



Soil Conservation Service
Soil Types

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Figure: 8

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MuC Molokai silty clay loam, 7 to 15 percent slopes, severely eroded. It has a profile like that of Molokai silty clay loam, 0 to 3 percent slopes, except that most of the surface layer and part of the subsoil have been removed by wind and water erosion. Runoff is medium to rapid, and the hazard of wind and water erosion is severe. There are a few small gullies not under cultivation. Pebble-size, weathered rock fragments are common in the plow layer in cultivated areas. The SCS rating for this soil type is III when irrigated and IV non-irrigated. The LSB rating for this soil type is "C", with a LESA rating ranging between 68 and 88.

MuD Molokai silty clay loam,, 15 to 25 percent slopes. In most places the slope does not exceed 20 percent. Runoff is medium, and the erosion hazard is severe. Workability is slightly difficult because of the slope. The SCS rating for this soil type is IV when irrigated and IV non-irrigated. The LSB rating for this soil type is "E", with a LESA rating ranging between a low 57 and 77.

rSY Stoney steep land. Consists of a mass of boulders and stones deposited by water and gravity on side slopes of drainageways. The slope ranges from 40 to 70 percent. Elevations range from 100 to 1,500 feet. The annual rainfall amounts to 20 to 80 inches. Stones and boulders cover approximately 50 to 90 percent of the surface. There is a small amount of soil among the stones that provides a foothold for plants. Rock outcrops occur in many places. The SCS rating for this soil type does not include an irrigation option. Its non-irrigated rating is VII. The LSB rating for this soil type is "E". LESA does not have a rating for this soil type.

4.5.2 Probable Impacts

The impacts of the project on soils consist of two elements: erosion and indefinite loss of agricultural land.

4.5.2.1 Erosion

Minor increases in erosion would result from changes in topography, drainage patterns, and vegetative cover due to land clearing and construction. After construction is completed and vegetative cover has been replaced, the level of erosion will decrease depending upon soil stability conditions.

4.5.2.2 Loss of Agricultural Lands

A long term impact of the proposed project is the loss of lands identified as suitable for agriculture. Major elements of this long-term impact are: (1) The impact on the Oahu Sugar Company; and (2) the impact on "important agricultural lands."

(1) Impact on Oahu Sugar Company (OSCo)

Because of increased operational efficiencies, OSCo has managed to reduce its plantation size by 4,400 acres between 1980 and 1983 while maintaining production yields. The fields on the project site were abandoned as part of this reduction in 1982. The principal reason for ceasing sugar cultivation in the area related to the high operating costs of farming the fields relative to the yields produced. Particularly, OSCo considered the subject site as poor from an agronomic point of view, containing large quantities of field stone, coral outcropping and poor soil, as well as slightly saline irrigation water. The distance from the site to the OSCo factory, and its impact on additional trucking costs, was also a decisive factor in ceasing agricultural operations.

(2) Impact on Important Agricultural Lands

The urbanization of the project site will result in the withdrawal of approximately 90 acres of land classified as "Important Agricultural Lands" by the LESA Commission.

Article XI, Section 3 of the State Constitution mandates that important agricultural lands shall not be reclassified or rezoned without meeting standards and criteria established by the Legislature. Implementing Action B(5)(c) of the State Agriculture Functional Plan states that "Until standards and criteria to conserve and protect important agricultural lands are enacted by the Legislature, important agricultural lands should be classified in the State Agricultural District and zoned for agricultural use, except where, by the preponderance of the evidence presented, injustice or inequity will result or overriding public interest exists to provide such lands for other objectives of the Hawaii State Plan.

As noted earlier, standards and criteria regarding the reclassification of important agricultural lands to the Urban District have been promolgated by the LESA Commission as part of their legislative mandate. These standards and criteria have not been officially adopted as public policy. Moreover, they were formulated to provide direction to State land use policy, not County policy. Nevertheless, they represent an important step and are presented below:

1. *The proposed designation conforms to the Hawaii State Plan.*

2. *The proposed designation conforms to the County General and/or Community Development Plans.*

3. *The proposed redistricting is based on a demonstrated need for non-agricultural use, such as housing, employment, economic development or public facilities, which overrides the IAL designation based on agricultural need, impact on production goals and feasibility.*

As discussed in Chapter III of this report, the proposed attraction is consistent with the intent and spirit of the Hawaii State Plan, and implements General and Development Plan policies regarding the development of the Ewa Secondary Urban Center (SUC). The employment opportunities provided by the development of the project will contribute to the economic development of the SUC and Leeward Oahu

in general. Moreover, the market study indicates a significant and demonstrated demand for a new entertainment attraction on the island of Oahu, thus meeting the third criteria requiring a demonstrated public need.

4.6 HYDROLOGY

The project site lies within the Pearl Harbor Ground Water Control Area (GWCA) as designated by the Department of Land and Natural Resources (DLNR) under Chapter 177, HRS, and administered through the Department's Administrative Rule, Chapter 166 of Title 13. In 1984, the DLNR established three subareas within the Pearl Harbor GWCA: the Koolau subarea; the Waianae subarea; and the coastal caprock subarea. The sustainable yield for the Koolau subarea was set at 195 MGD, The Waianae subarea included the Waianae basal aquifer and was determined to have a sustainable yield of 30 MGD. At the present time the Koolau subarea has an unallocated water resource of 90,000 GD. The Waianae subzone has an unallocated water resource of 6.46 MGD. A water use permit is required from DLNR if new groundwater resources are to be tapped or if plans require the modification or exchange of present groundwater uses.

The major well system in the area is the Pump 10 wells located approximately 1 mile west of the project site. These wells are currently producing approximately 5 mgd of brackish irrigation water - significantly less than the historic rates of 14 mgd. Decrease in pumpage is attributed to decreasing agricultural demands in the area.

The project site is located within the Waianae subarea of the Pearl Harbor GWCA within the Board of Water Supply's "No Pass" zone (an area within which no wastewater may be discharged into the underlying groundwater).

4.6.1 Groundwater

Groundwater in the Barbers Point area occurs in two aquifers, the deeper Koolau Volcanics and the overlying coral aquifer. The higher quality aquifer is the Koolau Volcanic Series (Waianae Aquifer). The coral aquifer contains brackish to salt water. Marine, clay and silt sediments and alluvium separate the Koolau Volcanics from the coral aquifers. The marine sediments and alluvium are materials of low permeability, which form an aquiclude. Under non-pumping conditions, this aquiclude retards the flow of water from the Koolau Volcanic aquifers to the coral aquifers.

Precipitation in the Koolau Range infiltrates to supply basal ground water in the Koolau Volcanics. Basal water consists of a fresh body of water floating on salt water.

The coral aquifer is recharged by direct infiltration of rainfall, infiltration of stream runoff, and infiltration of irrigation water applied in excess of crop requirements. The water in the coral aquifer consists of a thin lens of fresh to brackish groundwater which grades into sea water as it approaches the shore. Discharge from the coral aquifer is to the ocean. (Dames & Moore, 1985)

4.6.2 Surface Drainage

(Information for this section is summarized from the engineering report presented in Appendix B)

With the exception of about 12 acres, the project site presently drains to the existing culverts which cross the H-1 Freeway (See Exhibit C, Appendix B). On-site, former agricultural operations established a system of open ditches to collect and transport storm drainage runoff to the culverts located under the H-1 Freeway. These culverts discharge the storm water into agricultural ditches located on the makai side of the freeway which are used by Oahu Sugar Company for irrigation. Runoff from the other 12 acres flows towards a culvert in old Farrington Highway and eventually crosses the H-1 Freeway.

Runoff from intense storms which exceed irrigation requirements are conveyed to ditches to major drainage channels which extend through Campbell Industrial Park and discharge into the ocean.

4.6.3 Probable Impact

4.6.3.1 Groundwater

As noted in Section 6.4.3, water for the project (both potable and non-potable) will be provided from within existing allocations and resources of Oahu Sugar Company and the Estate of James Campbell (with the appropriate government approvals).

Project plans currently call for several acres of lagoons to be created on the project site. These lagoons will be lined to prevent leakage and will be filled with brackish water from the nearby Pump 10 wells. Irrigation of the landscaped areas and the plant nursery will also be provided by Pump 10 source.

The use of brackish water on the project site should have an insignificant hydrologic impact since the area was formerly irrigated from the same source (Pump 10 wells) and the general area's underground aquifer water has, in previous explorations, proven to be non-potable. This impact will be further reduced by the planned lining of the water ponds and lagoons.

Concerns have been raised about the environmental impact of lagoon water on groundwater quality if discharged into surface drainage ways. As noted in Section 2.3.4, the planning for the lagoon system is still at a conceptual level, appropriate for the level of engineering detail required for Development Plan amendment applications. Detailed engineering for the lagoon system will be conducted at the appropriate stage in the development process.

Notwithstanding the lack of detail on the specifics of the lagoon system, it is likely that from time to time, perhaps on a regular basis, the lagoon will be wholly or partially drained. At the present time, it is believed that thorough circulation of the water within the lagoon, possibly enhanced with the use of waterfalls, floating jets, etc, will eliminate the need for chemical additives to control algae

growth. The major impact of the lagoon water will therefore be its increased salinity (due to evaporative losses) over that the Pump 10 source water.

An important consideration in determining the magnitude of this potential impact is the fact that all agricultural return water has salinities in excess of its original source - due to similar evaporative losses and the ability of plants to utilize only the fresh water component. Agricultural return water is often double the chloride content of source water. When viewed in this light, disposal of lagoon water would have no appreciable impact on groundwater resources provided chloride content was not permitted to exceed some as yet in determined maximum amount (perhaps comparable to that of agricultural return water).

Other considerations involve the method and location of the disposal of the lagoon water. The preferred location would be over the limestone caprock where water of similar quality is perched. One alternative now being investigated is the use of the existing Pump 10 transmission line (used to provide non-potable water to the site) as a drain. The Pump 10 wells are located over the caprock in an area which would be an appropriate discharge site with little or no potential for the slightly saltier return water to leach into the underlying basal lens. Other alternatives will be abalyzed as more engineering data on the lagoon systems becomes available.

Concern has been raised about potentially adverse impacts related to Palailai Landfill leachate - both the impact of the leachate on the proposed action and conversely, the impact of the proposed action on the leachate plume.

Currently, leachate from the landfill migrates down to the underlying groundwater in a southwesterly direction and eventually seeps out into the ocean. Specific studies of the leachate plume have not been conducted but it can be assumed that the plume follows the general movement of the underlying groundwater.

It is interesting to note that the quality of the underlying groundwater (as measured at the Pump 10 wells, approximately 1 mile west of the project site) is gradually improving with chloride levels dropping from around 800 ppm to 500 ppm. This is generally attributed to gradually declining pumpage rates at the Pump 10 wells.

Impact of Leachate on the Proposed Action. Leachate from the landfill migrates downward to the underlying groundwater. The only way it could affect the project site is through direct pumpage of leachate contaminated groundwater. As noted elsewhere, the non-potable water needs of the site will be serviced from the Pump 10 wells, operated by Oahu Sugar Company (OSCO). Potable water for the site will be provided by the Board of Water Supply via a municipal system. Neither source is known to be contaminated with leachate from the Palailai Landfill.

Impact of the Site on the Leachate Plume. Pumpage rates from the Pump 10 wells have been declining over the past few years. The source which previously yielded 14 mgd is now only pumping 5 mgd. As agricultural operations in the area continue to utilize more efficient irrigation techniques and consolidate their operations, pumpage rates will continue to decline. The proposed action will require approximately 4% of the current 5 mgd yield. The fact that the Pump 10

source is pumping well below historical levels should tend to reduce the rate of leachate migration from the Landfill to the underlying groundwater. Thus, it appears that the levels of leachate entering the groundwater are decreasing, with or without the proposed action.

4.6.3.2 Surface Drainage

Urban development of an agricultural area generally increases storm runoff. However, for this project, that increase can be considered insignificant since about two-thirds of the 106-acre site is currently planned to either remain in its present condition, be graded and landscaped, or be used as a nursery site. Another several acres will be used for water ponds and lagoons. Less than a third of the area will be covered by service areas, walkways, buildings, driveways and parking.

Additionally, the increased runoff, if any, will be ponded within the on-site waterways for gradual discharge after storm flows. Storm runoff exiting the site will be limited to the capacity of the existing culverts located under the H-1 Freeway.

During grading and construction, the on-site pond excavations will be used as desilting areas in the event of storms during that period.

The runoff quantities and ditch/culvert hydraulics will be prepared and submitted to the appropriate City/State agencies for approval when detailed grading and construction plans are undertaken.

4.7 FLORA AND FAUNA

A Biological Survey of the petition area (Char and Associates, October 1986) was conducted on October 15, 1986. Nearly all of the project site consists of abandoned sugar cane fields. The full Biological Survey is attached as Appendix C and is summarized below.

4.7.1 Flora

4.7.1.1 Description of Vegetation Types

Two vegetation types were recognized on the project site; scrubland and kiawe woodland. The following is a brief description of each.

(1) Scrubland Weedy species have invaded the abandoned sugar cane fields and form an open, low prairie structure. A few, scattered, small clumps of sugar cane (Saccharum officinarum) can still be found. Within the scrubland vegetation, there is a pattern of different plant associations relative to certain topographic and man-made features. Usually, the scrubland is composed of a mixture of small shrubs, 1 to 3 feet high, and various grass species. The most abundant shrubs are 'uhaloa (Waltheria indica var. americana), 'ilima (Sida fallax), and virgate mimosa (Desmanthus virgatus). Andropogon pertusus and buffelgrass (Cenchrus ciliaris) are the most frequently encountered grasses.

(2) *Kiawe Woodland* The kiawe woodland (Prosopis pallida) is found on the mauka portion of the project area, north of the Board of Water Supply service road and on the lower slopes of Pu'u Palailai. The kiawe woodland is composed of 18 to 25 feet tall kiawe trees which form an open forest (30 to 40% tree cover). In some places, koa-haole (Leucaena leucocephala) form a subcanopy layer, 12 to 15 feet tall. However, many of the koa-haole shrubs are in poor condition due to heavy infestation by a recently introduced psyllid insect (Heteropsylla poss. incisa). Buffelgrass (Cenchrus ciliaris) forms a more or less dense groundcover throughout much of this vegetation type. Shrubs and weedy annuals such as wild basil (Ocimum gratissimum), lions-ear (Leonotis nepetaefolia), West Indian beggar's tick (Bidens cynapifolia), and false mallow (Malvastrum coromandelianum) are occasionally encountered. Locally common are patches of Natal redtop (Rhynchelytrum repens) and green panicgrass (Panicum maximum var. trichoglume).

4.7.1.2 Rare, Threatened or Endangered Flora Species

No officially listed, proposed or candidate threatened or endangered species (U.S. Fish and Wildlife Service, 1980) were found during the course of the survey. One plant of the native Hawaiian cotton (Gossypium sandvicense) was found in a rocky area along the northern boundary of the project area. It was formerly considered endangered (Fosberg and Herbst 1975, U.S. Fish and Wildlife Service 1976) but the species is no longer being considered for listing as endangered or threatened by the U.S. Fish and Wildlife Service (1980) as it is more abundant than was previously believed and/or is not subject to any identifiable threat.

4.7.2 Fauna

Due to the highly disturbed nature of the vegetation on the site, as well as the dry climate on this part of Oahu, the birdlife is very scarce. Only seven species of birds were recorded during the field survey; Zebra Dove, Spotted Dove, Cardinal, House Finch, House Sparrow, White-tailed Tropicbird, and Japanese White-eye. Of these seven species, only the White-tailed Tropicbird is a native species.

The Pueo (Hawaiian Owl) is considered rare on Oahu. It was not observed in the project area during the field survey. The Pueo prefers open grasslands and kiawe/koa-haole scrublands such as the open areas to the east of Makakilo.

The only mammals encountered during the survey were feral dogs which appeared to be living in a small gulley in the kiawe woodland. A number of other bird and mammal species probably utilize the site but were not observed during the course of the survey.

4.7.2.1 Threatened or Endangered Faunal Species

No threatened or endangered species were observed on the project area during the course of this survey.

4.7.3 Probable Impact

The proposed project is not expected to have a significant impact on the biological communities of the study site as it is a highly disturbed area. While the proposed project will result in the loss of vegetation and some faunal habitat, it is expected to have only a minimum impact on the total island populations of the species involved.

4.8 NOISE

4.8.1 Existing Noise

The project site is located adjacent to a major highway (Farrington Highway), and within a mile of the Naval Air Station Barbers Point (NASBP); both facilities are significant generators of noise. The impact of vehicles travelling along the Highway fronting the project site and aircraft operations from the NASBP is discussed below.

4.8.1.1 Vehicular Noise

Traffic noise measurements taken along the highway frontage* ranged from a high of 68.4 dB during the AM peak hour to a low of approximately 62 to 63 dB at 10 PM. Sound levels drop off with the distance to the highway right-of-way. At 300 feet from the highway centerline, peak hour noise levels are estimated to be below 60 dB.

4.8.1.2 Aircraft Noise

Flight operations from the Naval Air Station Barbers Point are a source of noise throughout the entire Ewa Plain. The noise environment has been studied by both the U.S. Navy as part of the NASBP Air Installations Compatible Use Zone (AICUZ) program and subsequent studies sponsored by the Campbell Estate.** The Navy AICUZ study identifies a 60 L_{dn} contour which crosses the subject site in a northeast to southwest direction over the western edge of the 3-acre *punawai*, indicating that approximately approximately 15 to 20 acres of the project site experienced an average day night sound level between 60 and 65 L_{dn} during the study year, 1984 (with the balance of the site less than 60 L_{dn}). A subsequent study by the Campbell Estate shows the 60 L_{dn} contour crossing the Palailai Interchange, south of the project site, indicating that the entire project site experiences sound levels of less than 60 L_{dn}.

4.8.2 Probable Impact

The development of the park will generate short and long-term noise impacts. The park itself will be impacted by the existing noise environment.

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* 100 feet off of Highway centerline

** On November 28, 1986, the Estate filed lawsuits against the U.S. Navy alleging specific methodolical errors in the NASBP AICUZ study grossly overstated the impact of flight operations associated with the NASBP.

4.8.2.1 Short Term Impacts

Short-term noise impacts are generally related to the initial construction period. The primary source of noise during any construction project can be broken down by activity: 1) clearing, grubbing, grading and other site preparations, 2) excavation and embankment, 3) placing foundations, 4) frame erection, floors and roofs, walls and windows, and 5) finishing work and clean-up. The most obtrusive noise will occur during the first phases of construction because of the use of heavy-duty construction equipment.

4.8.2.1 Long Term Impacts

Long term impacts are associated with the operational phase of the project. Two impacts are identified: the impact of the park on the noise environment and the impact of the noise environment of the park.

(1) Impact of the Park on the noise environment

Direct and indirect impacts have been identified: direct impacts relate to noise generated by park operations; indirect impacts relate to vehicular traffic generated by the attraction.

Direct. The design concept of the proposed entertainment attraction includes a number of interactive displays, special effects theaters, representative architecture, cultural exhibits, etc. These uses are, by their nature, discreet, and will not be significant contributors to the noise environment. An open-air pavilion is currently planned near the center of the park. Outdoor presentations will be made throughout the operating day and will include cultural dance exhibitions, "big-name" entertainers, and a place for local entertainers and cultural organizations to showcase their talents.

The consulting accoustical engineer has evaluated potential noise impacts of park activities on the neighboring residential communities of Honokai Hale/Nanakai Gardens and Makakilo. The analysis indicates that the risk of adverse noise impacts on these communities is minimal. Realizing the very subjective nature of noise impacts, the applicant will monitor the situation closely.

Indirect. The project is expected to generate vehicular traffic which will contribute to the existing noise environment. The amount of traffic attributable to the park relative to existing traffic volumes and those projected to be generated by other proposed developments in the area (Ko Olina Resort and the Kapolei Town Center) is insignificant and therefore, the contribution is expected to be negligible.

(2) Impact of the noise environment of the park.

As noted above, the project site is located adjacent to a major highway and is therefore subject to noise generated by vehicular movements. In order to recreate authentic physical and cultural themes within the park area, extraneous off-site noise (such as that generated from the adjacent highway) will have to be attenuated through the use of berming and landscaping along the Farrington Highway road frontage.

4.8.3 Mitigating Measures

Extensive landscaping and berming of the H-1 Freeway frontage will attenuate noise generated by traffic moving along the Farrington Highway and reduce roadway noise within the park complex.

All development will be designed and constructed to comply with the provisions of Title 11, Administrative Rules Chapter 43, Community Noise Control for Oahu. Noise from stationary equipment such as air conditioning/ventilation units and exhaust units will be attenuated to meet the allowable noise levels.

Activities associated with the construction phase of development will also comply with the provisions of Chapter 43. Traffic noise from heavy vehicles travelling to and from the construction site will be minimized near existing residential areas and will comply with the provisions of Title 11, Administrative Rules Chapter 42, Vehicular Noise Control for Oahu.

4.9 AIR QUALITY

4.9.1 Existing Conditions

Existing air quality in the project area appears to be in compliance with federal and state standards. Concentrations of the automotive-related pollutants (CO, NO_2 and O_x) are believed to be relatively low and within standards due to the current low level of source activity in the immediate area.

4.9.2 Probable Impact

The principal source of short-term air quality impact will be construction activity. Construction vehicle activity will increase automotive pollutant concentrations along the H-1 Freeway as well as on roadways in the vicinity of the project area itself. Site preparation and earth moving will create particulate emissions as will building and on-site road construction.

The principal long-term air quality impact associated with the application request will be automotive-related pollutants. By its inherent ability to generate and attract motor vehicle traffic it constitutes an "indirect source" of air pollution. Air quality impacts can be expected to occur in the vicinity of the Makakilo Interchange and all other critical intersections, on-ramps, and roadway segments identified in the traffic analysis (Appendix E) as approaching or exceeding capacity.

A microscale screening analysis was performed for the two Farrington Highway intersections nearest to the project site (Kalaeloa Boulevard and Makakilo Drive) to determine the magnitude of the potential impact. The analysis was conducted using both 1985 (present) and 1995 (projected) traffic volumes as indicated in the Traffic Impact Report prepared for the proposed action (Appendix E). Results from the analysis indicate that the 1-hour concentration estimates at the two intersections are in compliance with federal and state 1-hour standards under both

current and projected traffic conditions. Compliance with the federal and state 8-hour standards can also be inferred from these 1-hour concentration estimates.

The development of the proposed entertainment attraction will also result in off-site impacts as a result of: generation of electricity to meet project demand (combustion of fuels resulting in the emission of additional pollutants); and, incineration of project-generated solid waste (should solid wastes be disposed of via incineration or the proposed H-POWER facility). However, the relative increases attributable to this project will be very small.

4.9.3 Mitigative Measures

Short-term construction-related impacts are principally in the form of fugitive dust emissions. Department of Health regulations stipulate control measures that are to be employed to reduce this type of emission. Primary control consists of wetting down loose soil areas, good housekeeping on the job site and the prompt pavement or landscaping of bare soil areas.

Long-term air quality impacts are related to vehicular emissions. The intersection improvements (ie., widening and addition of lanes) recommended in the traffic impact report, required to provide adequate levels of service to automobile users, will be sufficient to mitigate potential air quality impacts.

4.10 SCENIC AND VISUAL RESOURCES

4.10.1 Existing Conditions

The predominant view of the site is from the H-1 Freeway fronting the project area. The majority of the site is comprised of abandoned sugar cane fields which support a low scrubland vegetation composed of a mixture of grasses and small shrub species. The large (3-acre) *punawai* occupies a prominent location near the eastern edge of the site, separated from the Puu Palailai cinder cone (elev. 492 feet MSL) by a segment of the old Farrington Highway. The 138-KV power lines crossing the site, the 46-KV transmission lines running along the eastern boundary of the old Farrington Highway and the Barbers Point water tanks represent major man-made visual features of the site.

4.10.2 Probable Impacts

The preliminary master plan provides for extensive landscaping and berming to enhance the aesthetic experience of the guests and to provide necessary sound attenuation and visual separation between the various themed areas.

Appropriate berming and landscaping along the H-1 Freeway frontage will enhance the visual character of the freeway corridor. The roofs of a few of the on-site building structures will be visible over the landscaped berms and should not adversely impact existing visual and scenic resources.

4.11 HISTORIC AND ARCHAEOLOGICAL RESOURCES

A preliminary archaeological reconnaissance survey of the project site was conducted during November 1986 (Paul H. Rosendahl, Inc., November 1986). The survey is attached as Appendix D and is summarized below.

4.11.1 Existing Conditions

No archaeological remains are known to exist within the project area. Most of the project area has been extensively modified in recent times, primarily by sugarcane cultivation. A small relatively unmodified area is situated in the north-central portion of the project area between the old Farrington Highway and the irrigation ditch running along the mauka boundary of the site. No previously recorded archaeological sites are present within the project area.

One site, the irrigation ditch discussed above, was identified within the project area. The ditch, constructed of concrete and stone, follows the 200 foot contour across the southwestern slope of Puu Palailai. A tentative evaluation of the archaeological significance of the site indicates that it is of minimal research, interpretive, or cultural significance primarily because it appears to be less than 50 years old. No further archaeological work was recommended by the archaeological consultant.

4.11.2 Probable Impacts

A tentative evaluation of the archaeological significance of the one site identified within the project area indicates that it is of minimal research, cultural, or interpretive significance.

In the event that any previously unidentified sites or remains are encountered during construction and site work phases, work in the immediate area will cease until the State Historic Preservation Officer has been notified and is able to assess the impact and make further recommendations for mitigative actions, if warranted.

CHAPTER V

ASSESSMENT OF EXISTING CONDITIONS AND
PROBABLE IMPACTS: SOCIO-ECONOMIC ENVIRONMENT

This Chapter describes the existing socio-economic environment and probable changes due to the implementation of the proposed entertainment attraction. Major sources of information for this Chapter are drawn from the 1980 Census of Population and Housing, and public reports such as EISs, and agency reports.

5.1 POPULATION

5.1.1 Existing Conditions

The Ewa Development Plan area's population of 35,585 in 1980 constituted 4.7 percent of the island's total population. Projections prepared by the Department of General Planning (DGP, 1985) indicate a slight drop in the islandwide share of population for the Ewa DP area in 1984: population of 36,000 representing 4.5 percent of islandwide total.

Existing Ewa population centers include: (1) Ewa Beach (1985 population: 14,500), which is situated between Pearl Harbor and the Barbers Point Naval Air Station to the south of the project site; (2) Barbers Point Naval Air Station located approximately one mile south of the project area (1985 population: 2,924); (3) Honokai Hale/Nanakai Gardens, a stable residential community located approximately one half mile west of the project site (1985 population: 1,989); (4) Makakilo, a growing residential community located on the lower slopes of the Waianae Range to the north and east of the project site (1985 population: 8,992); and (5) The Ewa Villages located to the east of the project site (1985 population: 3,000).

5.1.1.1 Demographic Characteristics

An analysis of selected demographic characteristics of the Ewa population compared to the island of Oahu (Table 5) indicates that the Ewa population is a relatively younger, possibly more transient group with higher high school graduates and lower college level graduates. The ethnic composition of the community differs from that of the general population with more Caucasians, Filipinos and Hawaiians and fewer Japanese and Chinese.

Table 5: SELECTED DEMOGRAPHIC CHARACTERISTICS (1980)

	City and County of Honolulu	Ewa D.P. Area (C.T. 83-86.02)
Total Population	762,545	36,234
Ethnicity	(percent)	(percent)
Caucasian	41.2	44.5
Japanese	24.9	8.8
Chinese	6.9	2.0
Filipino	12.6	24.8
Hawaiian	10.5	12.4
Other	5.5	7.5
Age		
Less than 5 yr.	7.9	10.7
5 - 17 yr.	20.2	27.8
18 - 64 yr.	64.6	58.6
65 or more yr.	7.3	3.0
Median age	28.1 yr.	N/A
Place of Birth		
Hawaii	55.1	49.6
Other U.S. ***	30.1	36.0
Foreign Country	14.8	14.5
Residence 5 Yrs. Previous** (people aged 5+ yrs.)		
Same house	48.2	44.0
Same island	25.5	23.6
Different island	1.3	0.8
Different state	18.4	26.1
Different country	6.6	6.1
Education (people aged 25+ yrs.)		
0-8 years only	14.4	14.3
High school only	35.5	43.0
College, 4+ yrs.	21.7	12.4

Notes:
- * In this and immediately following tables, the small Central Oahu town of Kunia (1980 pop. 829) is counted with Ewa because it falls in one of the Ewa census tracts.
- ** Except for Total Population and Age, all figures based on 15% sample.
- *** Including persons born in U.S. territories, and abroad or at sea to American parents.

Source: Community Resources, Inc. 1986

5.1.2 Ewa Population Projections

The Department of General Planning projects that "Ewa will experience the greatest growth in population, both in absolute number and percent share. Its population will more than double to 83,100 by the year 2005, an increase of 47,100 people. This growth will also mean a near doubling of Ewa's share of the island's population from 4.5 percent to 8.7 percent..." (DGP,1985:39).

5.1.3 Probable Impacts

Direct and indirect population impacts have been identified. Both impacts result from the redesignation of the subject site from residential uses to commercial uses. Residential land uses directly support population growth, thus their withdrawal will have a direct impact on population growth in the Ewa DP area. Certain types of commercial land uses, such as resort development, can increase defacto population levels by increasing the demand for such activities by the out-of-state visitors. Because of the scale of the proposed attraction relative to the existing visitor plant on Oahu, it is not expected that the development will significantly influence the annual visitor count. However, because it will provide a full day's activity, it could increase the visitors' length of stay on Oahu. Commercial land uses indirectly impact residential population growth to the extent that the commercial uses create new jobs, which in turn support new households. Each impact is described below.

5.1.3.1 Direct Impacts

The proposed project will require the redesignation of the site from the present Low- and Medium-Density Apartment and Residential classifications to Commercial resulting in a loss of approximately 1,250 potential residential units. These dwelling units would house approximately 2,500 future residents (Helber, Hastert, Van Horn and Kimura, Planners, 1985).

However, since Campbell Estate representatives have indicated their intent to request redesignation of a similar amount of commercial land to residential land in the adjacent Kapolei Town Center, the net land use pattern, housing and population implications to the Ewa Development Plan would remain unchanged.

5.1.3.2 Indirect Impacts

The population impact of construction period employment is expected to be minimal. The industry is well established on the island and experience has shown that the vast majority of construction employment is drawn from the available labor pool. Moreover, the construction period is short-term, lasting approximately two-years.

Project-related employment will support population growth in the Ewa area, the island of Oahu and the State of Hawaii. The magnitude of this growth can be estimated by determining the relevant labor force participation (LFP) rate (by inference, the relationship between employment and population) and applying this figure to the number of jobs created by the development. LFP rates for Oahu and the State in 1980 ranged from 0.51 to 0.52, respectively. Using the Oahu rate (because the majority of population growth will be on Oahu), the population growth associated with direct employment at the park (up to 1,200 positions) would be approximately 2,350 persons (1,200/0.51) (See Chapter 5.2 below). The indirect and induced employment component of population growth is estimated at up to 1,460 persons (744/0.51). The total employment-induced population impact is therefore estimated at approximately 3,812 persons. Although the direct employment-induced population is expected to begin within the next 4-5 years, the indirect and induced components will occur over a longer and much less well defined period.

5.2 ECONOMY/EMPLOYMENT

The modern economic history of Ewa dates from September 22, 1879 when the first artesian well was drilled by James Campbell on his Honouliuli ranch. Until then the Ewa plain was relatively dry, barren land of minimal productivity.

Since 1879, Ewa has participated in the agricultural growth of Hawaii as a major sugar cane producing area. Like other sugar plantations, the Ewa area absorbed the many Filipino, Japanese, Korean, Spanish and Portuguese immigrants who came to Hawaii. For many years the Ewa Plantation Company (now the Oahu Sugar Company) has been a major economic enterprise and one of the region's major employers. However, following the general trend throughout the State, the Ewa economy has significantly diversified its economic base from one dependant on plantation agriculture.

5.2.1 Existing Conditions

A comparison of labor force characteristics of the Ewa D.P. area with that of the the island as a whole are indicative of several trends (Table 6). A relatively high proportion of the labor force is employed in armed forces activities. Pearl Harbor and Barbers Point have become major employers in the region.

Table 6: LABOR FORCE SIZE AND SELECTED CHARACTERISTICS (1980)

	CITY AND COUNTY OF HONOLULU	EWA D.P. AREA (C.T. 83-86.02)
POTENTIAL LABOR FORCE (aged 16+/-)	574,903	23,862
not in labor force	50.8%	31.9%
armed forces	10.1	18.5
civil. labor force	89.1	49.5
CIVILIAN LABOR FORCE	339,863	11,821
unemployed	4.6%	8.0%
TOTAL EMPLOYED CIVIL LABOR FORCE	324,113	10,873
OCCUPATION		
service	17.6%	19.5%
manager/professional	24.7	14.2
technical, sales & admin.	33.8	31.0
farm/fish/forest	1.8	3.9
precision, craft, repair	11.3	15.5
operators, fabricators, laborers	10.9	16.3
INDUSTRY (selected)		
agric., forest, fish, mining	1.7%	6.1%
construction	6.6	7.5
manufacturing	7.7	12.0
retail trade	20.5	20.1
financial, insurance, real estate	8.1	5.2
personal, entertain. & rec. svcs.	8.1	5.9
health, educ., & professional	18.5	12.7
public adminis.	10.9	13.4
COMMUTE TO WORK		
45 minutes or more	12.0	22.6
mean travel (min.)	22.6 m.	25.8 m.

Notes: All figures based on 15% sample; hence, numbers represent estimates

Sources: Community Resources, Inc., 1986

The 1980 unemployment levels in the Ewa area were almost double that of the general population (8.0% vs. 4.6%). (By comparison, the October 1986 unemployment rate on Oahu was 3.9 percent). The occupational profiles of the Ewa labor force indicate a larger proportion of blue collar occupations (service, farm, precision, craft, repair, laborers, etc.) than the islandwide population. Conversly, white collar occupations (manager/professional, technical, sales and administrative) were underrepresented. This situation is also reflected in the industry statistics where agricultural jobs within the Ewa area are proportionately three times as high as in the general population. A significant characteristic of the Ewa population is evidenced by the fact that almost twice as many Ewa residents endure a commute time in excess of 45 minutes as that of the rest of the island.

5.2.2 Future Conditions

5.2.2.1 Construction Period Employment.

To derive estimated construction period employment, it was necessary to use the estimated construction cost as a basic starting point. The cost of the project is estimated at $50 million for both on-site and off-site infrastructure improvements, including costs related to traffic, drainage, water, wastewater, roads, electricity, and telephone. It is assumed that roughly half of the total costs represent labor costs ($25 million). An annual construction year of 2080 hours per person was assumed and applied to the prevailing industry wage rate of $35 an hour for labor cost (including wages, fringe benefits, overhead and profit) to arrive at an annual construction labor cost of $72,800 per worker per year. This translates into about 340 person-years or, given the two-year construction time-frame, approximately 170 jobs per year.

This estimate represents direct on-site construction jobs. The majority of these jobs will be in the building trades, with the remainder administrative, management, and professional positions. The current statewide construction industry employment multiplier from the State input-output econometric model is 2.5. For every FTE job in the construction industry, another 0.5 indirect jobs and 1.0 induced jobs are created, for a total of 2.5 jobs. Thus about 255 FTE jobs per year would be indirectly created , in addition to the 170 direct jobs, for the estimated two-year construction period. It should be noted that only a fraction of the indirect and induced component of total construction jobs will be absorbed by the Ewa economy.

5.2.2.2 Direct Operational Period Employment

During its operational phase, the proposed entertainment attraction will employ up to 1,200 persons to operate and maintain the facility. The actual number will be defined once the ultimate size and configuration of the attraction are determined based on the final feasibility studies, design criteria and investment limitations.

The major job category in the park operation is projected to be in the food and beverage area with over 30 percent of the positions (Table 7). Park operations is the next largest job category with approximately 28 percent of the positions. This category includes the personnel responsible for the day-to-day operations of the park.

Table 7: PROJECTED PERCENT OF EMPLOYMENT BY JOB CATEGORY

Job Category	Estimated Percent
Executive/Managerial	3.0
Administrative	5.5
Park Operations	28.0
Retail Sales	12.0
Food & Beverage	31.0
Maintenance	8.5
Janitorial/Grounds	12.0
Totals	100.0

Source: Amfac Hawaii, Inc. 1986

5.2.2.3 Indirect and Induced Employment

The indirect and induced components of direct operational employment are determined by applying a multiplier to the number of direct jobs estimated above. The Department of Planning and Economic Development (DPED) has derived employment multipliers for visitor-related* industries (DPED, 1985). Although no specific multiplier was derived for the proposed entertainment attraction, DPED did determine multipliers for Eating and Drinking Places (1.72) and Other Retail Activities (1.53). Using the average of these multipliers (1.62), and 744 indirect and induced jobs will be created. It should be noted that this represents a statewide increase in employment attributable to the proposed project. Only a portion of these jobs can be expected to be absorbed within the Ewa area.

Table 8: ESTIMATED MAXIMUM EMPLOYMENT IMPACTS

Development Phase	Direct	Indirect/ Induced	Total
Construction Period	170	255	425#
Operational Period	1,200	744	1,944

Represents annual jobs, two-year construction period.

Source: Helber, Hastert, Van Horn and Kimura, Planners. 1986

* Out-of-State visitors represent approximatly 92 percent of the projected annual attendance, the balance representing Oahu and Neighbor Island visitors.

The project will generate significant public revenues in the form of increased sales taxes, increased income taxes, and increased real property taxes.

The project is centrally located relative to the major destination resorts on Oahu--the major markets for the proposed development. The project site is located adjacent to the proposed Ko Olina (West Beach) Resort area, some 15 miles from the Makaha Resort, approximately 22 miles from Waikiki, 22 miles from the proposed Mokuleia Resort area, and approximately 34 miles from the Kuilima Resort area.

5.3 HOUSING

The development of the proposed entertainment attraction will indirectly increase the demand for housing in the Ewa area and elswhere on Oahu due to the creation of new jobs. This section describes the existing and projected housing situation in Ewa and the probable impact of the project on the housing supply

5.3.1 Existing Conditions

The Department of General Planning has estimated that in 1984 the Ewa Development Plan area contained a total of 9,300 housing units, about 3.5 percent of the total Oahu housing stock (DGP, 1985).

Existing residential communities in the Ewa area consist of: (1) Makakilo, located on the lower foothills of the Waianae Range to the north and east of the project site (1985 housing of 2,700 units); (2) Ewa Beach, an older residential community located southeast of the project site (1985 housing of 3,465 units); (3) Ewa Villages, existing plantation era villages to the east of the site (1985 housing, 800 units); (4) Honokai Hale/Nanakai Gardens, an older residential community lying to the west of the site (1985 housing of 500 units); and (5) Barbers Point Naval Air Station, directly south with military housing for enlisted personnel (1985 housing of 850 units).

5.3.1.1 Proposed Residential Projects

A number of residential housing projects are planned for Ewa over the next 5-20 year period. Ewa Marina, a master planned water-oriented development will commence construction in 1988 and is expected to take 15 years to complete 4,800 housing units. Pearl Meadows (Ewa Plantation) is a planned residential area adjacent to the older Ewa Villages community. Construction of an estimated 5,190 housing units is expected to start in 1988 and take 10 years to complete. The Ko Olina resort/residential community is scheduled to begin construction of 5,200 housing units in the near future. The Makakilo residential community will be adding an additional 2,700 housing units over the next 10-15 years (DGP, 1985).

5.3.2 Probable Impacts

To determine the impact of employment on the housing stock, the number of workers per household was first computed. The computations have only considered the impact of direct employment as it is difficult to predict the location of the housing impact associated with the indirect and induced employment components (As noted above, these impacts would be distributed over the island and, in the case of induced employment, around the State). The U.S. Bureau of the Census reported a total of 294,052 households in the State in 1979, and a labor force of 494,233 persons, a ratio of 1.68 workers per household. Thus, the possible 1,200 positions could result in up to 714 households (1,200/1.68). The indirect and induced employment component would support an additional 443 households (744/1.68).

It is anticipated that nearly all of the projected direct jobs will be filled by established Oahu residents, many of which will be living in the Ewa, Waianae or Central Oahu regions. However, it is also expected that some residents from other areas may wish to move closer to their place of employment, thus creating a market for the planned housing projects near the park (it should be noted that these employees will be vacating housing that would then become part of the islandwide supply of available housing).

CHAPTER VI

ASSESSMENT OF EXISTING CONDITIONS AND
PROBABLE IMPACTS: PUBLIC FACILITIES AND SERVICES

This chapter describes the existing conditions of public facilities, utilities and services in the proposed development's service area and the relationship of these systems to the proposed development. Public facilities are those systems which are provided, staffed, and maintained by the government to serve the public health, safety and welfare. They include roadways, schools, fire and police protection, and refuse disposal. Public utilities are distributed services, such as electricity, water, wastewater, and communications, that are provided either by a public agency directly or by a publicly regulated utility. Project related impacts are discussed primarily in terms of anticipated requirements generated by the development. Mitigation measures are preliminary proposals for how that demand may be satisfied.

Information for this section is principally derived from technical reports prepared for the project: Preliminary Engineering Analyses prepared by Community Planning, Inc., December 1986 (Appendix B); Traffic Impact Report prepared by Parsons Brinckerhoff Quade and Douglas, Inc., December 1986 (Appendix E); and, information provided by Leisure and Recreation Concepts, Inc. (LARC).

6.1 DESIGN CRITERIA

Design criteria establish the formulae for quantifying the facilities necessary to service the anticipated levels of attendance at the proposed attraction. The criteria convert attendance figures into facility requirements and provide a basis for evaluating probable environmental impacts to public facilities and services. While relating to total annual attendance, the design criteria are more a function of the seasonal distribution of this attendance and its daily average and "peaking" characteristics.

The monthly distribution, daily average and peaking characteristics are developed from the projected annual attendance and the characteristics of the resident and visitor populations. These parameters determine the probable attendance levels to be serviced during an average day's operation. The "design day" demand parameter (average peak day) analyzes the total number of persons attending the project during the design or peak day (estimated to occur approximately 10 to 15 times per year). Design day figures are helpful for impact analysis when used in conjunction with average day figures as they provide a means to quantitatively bracket the magnitude of potential impacts.

6.2 TRAFFIC

A traffic impact report has been prepared for the project (Parsons Brinckerhoff Quade & Douglas, Inc., December 1986). The report is reprinted as Appendix E and is summarized below.

6.2.1 Existing Facilities

The project site is located adjacent to the four-lane Farrington Highway, which begins at the west end of the H-1 Freeway at Palailai Interchange (Figure 1, Appendix E). The majority of the site is bounded by the old two-lane Farrington Highway which is currently unused and barricaded at its ends.

The four-lane relocated Farrington Highway connects directly into the H-1 Freeway and forms the primary land transportation link between the Waianae Coast and the remainder of Oahu. The old two-lane Farrington Highway continues in service towards the east (Honolulu) from Palailai Interchange and becomes wider through Waipahu. Kalaeloa Boulevard, which provides access to the James Campbell Industrial Park (JCIP), terminates at Palailai Interchange, intersecting with the two-lane Farrington Highway.

Access to the east portion of the site is across the end of Kalaeloa Boulevard. Traffic on Farrington Highway from Waianae would use the Campbell Industrial Park off-ramp to Kalaeloa Boulevard and turn left onto Kalaeloa Boulevard. Traffic on H-1 from Honolulu would use the existing loop off-ramp, which serves traffic to Campbell Industrial Park, and proceed back onto Farrington Highway, turning left into the project site at the Kalaeloa Boulevard intersection. Exiting traffic toward Waianae would turn right from the site at the Farrington Highway and Kalaeloa Boulevard intersection; traffic desiring to travel in the Honolulu direction would turn left out of the site at this intersection, cross H-1 on the existing Farrington Highway overpass, turn left at Makakilo Drive, and enter H-1 at an existing ramp in the Makakilo Interchange.

Existing traffic volumes in the area are relatively low, with good levels of service and little or no delays on the local roadways. Peak hour volumes on Farrington Highway and H-1 are approximately 40% of capacity. Stop and yield signs control conflicting movements at the Farrington Highway and Kalaeloa Boulevard intersection, and a two-phase, traffic-actuated signal controls the intersection of Farrington Highway and Makakilo Drive (Fort Barrette Road), approximately one mile to the east.

6.2.2 Probable Impacts

The traffic impact report evaluated future conditions with and without the proposed action for the year 1995. Included in the analyses was the partial development of the proposed Kapolei Town Center (to the southeast of the project site), now being proposed by the Estate of James Campbell. Also assumed were the partial development of the Ko Olina Resort, expansion of the JCIP, and increases of population in existing residential areas such as Makakilo and Waianae. The analyses also assumed the the completion of the current State Department of

CORRECTION

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

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Existing traffic volumes in the area are relatively low, with good levels of service and little or no delays on the local roadways. Peak hour volumes on Farrington Highway and H-1 are approximately 40% of capacity. Stop and yield signs control conflicting movements at the Farrington Highway and Kalaeloa Boulevard intersection, and a two-phase, traffic-actuated signal controls the intersection of Farrington Highway and Makakilo Drive (Fort Barrette Road), approximately one mile to the east.

6.2.2 Probable Impacts

The traffic impact report evaluated future conditions with and without the proposed action for the year 1995. Included in the analyses was the partial development of the proposed Kapolei Town Center (to the southeast of the project site), now being proposed by the Estate of James Campbell. Also assumed were the partial development of the Ko Olina Resort, expansion of the JCIP, and increases of population in existing residential areas such as Makakilo and Waianae. The analyses also assumed the the completion of the current State Department of

Transportation construction project adding one lane in each direction along H-1 between the Palailai and Kunia Interchanges.

Traffic conditions were analyzed at the Farrington Highway intersections with Kalaeloa Boulevard and with Makakilo Drive as well as the on-ramp to H-1 at Makakilo Interchange. Findings are summarized below.

Makakilo Interchange. By the year 1995, planned development in the area will increase current average PM peak-hour freeway traffic volumes by nearly 90 percent. Ramp traffic is projected to increase by 140 percent. The increase in ramp traffic directly attributed to the proposed action is estimated to be 21 percent of existing ramp traffic. In the Weekend Peak Hour, ramp level of service is projected to be "C" or average conditions (level of service is expected to drop from the current "B" to "C" with or without the proposed action), with ramp volumes increasing 190 percent, of which 33 percent is attributable to the proposed project. During peak hours, the existing ramp configuration would have adequate capacity to serve traffic demands.

Farrington Highway at Makakilo Drive. Traffic increases due to development of the adjacent town center will require that the Farrington Highway approaches to its intersection with Makakilo Drive and Fort Barrette Road be widened. The high turning movements expected from the town center mauka onto Makakilo Drive and from Makakilo Drive toward the new residential areas will require double left turn lanes. In addition, separate right turn lanes were assumed for movements to and from Farrington Highway to the east of the intersection. Traffic desiring to cross the intersection would be provided with two lanes at each approach. The signalized intersection analysis of this layout showed near-capacity conditions with or without the traffic generated by the proposed entertainment attraction in the PM Peak Hour. Under-capacity conditions would occur during the Weekend Peak Hour.

Farrington Highway at Kalaeloa Boulevard. The Conceptual Master Plan shows access into the project along the old two-lane section of Farrington Highway, opposite the end of Kalaeloa Boulevard. Analysis of this unsignalized intersection indicates very long delays for traffic turning left from Kalaeloa Boulevard (JCIP) onto the on-ramp toward Waianae in both the PM and Weekend peak hours. Because of this projected condition, the major access has been relocated approximately 500 feet east along Farrington Highway. The projected traffic conditions of this new intersection are described below.

Farrington Highway at Park Entrance. The relocation of the project's access connection to Farrington Highway can alleviate the very long delays projected for left turns from Campbell Industrial Park toward Waianae and for left turns exiting from the project site toward Honolulu at the Farrington Highway and Kalaeloa Boulevard intersection. A relocation in the Honolulu direction would create two "T"-intersections with stems on opposite sides of Farrington Highway. (See Figure 4, Appendix E). Level of Service D would describe PM Peak Hour conditions at the Kalaeloa Boulevard intersection; the unsignalized intersection analysis indicates that major street (Farrington Highway) traffic volumes will still limit the capacity for exiting left turns at the project access. The relocation away from the immediate vicinity of the interchange off-ramp will allow the implementation of

an all-way stop at the intersection; the total volume using the intersection indicates that capacity will be adequate for an all-way stop.

6.2.3 Mitigative Measures

The analysis of the on-ramp toward Honolulu at the Makakilo Interchange and of the signalized intersection of Farrington Highway and Makakilo Drive indicate that mitigative measures at these locations are not necessary. If development of the town center proceeds on schedule, widening of the intersection would be required; Without development of the town center, the existing roadway system would adequately serve the proposed action's traffic. As noted above, the project's main access will be relocated away from the Kalaeloa Boulevard/Farrington Highway Intersection to alleviate projected traffic congestion.

In closing, it should be noted that the proposed action represents a vital step in implementing General Plan policies of establishing a Secondary Urban Center (SUC) in Ewa. The location of the project (a major employment generator) in Ewa will reduce commuter demands on the roadways in and adjacent to urban Honolulu, a major objective of the SUC growth policy.

6.3 PUBLIC TRANSPORTATION

6.3.1 Existing Conditions

Existing public transit service to the vicinity is provided by the City's TheBus system, with Route 51 between Honolulu and Makaha passing on Farrington Highway in front of the site. A bus stop is located at the Kalaeloa Boulevard intersection for westbound buses. Eastbound buses exit the four-lane Farrington Highway to a bus stop at Makakilo Drive before proceeding back onto H-1. Existing weekday bus service is four buses per hour with weekend service approximately two buses per hour.

6.3.2 Future Conditions

The City's TheBus system is an island-wide public transit system which allows flexible operations. The proposed project is not expected to rely upon the public transit system to provide transportation for its guests; projections of visitation indicate that guests will arrive in private or rental automobiles, tour vans, or charter buses. Employees, however, may travel to work on the City's public bus system.

The flexibility of the bus system allows for the assignment of additional equipment, as available, to meet new demands. Requests for additional bus service will be evaluated by the City at the appropriate time. The existing Route 51 between downtown Honolulu and Makaha passes near the project site; a westbound bus stop is located at the intersection of Farrington Highway and Kalaeloa Boulevard. The nearest eastbound bus stop is on Makakilo Drive, approximately one mile from the site. The routing of the eastbound buses could be relocated to use Farrington Highway in front of the site, and a new bus stop could be located near the vehicular entrance to the site.

6.4 WATER SUPPLY

6.4.1 Existing Conditions

The project site, although undeveloped, is traversed by a 30-inch municipal water main which conveys potable water from Waipahu and Kunia to the adjacent Board of Water Supply 4 and 5 million gallon (MG) reservoirs and a 24-inch main which transports that water westerly to Honokai Hale Subdivision and Nanakuli/Waianae (Refer to Exhibit B, Appendix B: Existing Water Facilities Plan). Both water mains are located in the old Farrington Highway right-of-way. Water in the 30-inch pipeline can service to the 115-foot elevation; whereas, the 24-inch pipeline has adequate pressure to accommodate development up to the 142-foot elevation.

In addition to having storage capacity for Honokai Hale and Nanakuli/Waianae, the 4 and 5 MG reservoirs have some capacity for future development of the Campbell Industrial Park. This capacity was developed when Campbell Estate constructed the 5 MG reservoir.

Located about 2,500 feet southwest of the project site is Oahu Sugar Company's existing Pump 10 wells and pump station which formerly were used to irrigate cane grown on the project site as well as nearby existing cane fields. Pump lines for the non-potable (brackish) water still link the on-site open pond with the water source at Pump 10.

6.4.2 Future Conditions

Within the next two to five years, West Beach Estates proposes to construct two 3 MG potable water reservoirs adjacent to and mauka of the existing 4 and 5 MG reservoirs for their resort project. A new 24-inch potable water main is also planned within old Farrington Highway to convey the water westerly to the resort (Refer to Exhibit B, Appendix B).

Also planned for West Beach are two 1.5 MG non-potable water reservoirs and four deepwell sources to be located at the approximate 200-foot elevation between Honokai Hale and the project site. Non-potable water (brackish water) will be conveyed westerly to the resort in a new 16-inch transmission main.

6.4.3 Probable Impacts

For service to the project, a dual water system is proposed. Potable water would be used for drinking, food preparation, washing within buildings and fire protection. Non-potable water (brackish water up to 800 parts per million chlorides) would be used for planned waterways, irrigation of landscaping and plant nursery, urinals and water closets.

Based on LARC's experience with entertainment facilities of this nature, the estimated potable water demand is 70,000 gallons per average day (gpd), and the non-potable demand is 232,000 gpd. The demand includes the following:

Table 9: ESTIMATED WATER DEMAND

Potable (Drinking, meal preparation and in-building washing)	70,000	gpd
Non-Potable		
Urinals and water closets	110,000	gpd
Make-up water for ponds, etc.	70,000	gpd
Wash-down water	8,000	gpd
Irrigation	44,000	gpd
Subtotal Non Potable	232,000	gpd
Total Potable and Non-Potable Water Demand	302,000	gpd

Source: Community Planning, Inc. 1986.

The project's water demand will not impact the water resources in the area. For the non-potable system, it is planned that Oahu Sugar Company will provide brackish water from within OSCO's present State water source allocation from theri Pump 10 wells. For irrigation and pond make-up water purposes, the water will be pumped into the on-site open reservoir for storage. The urinals, water closet and wash-down water, on the other hand, will be provided at the required pressure by an in-line booster pump.

For potable water, the project's demand of 70,000 gpd will be provided from existing allocations and resources of Campbell Estate or, if source is unavailable, by an arrangement with the Honolulu Board of Water Supply. A portion of the source and storage facilities for the future development of Campbell Industrial Park will be reallocated, with appropriate governmental approval, to this project. Since these existing facilities are already built and presently under Board of Water Supply operation and control, the developer, at the appropriate time, will request that Board of Water Supply provide the water at its prevailing rate for such service.

To reduce risk of interconnection and consumption of non-potable water, the applicant proposes:

1. Use of different type of pipe for the two systems.

    a. Ductile iron and copper pipe for potable water.

    b. Polyvinyl chloride (PVC) for non-potable water (interconnection between the two systems, then, would require a special adapter).

2. Special key operated mechanisms for non-potable irrigation and wash-down faucets. Appropriate signs at faucets with warnings that water is unsafe for consumption.

3. Locate urinals and water closets along the outside walls of comfort stations, buildings, etc., so that non-potable water piping will terminate at the exterior walls and not extend into the buildings.

It is further proposed that the fire protection facilities (fire hydrants, etc.) be connected to the nearby Board of Water Supply potable water system which has adequate water storage and pressure for that purpose.

Detailed construction plans for the dual water system, ponds and lagoons will be submitted for appropriate governmental review and approval after the land use amendments have been approved. Campbell Estate's Ewa Water Master Plan will be updated to include this project at that time also.

6.5 WASTEWATER TREATMENT AND DISPOSAL

6.5.1 Existing Facilities

The project site is currently undeveloped and, therefore, no sewage disposal facilities are located nearby.

As shown on the Existing Wastewater Facilities Plan (p. B-8), the nearest existing sewage disposal system is the Makakilo Interceptor which is located about 4,000 feet on the easterly side of the project site.

6.5.2 Future Conditions

A new interceptor sewer, as shown on the Existing Wastewater Facilities Plan, is planned for construction within the next two years by West Beach Estates. The interceptor is presently sized to accommodate wastewater flows from the ultimate resort project as well as with additional capacity for other tributary Campbell lands. The oversizing was made at the request and cost of Campbell Estate. The new interceptor sewer will initially connect at Barbers Point Access Road to the existing Makakilo Interceptor Sewer which presently transports the collected wastewater to the municipal Honouliuli Wastewater Treatment Plant. Upon nearing the capacity of the Makakilo Interceptor, West Beach Estates plans to construct a parallel new interceptor sewer with capacity to accommodate the ultimate resort project and similar oversizing for Campbell lands. Subsequently, the City's Department of Public Works has indicated its intention to further oversize the Barbers Point to Honouliuli Wastewater Treatment Plant Interceptor Sewer to accommodate other Campbell lands presently planned for government housing and the Ewa Second City.

The City has also indicated that the 25 MGD capacity of the Honouliuli Wastewater Treatment Plant has already been committed to present and planned projects. They also note that plans for expansion of the plant are underway with funding to probably be provided by assessment of new developments.

6.5.3 Probable Impacts

Based on LARC's experience with entertainment facilities of this nature, the estimated wastewater flow is 180,000 gpd.

For disposal, the developer proposes to construct, at its cost, a sewer main from the project site to the planned new West Beach interceptor sewer which was oversized to accommodate this and other developments on nearby Campbell lands. The alignment and size of the new sewer main will be established later when detailed construction drawings are prepared. The sewer main will be designed and constructed to City and County standards.

The developer also proposes to pay its proportionate share or assessment as established by the City for the construction of the new Barbers Point to Honouliuli Wastewater Treatment Plant interceptor sewer as well as any expansion to the treatment plant, thus allowing the wastewater generated by the project to be conveyed, treated at Honouliuli and effluent discharged off the Ewa coast.

Detailed computations of the project's wastewater requirements will be prepared and submitted for City review and approval after plans for restaurants, comfort stations, etc. are established and prior to completion of the new sewer main construction drawings.

6.6 STORM WATER DRAINAGE

6.6.1 Existing Conditions

With the exception of about 12 acres, the project site presently drains to existing culverts which cross the H-1 Freeway as indicated on the Drainage Map (Exhibit A, Appendix B). Areas 24, 25 and 26 shown on the Drainage Map also include about 85 acres located mauka of the project site extending to the Puu Palailai Ridge. On site, former agricultural operations established a system of open ditches to collect and transport storm drainage runoff to the culverts located under the H-1 Freeway. These culverts discharge the storm water into ditches located on the makai side of the freeway.

The other 12 acres, Area 28, flow towards a culvert under old Farrington Highway and eventually cross the H-1 Freeway.

Runoff from intense storms are conveyed by ditches to major drainage channels which extend through Campbell Industrial Park and discharge into the ocean.

6.6.2 Probable Impacts

Urban development of an agricultural area generally increases storm runoff. However, for this project, that increase can be considered insignificant since about two-thirds of the 106-acre site will either remain in its present condition, be graded and landscaped, or be used as a nursery site. Another several acres will be used for water ponds and lagoons. Less than 30 percent of the area will be covered by service areas, walkways, buildings, driveways and parking.

Additionally, the increased runoff, if any, will be ponded within on-site waterways for gradual discharge after storm flows. Storm runoff exiting the site will be limited by the capacity of the existing culverts located under the H-1 Freeway.

During grading and construction, the on-site pond excavations will be used as desilting areas in the event of storms during that period.

The runoff quantities and ditch/culvert hydraulics will be prepared and submitted to the appropriate City/State agencies for approval when detailed grading and construction plans are undertaken.

6.7 SOLID WASTE DISPOSAL

6.7.1 Existing Facilities

Currently, residential areas near the project site are serviced by the City and County of Honolulu, Division of Refuse. Non-residential uses and multi-family residential areas are generally serviced by private refuse collection companies. Solid wastes are disposed of either at the Palailai Landfill or the Waipahu Incinerator.

6.7.2 Proposed Facilities

The Palailai landfill operations are expected to cease within the next few years and thus is not expected to be potential disposal site. The City and County of Honolulu is exploring new means and locations to dispose of solid wastes. New landfill sites, such as Waimanalo Gulch to the west of the project site, are being considered to replace the Palailai landfill. The City is in the process of developing a waste energy recovery facility (H-POWER) within the Campbell Industrial Park, to the south of the project area, which is scheduled to become operational in 1988.

6.7.3 Probable Impacts

Solid waste generation is estimated at approximately 2,500 pounds per day. Solid wastes will be collected and disposed by private refuse contractors. The projected wastes to be generated by the project make up a very small fraction of the total projected solid waste quantities generated in Leeward Oahu. The proposed project should not require the construction of a new landfill or significantly shorten existing landfill life.

6.8 POWER AND COMMUNICATIONS

6.8.1 Existing Conditions

The project site is essentially without utilities except for existing Hawaiian Electric 138-KV overhead lines that traverse the site. The overhead electric lines and structures are within an easement granted to the Hawaiian Electric Company. Hawaiian Electric Company's generation capacity is approximately 1,300 MW, with a present peak demand of approximately 935 MW.

Hawaiian Telephone Company does not have any facilities within the project site. A remote switching station will be required to serve the project requirements. Site requirements for the switching station are approximately 5,000 square feet. A telephone trunk line from Waipahu is proposed via Farrington Highway.

Cable television facilities do not exist on the site and must be extended from trunking cable facilities located along Farrington Highway.

6.8.2 Future Development Plans

There are no anticipated improvements or public facilities that will be in the project site or that will benefit the project development.

6.8.3 Probable Impacts

6.8.3.1 Power

The existing Hawaiian Electric Company overhead 138-KV line that traverses the project site must be relocated to a new easement at or adjacent to the boundary of the development.

The projected peak demand for this project is estimated to be 11.25 MVA. Based on the anticipated loading, Hawaiian Electric Company requires that a new substation be constructed to serve the project. Hawaiian Electric Company anticipates that the ultimate substation installation will require a 12,000 square foot lot (minimum). In addition, existing 46-KV lines must be extended to the substation site.

The necessary land acquisition and equipment procurement processing will be initiated at project inception so that a substation can be in place and ready to serve the project loads as facilities there are completed. Normally, Hawaiian Electric Company will pay the cost for the 46-KV overhead line extensions to the project substation. However, if a decision is made to underground the 46-KV lines, the developer will then be charged the difference in cost between an overhead and underground installation.

The substation will step down the incoming 46-KV transmission voltage to 12-KV for distribution throughout the development. 12-KV distribution feeders from the substation will be connected to service transformers located adjacent to project facilities via switching vaults provided along the 12-KV distribution feeder routes. The switching vaults will project the distribution feeders and allow for isolation of damaged cables and redundancy to protect the development against prolonged outages resulting from the failure of any one section of the underground electrical system. Service transformers will step down the 12-KV distribution voltage to the utilization voltage required by the project facilities.

The electrical system will be an underground facility with the exception of the substation, the 46-KV and 138-KV overhead lines and structures, the switching vaults and service transformers. A network of underground ducts and handholes will be provided to facilitate cable installation. Hawaiian Electric Company will cable the underground duct system. Cables and ducts will be suitable for

underground applications and, therefore, are tolerant of both wet and dry conditions.

6.8.3.2 Communications

Telephone cross-connect pedestals will be provided by Hawaiian Telephone Company at various locations throughout the site to permit access and telephone service to the project facilities. In addition, Hawaiian Telephone Company will require a lot of approximately 5,000 square feet in area for a remote switching station.

The telephone system will be an underground facility with the only exceptions being the remote switching station and cross-connect pedestals. A network of underground ducts and handholes will facilitate the telephone cable installation. Hawaiian Telephone Company will cable the underground duct system and make all the necessary arrangements for serving each facility's telephone requirements. Cables and ducts will be suitable for underground applications and, therefore, are tolerant of both wet and dry conditions.

6.8.3.3 Summary

Electrical and communication improvements necessary to support the requirements of this project can be served from existing utility systems, with some off-site work required. In general, the off-site improvements required for the development are an ongoing activity for the utility companies and should not create an undue hardship for the respective utilities. Furthermore, this development will require that the electrical and communication utility systems be constructed and maintained according to approved utility standards.

Relocated 138-KV overhead lines will be installed similar to the existing facilities, and 46-KV overhead extensions to the project substation will be constructed following standard utility company practices. Furthermore, because Hawaiian Electric Company must maintain the lines and structures for the purposes they were intended and to their best use, the lines will have minimal negative impact on the surrounding communities.

Telephone facilities do not require major off-site work. All off-site work will be constructed and maintained following the utility company's standard practices.

On-site facilities for the utility systems will have a minimal impact on the environment. Noise, aesthetic considerations, safety hazards and loading impact will be within normally accepted guidelines.

6.9 FIRE AND SAFETY

6.9.1 Existing Facilities

Presently, fire protection services to the proposed development site are provided from the Makakilo and Nanakuli stations, which each house an engine company. The Waipahu station provides ladder service.

Police service is provided from the Pearl City station, which is staffed by 161 police officers who rotate their man-power among three different shifts. The Pearl City Station patrols three distinct districts: Waianae Coast, Waipahu/Ewa Beach and Aiea/Pearl City.

6.9.2 Proposed Facilities

All construction will be in conformance with local building codes. A perimeter road around the park will permit emergency access to the entire site.

Due to existing and future scheduled development in the Ewa, Campbell Industrial and Ko Olina areas, the Fire Department has projected the need for a new fire station within the proposed Kapolei Town Center currently being proposed by the Estate of James Campbell. Specifically, they have projected the need for an approximately 25,000 square foot site that would ultimately house one engine company and one ladder company with a total complement of 11 on-duty personnel.

Police service to the Ewa area will also be affected by the growth which the area is experiencing. The adjacent Kapolei Town Center development has provided space to accommodate a 1.7-acre police facility.

6.10 SCHOOLS

The proposed action will result in a change of land use from residential to commercial. This change indirectly reduces the number of potential students that would have been generated by the former residential land use.

The State Department of Education has noted that the proposed action will not have any adverse effect on DOE schools.

CHAPTER VII

ALTERNATIVES TO THE PROPOSED ACTION

Chapter 200 of Title 11, Environmental Impact Statement Rules (11-200-17 (f)) requires a discussion of "any known alternatives... which could feasibly attain the objectives of the action." The rules further specify that the alternatives be explored and evaluated in light of enhancement to environmental quality or the avoidance or reduction of adverse environmental effects.

The EIS rules concerning a "rigorous exploration and objective evaluation" of feasible alternatives apply equally to public and private actions. The benefits of public actions are measured by their contribution to the public good. The benefits of a private action are measured by the expectation of future returns, including a return on investment for shareholders, compensation for risk, and a reasonable profit.

As noted elsewhere in this report, the project site lies roughly within the area identified on the Oahu General Plan as the West Beach-Makakilo Secondary Urban Center. The current Development Plan designations allow for low- and medium-density apartments. Before such development could take place however, the State Land Use designation would have to be changed from the current *Agriculture District to the Urban District*. Moreover, the zoning would have to be changed from the current Ag-1 zone to the appropriate apartment zones. Thus, the current market value of the site reflects the General and Development Plan land use designations tempered by the need to seek further discretionary land uses approvals by the State Land Use Commission (State Land Use District Boundary Amendment) and the Department of Land Utilization (Change of Zone).

7.1 ALTERNATIVE SITES

The applicant evaluated a number of sites on Oahu before selecting the present site. Alternative locations were analyzed with regard to the following general criteria:

- o approximately 100-acre site
- o level to slightly sloping grounds
- o direct access to major regional transportation system
- o sufficient buffering from nearby residential communities
- o relatively quiet ambient environment
- o cost

With these criteria in mind, the Ewa area was identified as a prime location with the best site identified as the present site. The information generated by the site selection process, as well as the identification of sites examined is considered to be proprietary information by the applicant.

7.2 NO-ACTION ALTERNATIVE

The no-action alternative considered here would involve the withdrawal of the application to amend the Ewa Development Plan and provides for three alternative scenarios: postponement of action, development of residential uses pursuant to the current Development Plan designations, and alternative agricultural uses.

7.2.1 Postponement of Action

This alternative considers the postponement of action pending further study. The applicant is currently negotiating with the landowner (Campbell Estate) to purchase the site. Delays due to postponing the project could add additional carrying costs to the applicant. It should be noted that the development of the entertainment attraction is a high risk venture - time, labor, land and capital must be assembled in an orchestrated manner to produce the desired results. Undue delays or postponements could hinder the applicant's ability to turn the proposed action into an operating reality.

Added carrying costs associated with postponement need to be analyzed in relation to the added benefit/detriment to the applicant resulting from further study in order to evaluate the feasibility of this alternative. Added benefits from project postponement are ostensibly limited to increased public awareness, a public good whose value is difficult to quantify. Increased detriment incurred by postponing action include added financial risk and loss of project momentum (and the related possibility that another developer will utilize the proprietary information disclosed in this report and other public filings related to the proposed action to undercut the applicant's initiative). In summary, postponement of the action will result in undue costs to the applicant which may well make the proposed action infeasible to implement.

All the necessary environmental studies and analyses have been conducted for the proposed action--no further study is required at this stage in the development process. All relevant environmental impacts and mitigating measures have been disclosed in this report. Postponement of the action will have no effect on the scope or quality of this report.

7.2.2 Residential Development

As noted above, the site is designated for low- and medium-density apartment uses on the Ewa Development Plan. These designations were adopted by the City Council in 1986 pursuant to a request by the landowner, the Estate of James Campbell. Full development of the site according the Campbell Estate proposal would result in approximately 750 low-density apartment units and 500 medium-density apartment units for a total of approximately 1,250 housing units. Because of the elevation of the site and related off-site views, and the attendant costs of providing on-site residential infrastructure, feasible residential uses would be limited to mid-range market-priced housing ($150,000+) consistent with much of the development at the adjacent Makakilo residential community.

The major housing need on Oahu is for affordable housing. A range of market-priced housing is being offered by various Oahu developers. Moreover, a number of residential projects are either serving or planned for the Ewa area. Thus, the development of market-priced housing on the site would not promote the public need for affordable housing.

Based on a dual water system, residential development of the site would require approximately 4.5 times as much potable water than as required under the proposed scheme (310,500 GPD vs. 70,000 GPD) and approximately half as much non-potable water (139,500 GPD vs. 294,000 GPD). Wastewater generated by such a residential development would far exceed flows from the proposed commercial use (500,000 GPD vs. 180,000 GPD).

Traffic generated by a residential development would impact both the local and regional transportation infrastructure more than the proposed action in terms of total vehicular trips generated. More importantly, residential development would directly impact existing peak-hour conditions while the proposed entertainment attraction would not.

In summary, residential development of the site would not produce affordable housing, would commit greater groundwater resources (particularly potable water), would require a greater expenditure in wastewater transmission and treatment facilities, and would have a greater adverse impact on transportation facilities.

7.2.3 Alternative Agricultural Uses

By virtue of the General Plan and Ewa Development Plan designations, the City and County of Honolulu has identified the project area for urban uses (albeit residential urban uses) in recognition of the need for urban land uses in the Ewa area and in the realization that feasible alternative agricultural uses (to sugar) have not been identified.

Amfac operates the largest plantation on the Island of Oahu--the approximately 14,000 acre sugar plantation managed by its subsidiary, Oahu Sugar Company, Limited (OSCo). As a major agricultural force in the State's economy, Amfac is diligently searching for crop alternatives to sugar. Sugar is a crop whose economic viability is threatened by European and third world low-cost sugar producers and the increasing domestic use of artificial sweeteners. It is an industry maintained at the whim of federal price supports. Sugar cultivation at the site is deemed not to be feasible by the very fact that the area was withdrawn from cultivation over four years ago due to the excessive cost of sugarcane cultivation. Major problems cited by OSCo on withdrawing from the site were the high salinity of the available agricultural water, the distance of the site from their mill in Waipahu and the high cost of harvesting due to highway crossings. Only those agricultural uses with higher per-acre yields are considered in this analysis, eliminating cattle grazing, the production of fodder crops and a range of other land extensive agricultural operations.

Ornamental Plants
Amfac is one of the State's largest and most knowledgeable ornamental plant producers. They have evaluated the site and have identified the need for an approximately 18-acre nursery to support the landscaping needs of the park complex. They do not anticipate an increased demand for ornamental plants which would precipitate the need for expansion of their existing operations.

Pineapple
Pineapple production is not feasible on coral impregnated soil and is therefore not considered as crop option for the subject site. The production of biomass crops, at one time considered as a viable alternative to imported fuel, is no longer considered a feasible option due to the relatively abundant supplies (and low cost) of imported fuels.

Alfalfa
Amfac is currently experimenting with the growing of alfalfa in the Ewa area. Should the experiment prove successful, a potential market exists for the replacement of imported alfalfa hay, cubes and pellets. The economics of alfalfa production have not been ascertained at this time pending the result of the Ewa experiments.

Vegetable Crops
A market on Oahu does exist for certain vegetable crops such as watermelon, sweet corn, green pepper, eggplant, cucumber, italian squash, miscellaneous small volume vegetables and bananas. The State of Hawaii is directly supporting the production of these vegetable crops through the agricultural park program wherein farmland is leased at below market rates to farmers for a fixed period of time.

Notwithstanding the potential viability of the alfalfa and vegetable crops at the site, and in the absence of Public subsidies, it is extremely unlikely that these crops could be farmed profitably in light of the current opportunity cost of the underlying land.

7.3 ALTERNATIVE COMMERCIAL DEVELOPMENT

Feasible commercial alternatives to the proposed entertainment attraction are constrained by the site's physical location relative to adjacent residential areas and market forces. A range of possible uses are not feasible due to the site's proximity to surrounding residential areas. The site has sufficient size and is appropriately located for a commercial shopping center. With access to both the H-1 Freeway and Farrington Highway, the site has the visual exposure critical for shopping center viability. Growth projections for the area indicate a rapidly expanding population base, another criterion of successful shopping center development.

The probability of developing a successful shopping center on the project site is severely reduced by the development of a nearby shopping center. The Estate of James Campbell is about to begin construction of the Makakilo Shopping Center at the northwest corner of the Farrington Highway-Makakilo Drive-Barbers Point Access Road intersection--approximately one mile east of the project site. The 30-acre site is within the State Urban District and has received the appropriate commercial zoning. The Makakilo Shopping Center represents the first phase of

the Estate's plan to develop the adjacent Kapolei Town Center. The first phase of the center is scheduled to open about 1988 and will include retail/commercial, restaurant and office uses.

Although the project site is well located to be developed as a commercial shopping center, development of such a center would be in direct competition with the Makakilo Shopping Center proposed for a site one mile east of the project site. Because of the delay caused by needed land use approvals, development of the project site as a shopping center is at least two years behind that of the Makakilo Center, affording the former a significant (perhaps insurmountable) market share. Furthermore, the property is encumbered with use restrictions which would prohibit the development of a shopping center at this time.

7.4 CONCLUSION

A number of alternative sites were evaluated around the island of Oahu before decining on the present site. A number of alternatives were analyzed for the present site including a no-action alternative (consisting of three options: postponement of action, residential development, and alternative agricultural uses) and an alternate commercial use of the site.

As noted, a fundamental criterion for a feasible action by a public company is that the action must ultimately result in the expectation of future returns for shareholders. The postponement of action and alternative agricultural uses explored above are projected to yield returns far short of those anticipated by the proposed action. The alternative of residential development would yield greater adverse environmental impacts than the subject action. Finally, the successful development of the site for an alternative commercial use, such as a shopping center, would be constrained by the pending development of a nearby shopping center and existing use restrictions.

In conclusion, the applicant has evaluated alternative proposals and finds that the proposed resident/visitor entertainment attraction represents the most feasible use of the site.

CHAPTER VIII

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES AND RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

This Chapter summarizes information presented elsewhere in this report in terms of two requirements of the Environmental Impact Statement Rules. Applicants are required to discuss: 1) the irreversible and irretrievable commitments of resources that would be involved in the proposed action should it be implemented; and, 2) the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity. These statements are discussed below.

8.1 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Chapter 200 of Title 11, Environmental Impact Statement Rules (11-200-17 (k)) requires the "identification of unavoidable impacts and the extent to which the action makes use of non-renewable resources during phases of the action, or irreversibly curtails the range of potential uses of the environment..."

The construction and long-term operation of the entertainment attraction will permanently and irretrievably commit money, time and physical resources. The proposed urban uses will displace the open space provided by the abandoned agricultural lands (although the proposed action will maintain a major portion of the site in landscaped open space). Development of the proposed action will foreclose alternative land uses including other urban uses. Other unavoidable impacts include increased traffic and increased demand on groundwater resources and regional infrastructure (transportation and wastewater).

The loss of these resources should be evaluated in light public policy objectives of establishing a Secondary Urban Center in Ewa.

8.2 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Chapter 200 of Title 11, Environmental Impact Statement Rules (11-200-17 (j)) requires a brief discussion of the "extent to which the proposed action involves tradeoffs between short-term losses and long-term losses or vice-versa, and a discussion of the extent to which the proposed action forecloses future options, narrows the range of beneficial uses of the environment, or poses long-term risks to health or safety..."

Short-term tradeoffs related to the proposed action are generally associated with the urbanization process. The project area consists of vacant land, productive only in its ability to provide open space and its potential for alternative future uses. The proposed action will commit the site to a particular urban use (an entertainment attraction) thereby "narrowing the range of [potential] beneficial uses" and possibly foreclosing future options. (It should be noted that an analysis

has been conducted to determine potential alternative uses of the site (Chapter VII). After analyzing a range of potentially feasible uses, none were found to return yields comparable to the proposed action). The construction and operational phases of development will involve greater environmental impacts than are currently generated by the site (i.e., increased water demand, wastewater, traffic, etc.). The open space currently afforded by the site will be altered and enhanced by the use of extensive landscaped planting and berming--the design concept provides for almost half of the site to remain in open space.

Long-term losses/tradeoffs relate to policy objectives of Oahu residents as expressed through their elected representatives. For many years Ewa has been designated as the location of the Secondary Urban Center. Reasons for the designation are manifold: to relieve growth pressures on urban Honolulu, to mitigate growing congestion on major traffic arterials, to prevent urban sprawl, and, perhaps most importantly, to develop a self-contained community with a full-range of urban services (housing, jobs, businesses and public facilities) so that present and future residents of the Ewa area can share in the economic prosperity associated with a growing urban area.

A central ingredient in establishing a Secondary Urban Center in Ewa is the provision of long-term employment in Ewa. As noted above, a major tenet of the SUC policy is the creation of employment--with a permanent employment base, residential land uses and secondary services can be sustained. The proposed action will be a major employer in Ewa and therefore will provide a major catalyst to transform the Ewa Plain from its rural, agriculturally-dependent economic base to a diversified and growing urban economy. The long-term tradeoffs discussed here are inherently positive and far out-weigh the short-term losses considered above. The proposed action poses no long-term risks to health or safety.

CHAPTER IX

PARTICIPANTS IN THE DEIS PREPARATION PROCESS, CONSULTED PARTIES, AND COMMENTS AND RESPONSES RECEIVED DURING PREPARATION OF THE DRAFT EIS

This chapter presents information on who participated in the preparation of the Draft EIS, who was consulted during the preparation of the Draft EIS, and all comments received and responses sent relative to the preparation of the Draft EIS.

9.1 PARTICIPANTS IN THE EIS PREPARATION PROCESS

This report was prepared for Amfac Hawaii, Inc. by Helber, Hastert, Van Horn and Kimura, Planners. The following list identifies individuals and organizations who were involved in the preparation of the report and their respective contributions.

Helber, Hastert, Van Horn and Kimura, Planners

Mark H. Hastert, AICP	Principal-in-charge and Project Manager
Thomas A. Fee, AICP	Project Planner and Principal Author
Lorraine M. Hope	Editing

Subconsultants

Leisure and Recreation Concepts, Inc.	Concept and Feasibility Analysis
Community Planning, Inc.	Engineering
Parsons Brinckerhoff Quade and Douglas:	Traffic
Char and Associates	Biology
Paul H. Rosendahl, Inc.	Archaeology

9.2 CONSULTED PARTIES AND COMMENTS RECEIVED DURING THE PREPARATION OF THE DRAFT EIS

By letter dated October 28, 1986 (page IX-3), the Department of General Planning (Accepting Agency) determined that the proposed entertainment attraction would require the preparation of an environmental impact statement pursuant to Chapter 343, HRS. The Environmental Impact Statement Preparation Notice (EISPN) for the project was published in the November 8, 1986 issue of the OEQC Bulletin which initiated a thirty-day public review period ending on December 8, 1986. In addition to the notice published in the OEQC Bulletin, a more detailed EISPN, including a location map of the project site (pp. IX-4 to IX-7), was mailed directly to the 33 agencies and organizations listed below. The list contains parties believed to have an interest in the project or who requested consulted party status and includes all adjacent landowners, lessees and relevant community associations.

Of the 33 request-for-comments letters sent out, a total of 24 responses were received by January 10, 1987. The agencies and organizations which responded are identified by an asterisk and their respective comments are reproduced below starting on page IX-8.

Federal Agencies

* Department of Agriculture, Soil Conservation Service
* Department of the Army, U.S. Army Engineer District, Honolulu
* Department of the Interior, Fish and Wildlife Service
* Department of the Navy, Naval Air Station Barbers Point

State Agencies

* Department of Accounting and General Services
* Department of Agriculture
* Department of Defense
* Department of Education
* Department of Health
* Department of Land and Natural Resources
* Department of Planning and Economic Development
* Department of Transportation

Office of Environmental Quality Control
University of Hawaii
Environmental Center
* Water Resources Research Center

County Agencies

Department of General Planning
* Department of Housing and Community Development
* Department of Land Utilization
* Department of Parks and Recreation
* Department of Public Works
* Department of Transportation Services
* Fire Department
* Police Department
* Board of Water Supply

Public Utilities

* Hawaiian Electric Company, Inc.
* Hawaiian Telephone Company

Private and Community Organizations

Oahu Sugar Company, Limited
Estate of James Campbell
American Satellite Company
Ewa Neighborhood Board No. 23
Honokai Hale/Nanakai Gardens Community Association
Makakilo Community Association
* Ewa Beach Community Association

The following pages contain a copy of the Agency Determination, the EISPN and the cover letter requesting review of the proposed development with respect to issues that should be addressed in the DEIS, and agency comments received during the public review period.

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

WL/DGP 10/86-9872

October 28, 1986

RECEIVED
OCT 31 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas A. Fee
Helber, Hastert, Van Horn & Kimura, Planners
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Ewa Development Plan
Amendment Application from Residential, Low Density Apartment, Medium Density Apartment, and Agriculture to Commercial use at Makakilo--87/E-1
Tax Map Key 9-1-15: por. 5 and por. 17
9-1-16: por. 9

This is to inform you that your request to amend the Ewa Development Plan will be processed in the 1987 Annual Amendment Review. Please submit to us a site development plan so that we may be able to visualize your development concept of the Visitor/Resident Entertainment Attraction.

Your request for a development plan amendment was subject to an environmental assessment pursuant to Chapter 343, HRS, the State Environmental Impact Statement (EIS) law. It has been determined that an EIS will be required for the proposed Visitor/Resident Entertainment Attraction as explained in the attached EIS Preparation Notice. Could you please supply us with a list of agencies and community organizations to be consulted in the preparation of the EIS.

In order that your request is processed in the 1987 Annual Amendment Review, this department must receive the draft EIS by February 1, 1987 and accept the final EIS by April 1, 1987. The State Office of Environmental Quality Control (OEQC) has been notified of our determination. They will be publishing a notice in their "OEQC Bulletin."

If there are any questions, please call Walter Lee of my staff at 527-6015.

Sincerely,

Donald Clegg
DONALD A. CLEGG
Chief Planning Officer

Attach.

cc: OEQC
Lawrence P. Perry

November 10, 1986

Environmental Impact Statement Preparation Notice (EISPN)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Dear

Amfac Hawaii, Inc. is requesting the Department of General Planning (DGP) to consider an amendment to the Ewa Development Plan (DP) during the FY 1987 annual review to change the DP designations of approximately 106 acres of land situated adjacent to the Palailai Interchange. Specifically, the amendment requests a redesignation from the current Residential, Low- and Medium-Density Apartment and Agriculture DP designations to the Commercial DP designation. Our firm has been retained to represent Amfac in this process.

As the accepting agency, DGP has determined that the DP amendment request will require the preparation of an Environmental Impact Statement (EIS) pursuant to Chapter 343, Hawaii Revised Statutes. Notice of this determination was published in the November 8, 1986 issue of the OEQC Bulletin. The publication of this determination begins a 30-day public review period wherein anyone can request to be consulted during the preparation of the EIS. All requests must be postmarked by December 8, 1986.

To facilitate your review of the proposed development, we have enclosed an expanded version of the EISPN published in the OEQC Bulletin. We would greatly appreciate your assistance in this process by either responding with written comments to the enclosed EISPN or by identifying an individual within your organization whom we may contact to discuss the project in greater detail.

Thank you for your cooperation in this matter.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

Enclosures

CHAPTER 343, HRS
ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE (EISPN)

VISITOR/RESIDENT
ENTERTAINMENT ATTRACTION

Ewa, Oahu

I. Development Summary

Applicant: Amfac Hawaii, Inc.
Post Office Box 3230
Honolulu, Hawaii 96801

Agent: Mark Hastert/Tom Fee
Helber, Hastert, Van Horn & Kimura, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Accepting Agency: Department of General Planning
650 South King Street
Honolulu, Hawaii 96813

Landowner: Estate of James Campbell

Location: Adjacent to the H-1 Freeway-Palailai Interchange. Directly west of Puu Palailai.

Acreage: 106 acres

TMKs: 9-1-15: por 05, por 17; 9-1-16: por 09

Proposed Uses: Visitor/Resident Entertainment Attraction

Existing Uses: Vacant land

State Land Use: Urban and Agriculture

Development Plan Designations: Residential, Low Density Apartment, Medium Density Apartment and Agriculture

Zoning: Agriculture (Ag-1) and Residential (R-6)

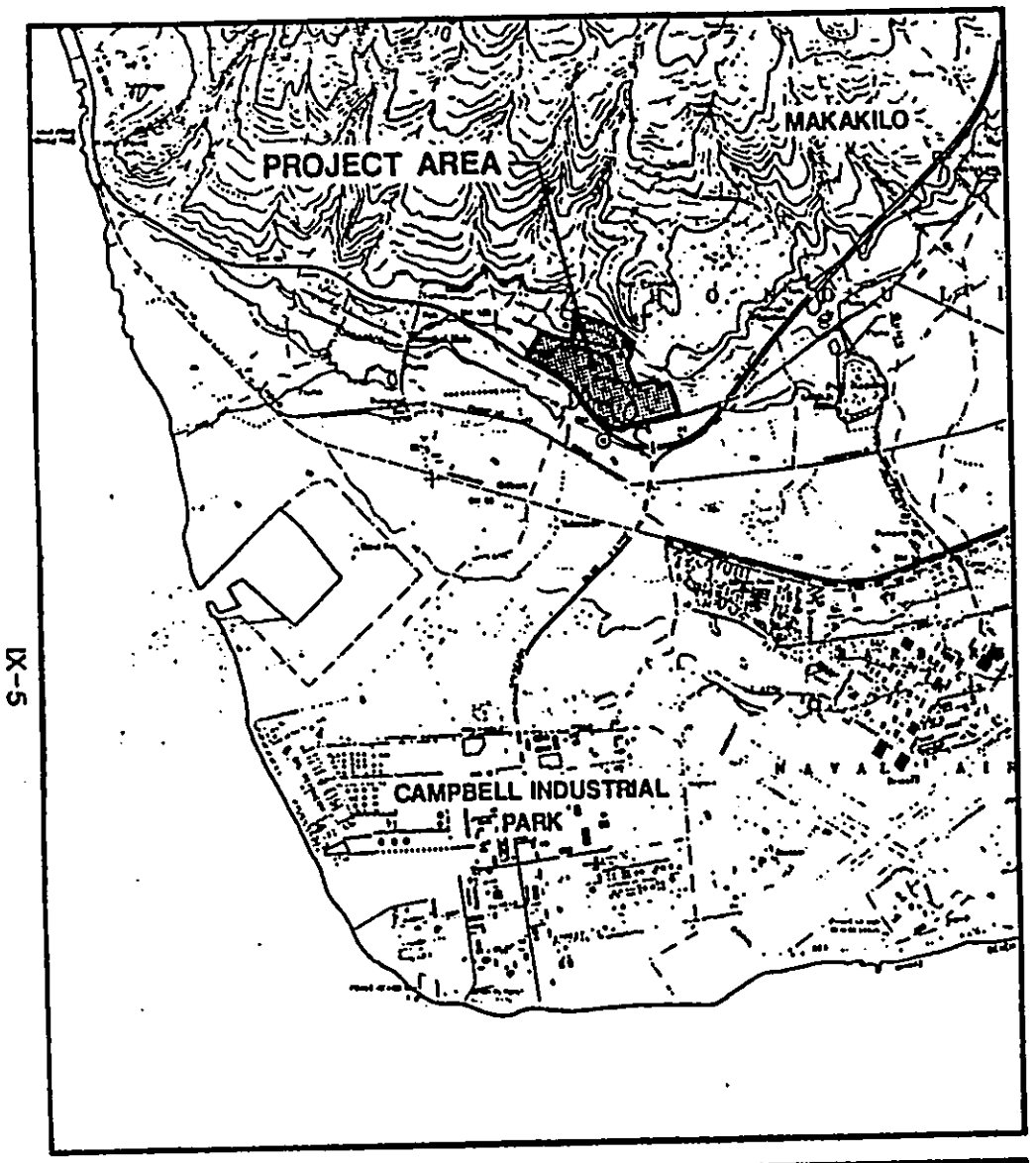
Request: Change of DP designation to Commercial

II. Location

The property is located north of and adjacent to the H-1 Freeway and the Palailai Interchange and south of and adjacent to the Palailai cinder cone (Puu Palailai) in Ewa Judicial District, island of Oahu (Figure 1). The site is approximately 20 miles west of Honolulu, the island's major urban center. Access to the project site is via the Palailai Interchange, Farrington Highway and Kalaeloa Boulevard.

III. Proposed Action

Amfac Hawaii, Inc. is proposing to construct a major new visitor/resident entertainment attraction on vacant land in the vicinity of the proposed



Secondary Urban Center on the Ewa Plain. The project has been designed to become one of the State's premier entertainment attractions as well as a source of employment in the Ewa area.

The basic development concept can be summarized by the phrase "Hawaii: Crossroads of the Pacific." The applicant intends to develop a project which will take both residents and visitors on a journey around the Pacific and Asian basin. The project will focus on Hawaii and countries such as China, Japan, Philippines, Australia, New Zealand and certain central Asian countries. Through representative architecture, multi-media and special-effects presentation, live stage productions, cultural exhibits and displays, ethnic foods and merchandise, the project visitor will take a miniaturized journey around the Pacific and Asian Basin in a five to six hour stay.

The project is intended to entertain, broaden and enrich the visitor by introducing him/her to these far away lands. The major countries presented in the project will have buildings, streets, landscaping and monuments that are designed to give the visitor a representative visual experience of each country. Performers, artisans, multi-media and special-effects presentations will be used to tell stories based on both fact and fiction drawing from the rich history, cultures, myths and literature of the countries portrayed. The facility will not contain thrill rides or amusement park features.

IV. Existing Conditions

The majority of the site is gently sloping with average grades ranging between zero and five percent. Portions of the site mauka of the old Farrington roadbed are steeper with grades in the five to fifteen percent range. Puu Palailai, rising to a height of 512 feet MSL, is the major physiographic feature visible from the site (peak height approximately 1,500 feet east of the rear property line). Since most of the site was under sugar cane cultivation until 1982, much of it has been graded with both a furrow-irrigation system in place. A 1.2 mile segment of the now closed Farrington Highway bisects the property. This was a two-lane, bi-directional roadway in fair condition. Access to the roadway is now restricted to authorized vehicles by large metal gates at both intersections with the H-1 Freeway.

At the present time the only use of the property is to provide access to: 1) The 138 KV transmission lines crossing a potion of the site (providing service to the Campbell Industrial Park); 2) The Barbers Point 215 water tanks maintained by the Board of Water Supply; and, 3) A new satellite earth station facility located on the western slope of Puu Palailai.

V. Development Timetable and Approximate Cost

Work on the attraction will begin as soon as the government approvals process allows. Construction of the approximately $50 million attraction is expected to take between 18 and 24 months to complete.

VI. Need for the Proposed Development

Market research indicates a growing demand for the type of visitor and resident entertainment attraction being proposed. The visitor market on Oahu is estimated to be 4.4 million in 1990 and projected to increase to more than 4.8 million by 1994. The resident market (consisting of both Oahu and neighbor island residents) is estimated at 1.14 million in 1990 increasing to 1.19 million in 1994.

Preliminary analyses conducted by the marketing consultant indicate that the project is expected to attract approximately 1.8 million visitors (including both Hawaii residents and out-of-state visitors) in the first year of operation. Because of the anticipated quality of the attraction and a growing market, attendance is projected to increase each year through 1994.

VII. Land Use Controls

The majority of the site lies within the State Agriculture District (a small portion lies within the State Urban District). A petition to incorporate the entire site within the State Urban District will be submitted to the State Land Use Commission in the Spring of 1987. The site is currently designated for low- and medium-density apartments (LDA and MDA), and residential uses on the Ewa Development Plan. Under the proposed use, the site would be redesignated Commercial. The potential housing units displaced by the redesignation would be replaced by additional housing adjacent to the proposed Ewa Town Center. The majority of the site is zoned Ag-1 with a small portion zoned R-6. A zone change will be requested at the appropriate time from the Department of Land Utilization.

VIII. Impacts

A. Economic

1. *Employment.* Amfac is expecting to employ approximately 1,200 full-time equivalent (FTE) positions to operate the proposed attraction. Approximately 4 percent (50 FTE positions) are expected to be filled by senior managerial staff with the remainder of positions filled by a mix of administrative, professional, managerial, technical, supervisory and service positions. The vast majority of the potential labor force to fill these positions are currently residing on Oahu.

2. *Government Revenues (Taxes).* The attraction will generate significant public revenues in the form of increase sales taxes, increased income taxes, and increased real property taxes.

3. *Location vis-a-vis Intended Market.* The project is centrally located relative to the major destination resorts on Oahu--the major markets for the proposed development. The project site is located adjacent to the proposed West Beach Resort area, some 15 miles from the Makaha Resort, approximately 22 miles from Waikiki, 22 miles from the proposed Mokuleia Resort area, and approximately 34 miles from the Kuilima Resort area.

B. Housing

1. The redesignation of approximately 106-acres of land (approximately 67 acres of LDA, 15 acres of Residential and 20 acres of MDA) would result in the loss of approximately 1,080 housing units from the Ewa DP area. However, since representatives of Campbell Estate have indicated their intent to request redesignation of a similar amount of land near the Ewa Town Center (from commercial to residential), the land use pattern, housing and population implications to the Ewa DP will remain unchanged.

C. Public Services

1. *Traffic.* Using 1990 attendance projections, the attraction is expected to generate an average of approximately 770 vehicle trips per day (VPD) with a peak day volume of approximately 1,690 VPD. Peak hour traffic conditions are estimated at approximately 120 vehicles per hour (VPH) on the average day increasing to 270 VPH on the peak day. The timing of peak hour conditions is directly related to the operating hours of the attraction and the average length of stay of the visitor. As a result, peak hour traffic flows can be adjusted to correspond with periods of low traffic demand on adjacent roadways, thus minimizing traffic impacts. Moreover, much of the traffic generated by the attraction will be moving in a contra-flow direction to peak-hour traffic, further mitigating the traffic impact.

2. *Water.* A dual water system is planned for the project with brackish water providing fire protection, wash-down water, make-up water for the various water features and landscape irrigation. Potable water will be used in the drinking fountains, lavatories, food service areas and in the W.C.s and urinals. First-year water requirements have been estimated at 184,000 gallons per day (GPD) for brackish water and 180,000 GPD for potable water.

3. *Wastewater.* Wastewater generated by the attraction will be transmitted to the proposed West Beach/Honouliili interceptor and processed at the Honouliuli Municipal Wastewater Treatment facility. Wastewater flows are estimated at approximately 180,000 GPD.

4. *Drainage.* The former agricultural operations established a system of open ditches to collect and discharge storm drainage through culverts located under the H-1 Freeway. The proposed improvements will require a drainage plan.

5. *Solid Waste.* Solid waste will be disposed of by private refuse disposal contractors. Collected waste will then be transported to a public landfill site and/or the the privately-operated Palailai landfill. Solid waste generation is estimated at approximately 2,500 pounds per day.

6. *Fire and Safety.* All construction will be in conformance with local building codes. A perimeter road will allow vehicular/emergency access to the entire site. A brackish water fire protection system is being proposed.

7. *Utilities.* Total electrical requirements for the attraction are estimated at 11,250 KVA (this includes a 50 percent contingency factor).

D. Environmental Impacts

1. *Noise and Air Quality.* The project is not expected to be a source of noise. An air quality study to assess the probable cummulative impact of the project on the Ewa air shed is currently being conducted.

2. *Compatibility with Surrounding Environment.* The proposed entertainment attraction is compatible the surrounding environment. The surrounding landowners, the Estate of James Campbell, have indicated their support of the attraction. The residential communities of Makakilo and Honokai Hale are located more than .5 mile from the site and, therefore, should not be affected by on-site activities at the proposed attraction.

3. *Historic and Archeological Resources.* An archaeological reconnaissance of the site is now being conducted. Due to the history of agricultural operations on the site, findings of significant historic and archaeological resources are not expected.

4. *Natural Features.* Because the site has been extensively graded, natural topographic features have long-since disappeared. A flora and fauna survey is now being conducted.

IX. Agencies to be consulted during preparation of EIS

The following agencies and organizations will be consulted during the preparation of the EIS:

Federal Agencies

Department of Agriculture, Soil Conservation Service
Department of the Army, Corps of Engineers Division
Department of the Interior, Fish and Wildlife Service
Department of the Navy, NASBP

State Agencies

Department of Accounting and General Services
Department of Agriculture
Department of Defence
Department of Education
Department of Health
Department of Land and Natural Resources
Department of Planning and Economic Development
Department of Transportation
Office of Environmental Quality Control
University of Hawaii
  Environmental Center
  Water Resources Research Center

County Agencies

Department of General Planning
Department of Housing and Community Development
Department of Land Utilization
Department of Parks and Recreation
Department of Public Works
Department of Transportation Services
Fire Department
Police Department
Board of Water Supply

Public Utilities

Hawaiian Electric Company, Inc.
Hawaiian Telephone Company

Private and Community Organizations

Oahu Sugar Company, Limited
Estate of James Campbell
American Satellite Company
Ewa Neighborhood Board No. 23
Honokai Hale/Nanakai Gardens Community Association
Makakilo Community Association
Ewa Beach Community Association

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
P. O. BOX 50004
HONOLULU, HAWAII
96850

December 2, 1986

Mr. Thomas A. Fee
HHVHK Planners
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, HI 96813

RECEIVED
DEC 3 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Dear Mr. Fee:

Subject: EIS Preparation Notice - Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii

We reviewed the environmental impact statement preparation notice for the subject project and have no comments to make.

Thank you for the opportunity to review the document.

Sincerely,

Wm H Mann ACTING
RICHARD N. DUNCAN
State Conservationist

IX-8

January 12, 1987

Mr. Richard N. Duncan
State Conservationist
U.S. Department of Agriculture
Soil Conservation Service
P.O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Duncan:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 2, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Your letter will be reproduced in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 230
FT. SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF:

November 26, 1986

RECEIVED
DEC 2 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas A. Fee
Helber, Hastert, Van Horn
& Kimura
733 Bishop Street
Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Thank you for the opportunity to review and comment on the EIS Preparation Notice for Visitor/Resident Entertainment Attraction, Ewa, Oahu, Hawaii. The following comments are offered:

a. If any wetland fills are proposed in the area, please contact the Operations Branch (telephone number: 438-9258) for Department of the Army permit requirements.

b. According to the Flood Insurance Study for the City and County of Honolulu, the proposed development is in areas designated Zone D which are areas of undetermined but possible flood hazards.

Sincerely,

Kisuk Cheung
Chief, Engineering Division

I-69

[redacted]

January 12, 1987

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

Dear Mr. Cheung:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of November 26, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Please note that no wetland areas exist within the project site.

Your comments are appreciated and will be incorporated into the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

United States Department of the Interior

FISH AND WILDLIFE SERVICE
300 ALA MOANA BOULEVARD
P O BOX 50167
HONOLULU, HAWAII 96850

ES
Room 6307

NOV 2 0 1986

Mr. Thomas A. Fee
Project Planner
Helber, Hastert, Van Horn &
Kimura Planners
Grosvenor Center
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Re: Environmental Impact Statement Preparation Notice,
Visitor/Resident Entertainment Attraction, Ewa, Oahu,
Hawaii, TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Dear Mr. Fee:

We have reviewed the referenced material and find that due to its nature, the proposed project will have no significant deleterious impact on fish and wildlife resources. Please do not hesitate to call on us if we may be of further assistance.

We appreciate this opportunity to comment.

Sincerely yours,

for Ernest Kosaka
Project Leader
Office of Environmental Services

cc: NMFS - WPPO
HDF&W
HDAR
EPA, San Francisco

RECEIVED
NOV 24 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

IX-10

January 12, 1987

Mr. Ernest Kosaka, Project Leader
Office of Environmental Services
United Stated Department of the Interior
Fish and Wildlife Service
300 Ala Moana Boulevard
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Kosaka:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of November 20, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Your comments are appreciated and will be incorporated into the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

DEPARTMENT OF THE NAVY
NAVAL AIR STATION
BARBERS POINT, HAWAII 96862-5050

5090
Ser 11/6346
02 JAN 1987

Mr. Thomas A. Fee
Project Planner
Helber, Hastert, Van Horn & Kimura, Planners
Grosvenor Center
PRI Tower, Suite 2590
733 Bishop Street
Honolulu, Hawaii 96813

RECEIVED
JAN 6 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Dear Mr. Fee:

ENVIRONMENTAL IMPACT STATEMENT
PREPARATION NOTICE (EISPN) FOR VISITOR/RESIDENT
ENTERTAINMENT ATTRACTION, EWA, OAHU, HAWAII

The subject EISPEN provided by your letter of November 10, 1986 has been reviewed with the following comments provided:

a. The proposed area is outside of the Navy Air Installation Compatible Use Zone (AICUZ).

b. However, there will be noise impacts from occasional fixed wing and helicopter over flights.

Thank you for the opportunity of making comment. Please provide copies of the EIS for review to this command and to Commander Naval Base, Pearl Harbor.

Sincerely,

W. D. WEST

Copy to:
COMNAVBASE PEARL
PACNAVFACENGCOM (Code 09P2)

IX-11

January 12, 1987

Captain W. D. West
Commanding Officer
Naval Air Station Barbers Point
Hawaii 96862-5050

Dear Captain West:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of January 2, 1987 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Your comments are appreciated and will be incorporated into the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: COMNAVBASE PEARL
PACNAVFACENGCOM (Code 09P2)

GEORGE R. ARIYOSHI
GOVERNOR

MUNEO MIURAKAMI
COMPTROLLER

MARK H. TOMINAGA
DEPUTY COMPTROLLER

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

LETTER NO. (P)2063.6

NOV 17 1986

RECEIVED
NOV 18 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas A. Fee
Project Planner
Helber, Hastert, Van Horn & Kimura
733 Bishop Street, Grosvenor Center
Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Subject: EIS Preparation Notice
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii

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

Very truly yours,

TEUANE TOMINAGA
State Public Works Engineer

GA:jnt

IX-12

January 12, 1987

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

Dear Mr. Tominaga:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of November 17, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Your letter will be reproduced in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

JOHN D. WAIHEE III
GOVERNOR

JACK K. SUWA
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

December 6, 1986

RECEIVED
DEC 1 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas A. Fee, Project Planner
Helber, Hastert, Van Horn and Kimura, Planners
Grosvenor Center
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Subject: Environmental Impact Statement Preparation Notice (EISPN) for Visitor/Resident Entertainment Attraction
Amfac Hawaii, Inc.
TMK: 9-1-15: por. 5 and 17
9-1-16: por. 9. Ewa, Oahu
Acres: Approximately 106

IX-13

Dear Mr. Fee:

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

According to the EISPN, the applicant is seeking an amendment to the Ewa Development Plan to establish the subject use. The subject site abuts the H-1 Freeway to the south. Most of the project site is within the State Agricultural District. A relatively small portion adjacent to Puu Palailai is within the Urban District. The Ewa Development Plan Map (Ordinance No. 81-80, as amended) indicates that the project site is designated as Low and Medium Density Apartment, Residential and a small area in Agriculture.

The subject site is classified as "Prime" (about 71 acres) and "Other Important" (about 5 acres) according to the Agricultural Lands of Importance to the State of Hawaii (ALISH) system. The remaining acreage is not classified according to the ALISH system. The Soil Conservation Service Soil Survey identifies the relevant soils as:

- Ewa silty clay loam (EaB) with 3 to 6 percent slopes which is used for sugarcane, truck crops and pasture. The crop capability classification is IIe, if irrigated (moderate erosion hazard)

- Honouliuli clay (HxA, HxB) with 0 to 6 percent slopes which is used for sugarcane, truck crops and pasture. The crop capability classification is I, if irrigated (few restrictions on attaining maximum agricultural productivity);

- Lualualei stony clay (LvB) with 2 to 6 percent slopes which is used for pasture, truck crops and sugarcane. The crop capability classification is IIIe if irrigated (severe erosion hazard);

- Molokai silty clay loam (MuC, MuD) with 7 to 25 percent slopes which is used for sugarcane, pineapple and pasture. The crop capability classification is IIIe and IVe respectively (severe erosion hazard); and

- Stony steep land (rSY) with 40 to 70 percent slopes which has little agricultural utility.

The project site has Land Study Bureau Overall Productivity Ratings of A82i, B16i, B63i, C86i and E64i. By this method of classification, the "A"-, "B"- and "C"-rated lands have very good to fair productivity potential for most agricultural uses.

The Draft EIS should include discussion on the following issues:

- What alternative sites for the proposed project were considered, and why was the subject site selected?

- The potential of establishing viable alternative agricultural uses on the project site should be analyzed.

- The resource impact on the State from the irrevocable loss of prime agricultural lands should be assessed.

- How does the proposed project conform to the State Agriculture Functional Plan and its objectives and policies, particularly Implementing Action B(5)(c)?

- How does the proposed project relate to Hawaii State Plan priority guideline 226-104(b)(2) which directs urban development into marginal or non-essential agricultural lands and to maintain agricultural lands of importance in the agricultural district?

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

Sincerely,

JACK K. SUWA
Chairperson, Board of Agriculture

cc: OEQC
DPED
DLU
DGP

January 12, 1987

Mr. Jack K. Suwa
Chairperson, Board of Agriculture
Department of Agriculture
State of Hawaii
1428 South King Street
Honolulu, Hawaii 96814-2512

Dear Mr. Suwa:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 6, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

The information and concerns provided in your review of the EIS Preparation Notice is appreciated and will be discussed in the Draft EIS. Please do not hesitate to contact us if we can provide further information regarding the proposed development.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

GEORGE R. ARIYOSHI
GOVERNOR

ALEEN T. LUM
DEPUTY ADJUTANT GENERAL

PAUL K. NAKAMURA
COLONEL, GSC
DEPUTY ADJUTANT GENERAL

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD, HONOLULU, HAWAII 96816-4495

NOV 18 1986

HIENG

Mr. Thomas A. Fee
Helber, Hastert, Van Horn & Kimura
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

RECEIVED
NOV 25 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Dear Ms. Uyehara:

Visitor/Resident
Entertainment Attraction
Ewa, Oahu

IX-15

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

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

Yours truly,

Jerry M. Matsuda

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

January 12, 1987

Major Jerry M. Matsuda
Hawaii Air National Guard
Contr & Enr Officer
Department of Defense
State of Hawaii
Office of the Adjutant General
3949 Diamond Head Road
Honolulu, Hawaii 96816-4495

Dear Major Matsuda:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of November 19, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Your letter will be reproduced in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lk

John Waihee
GOVERNOR

FRANCIS M. HATANAKA
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

December 4, 1986

RECEIVED
DEC 11 1986
HELBER, HASTERT, VAN HORN
& KIMURA PLANNERS

Mr. Thomas A. Fee, Project Planner
HHVH&K
Grosvenor Center
PRI Tower
733 Bishop St. Suite 2590
Honolulu, HI 96813

Dear Mr. Fee:

SUBJECT: Environmental Impact Statement Preparation Notice
Visitor/Resident Entertainment Attraction
Ewa, Oahu, HI TMK: 9-1-15: por 5 & 17; 9-1-16: por 9

Our review of your proposed amendment indicates that a decrease in enrollment impact will occur at the following area schools: Makakilo and Barber's Point Elementary, Ilima Intermediate, and Campbell High Schools.

We are reserving further comments, pending a redesignation of land near the Ewa Town Center from commercial to residential use by Campbell Estate.

Should you have any questions, please call Mr. Richard Inouye at 737-4743.

Sincerely,

Francis M. Hatanaka
Superintendent

FMH:dk

cc Mr. V. Honda, OBS
Leeward Dist.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

IX-18

January 12, 1987

Mr. Francis M. Hatanaka, Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Mr. Hatanaka:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 4, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

The information and comments you provided are appreciated and will be discussed in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

John Waihee

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

LESLIE S. MATSUBARA
DIRECTOR OF HEALTH

In reply, please refer to:
EPHSO

RECEIVED
DEC 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

December 11, 1986

Mr. Thomas A. Fee
Project Planner
Helber, Hastert, Van Horn & Kimura
733 Bishop St., Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Subject: Environmental Impact Statement Preparation Notice (EISPN) for Visitor/Resident Entertainment Attraction, Ewa, Oahu, Hawaii

Thank you for allowing us to review and comment on the subject EIS preparation notice. We provide the following comments:

DX-17

Solid Waste/Air Pollution

The site of the proposed project is located southwest and abutting the Puu Palailai Landfill site. The landfill is situated on the old PC&R quarry site and the expected remaining life is two years.

The development of parcel 9 of TMK: 9-1-16 should take into consideration that the landfill generates methane gas and of the possibility of migration of the gas onto the site.

Wastewater Disposal

The EIS should address the following:

1. Show location and size of the proposed West Beach/Honouliuli interceptor; and

2. Impact of the wastewater flows from the project on the capacity of Honouliuli WWTP.

Drinking Water

The Drinking Water Program has substantial concerns over the proposal of the use of a dual water system to support the proposed project. First, dual water systems bring nonpotable water under pressure into close proximity to the potable water. This fact increases the potential at least for two things to occur. The first is consumption of nonpotable water by a visitor or worker who mistakes one system for the other. Second, there is a likelihood of cross connection between the potable and nonpotable water systems, resulting in the contamination of the potable system. In many instances, innovative maintenance personnel will interconnect systems for various reasons primarily

increasing pressure or increasing flow, without realizing the significance of these actions resulting in contamination of the potable system.

Our second concern centers around the source of the brackish water. Because the project is proximate to the Palailai Landfill, the source for the brackish water would also reasonably be located near it. In the event that this is the case, please be aware that the brackish water source may be affected by leachate from the landfill. This would depend, of course, upon the presence of leachate, the direction of groundwater flow, the distance of the source from the landfill, and many other variables. However, in view of the proximity of the landfill activity, it is one impact that should not be overlooked. The environmental impact statement for this project must adequately address these concerns.

Noise

1. Residents at Honokai Hale and Makakilo City may be adversely affected by noise generated by entertainment activities associated with this type of project. Mitigative measures must be incorporated to minimize such impacts. Noise from the expected increase in vehicular traffic servicing the project, such as tour buses, delivery and commercial refuse trucks, may also impact the area.

2. Activities associated with the construction phase must comply with the provisions of Title 11, Administrative Rules Chapter 43, Community Noise Control for Oahu.

   a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the regulations.

   b. Construction equipment and on-site vehicles requiring an exhaust of gas or air must be equipped with mufflers.

   c. The contractor must comply with the conditional use of the permit as specified in the regulations and conditions issued with the permit.

   d. Traffic noise from heavy vehicles travelling to and from the construction site must be minimized near existing residential areas and must comply with the provisions of Title 11, Administrative Rules Chapter 42, Vehicular Noise Control for Oahu.

Sincerely yours,

LESLIE S. MATSUBARA
Director of Health

IX-18

January 12, 1987

Mr. Leslie S. Matsubara,
Director of Health
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Matsubara:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 11, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Your comments concerning drinking water have been forwarded to our engineering consultant for review.

The information and comments you provided are appreciated and will be fully discussed in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

JOHN WAIHEE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P O BOX 621
HONOLULU, HAWAII 96809

WILLIAM PATY
BOARD OF LAND & NATURAL RESOURCES
DEPUTY TO THE CHAIRMAN

DIVISIONS:
AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

DOCUMENT NO.: 2257B

JAN 08 1987

Mr. Tom Fee
Helber, Hastert, Van Horn &
Kimura, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

RECEIVED
JAN 12 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Dear Mr. Fee:

SUBJECT: Review of an Environmental Impact Statement (EIS) Preparation Notice for a Visitor/Resident Entertainment Attraction at Ewa, Oahu, Hawaii, TMKs: 9-1-15: por. 05, por. 17; 9-1-16: por. 09

Thank you for providing us a copy of the Environmental Impact Statement Preparation Notice (EISPN) for the above-mentioned project. We offer the following comments:

Historic Sites Concerns

A review of our records indicates that the project area does not contain historic sites that are listed on the Hawaii Register or the National Register of Historic Places, or that have been determined eligible for inclusion on the National Register of Historic Places. We understand that an archaeological surface survey was conducted by PHRI and that no sites were located and that prior sugar cane cultivation has likely destroyed any subsurface remains. We would like to obtain a copy of the survey report to have documentation of this finding, but given the verbal information, we believe the project will have "no effect" on significant historic sites.

However, nearby archaeological research in Ewa Beach, Barbers Point and West Beach has found archaeological sites in these areas. Some of the archaeological sites have dated back to AD 400, one of the earliest dates known for the Hawaiian Island chain. Sites documenting later occupation (AD 1400-1600) are still visible on the surface, and these sites have been found, thus far, in every reconnaissance survey which has taken place on the Ewa plain. Three National Register sites (80-12-2722, 2888, and 9714) are among these sites.

Given the importance of these nearby finds, we would like to cover the possibility that subsurface sites might be found in the project area below the disturbed agricultural zone. To do so, we recommend that in the event that subsurface deposits are encountered during construction activities, our office (548-7460) should be notified.

Water and Land Development Concerns

The proposal calls for developing 106 acres of abandoned cane land for a theme park. A dual brackish and potable water system is proposed with an estimated 184,000 gpd brackish water and 180,000 gpd potable water demand during the first year.

Management and protection of ground water resources is a primary concern. The source of both potable and non-potable water should be clearly stated in the draft EIS. The project site is located within the Pearl Harbor Ground Water Control Area as designated by the Department of Land and Natural Resources (DLNR) under Chapter 177, HRS, and Administrative Rule Chapter 166 of Title 13. As such, permits from DLNR will be required should it be necessary to develop ground water for the project within the Pearl Harbor Ground Water Control Area.

We hope these comments will be of assistance to you.

Very truly yours,

WILLIAM PATY, Chairperson
Board of Land and Natural Resources

January 12, 1987

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

Dear Mr. Paty:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of January 8, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction

Please note that the archaeological reconnaissance survey referred to in your letter will be included as Appendix D in the Draft EIS.

The information and comments you provided are appreciated and will be discussed in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lk

John Waihee
Governor

Murray E. Towill
Acting Director

DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT

Kamamalu Building, 250 South King St, Honolulu, Hawaii
Mailing Address: P.O. Box 2359 Honolulu, Hawaii 96804 • Tele. 548-3809 Hawaii

DIVISIONS
Business and Industry Development Division
Energy Division
Foreign Trade Zone Division
Land Use Division
Planning Division
Research and Economic Analysis Division

OFFICES
Administrative Services Office
Information Office

Ref. No. P-5551

December 8, 1986

Mr. Thomas A. Fee
Helber, Hastert, Van Horn
and Kimura, Planners
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

RECEIVED
DEC 9 1986
HASTERT, VAN HORN
KIMURA PLANNERS

Dear Mr. Fee:

Subject: EISPN - Visitor/Resident Entertainment Attraction, Ewa, Oahu

We have reviewed the subject environmental impact statement preparation notice (EISPN) and have the following comments to offer.

The EIS should include a discussion of relevant objectives and policies of the Hawaii Coastal Zone Management (CZM) Program, as specified in Chapter 205A, Hawaii Revised Statutes. To address potential concerns with respect to coastal ecosystem policies, we recommend discussion of the following:

1) The impacts of grading, runoff, and siltation during and after construction;

2) The hydrologic impact of using brackish water in relation to the salinity of underground aquifers; and

3) Wastewater flows in terms of the existing and future capacity of wastewater treatment facilities in the area.

Other concerns which are not directly related to CZM objectives and policies, but which merit attention in the proposed EIS include:

1) The issue of noise compatibility of the proposed land use with existing land uses in the area. The noise generated by construction (blasting, machinery) and during daily operations (loudspeakers, cultural activities) should be discussed in terms of their effects on nearby residential developments.

2) The potential for fire or explosion hazards. If portions of the site were previously used for landfill operations, there may be residual methane pockets that could constitute a fire/explosion hazard during and after construction.

IX-20

3. Impacts of the proposed attraction on existing and proposed residential, commercial, industrial and park uses within and surrounding the Secondary Urban Center.

4. The relationship of the proposal to existing and proposed resort developments on the Leeward coast.

5. The permanent loss of agricultural lands to urban uses. What impact will the proposed commercial use have on agricultural lands and their potential for diversified agricultural use?

6. The impact of the proposed project on existing traffic circulation patterns to and from Campbell Industrial Park, Barbers Point NAS, the Harbor, and Makakilo. The discussion should include the anticipated days and hours of operation for the proposed attraction and the facility's impact on existing and anticipated traffic to and from Honolulu.

7. The measures necessary to reduce the high shrink/swell potential of the site and the tendency for the soils to slide.

8. The relationship between the proposed project and the Hawaii State Plan (Chapter 226, HRS). This review should at a minimum discuss the relationship of the proposed project to the following: Population (Section 226-5, HRS), Economy (Sections 226-7 and 226-8, HRS), Physical Environment (Sections 226-11 thru 226-13, HRS), Facility Systems (Sections 226-14 thru 226-18), Socio-cultural Advancement (Sections 226-19, 226-20, 226-23, 226-25, and 226-27, HRS). Among the relevant Priority Guidelines, the following should be examined: Economic (Section 226-103(b), HRS), Population Growth and Land Resources (Section 226-104(b), HRS) and Affordable Housing (Section 226-106, HRS). The State Functional Plans should be reviewed to determine relevance to your project and important relationships should be discussed in the EIS.

Thank you for the opportunity to provide these comments.

Very truly yours,

Murray E. Towill

Murray E. Towill

cc: Office of Environmental Quality Control

January 12, 1987

Mr. Murray E. Towill
Department of Planning and Economic Development
250 South King Street
P.O. Box 2259
Honolulu, Hawaii 96804

Dear Mr. Towill:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 8, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Please note that none of the project area is located over previously used landfill operations. Also, because the site is relatively flat, the sliding of soil is not anticipated to be a concern.

Your comments are appreciated and will be incorporated into the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

JOHN D. WAIHEE
GOVERNOR

RECEIVED
DEC 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

IN REPLY REFER TO
STP 8.1735

December 11, 1986

Mr. Thomas A. Fee, Project Planner
HHVH & K
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

EIS Preparation Notice
Visitor/Residential Entertainment Attraction
Ewa, Oahu

As we are concerned about the proposed development's impact on our highway system, it is requested that a Traffic Impact Analysis Report be prepared and submitted for our review. The report should be complete and cover access to the State highway, the types of vehicles expected, traffic projects, improvements required, etc.

The EIS should address drainage, lighting, and utility needs where they affect our highway facility. The developer should be reminded that all plans for work within the State highway right-of-way must be submitted to and approved by the Highways Division and the cost of any improvements required will be borne by him.

We appreciate this opportunity to provide comments.

Very truly yours,

Wayne J. Yamasaki
Director of Transportation

IX-22

January 12, 1987

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

Dear Mr. Yamasaki:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 11, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

A Traffic Impact Report is being prepared and will be submitted as an Appendix to the Draft EIS.

Your comments are appreciated and will be discussed in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

University of Hawaii at Manoa

Water Resources Research Center
Holmes Hall 283 • 2540 Dole Street
Honolulu, Hawaii 96822

26 November 1986

Mr. Thomas A. Fee
Project Planner
Helber, Hastert, Van Horn & Kimura
733 Bishop St., Suite 2590
Honolulu, HI 96813

Dear Mr. Fee:

Subject: Environmental Impact Statement Preparation Notice, Visitor/Resident Entertainment Attraction, Ewa, Oahu, Hawaii, November 1986

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

1. Will portions of the project be located on the Palailai landfill, and if so they should be identified.

2. If water features and water rides are proposed, wherein relatively large quantities of brackish water are to be used, the environmental impacts of this should be addressed. It should be pointed out that the Division of Water and Land Development, Department of Land and Natural Resources has identified preferred sites for a proposed demonstration desalting plant downslope from the proposed Palailai site. Your attention is called to Fig. 6-1, Volume 2, Report R-74, Engineering Report Proposed Demonstration Desalting Plant, State of Hawaii, Dept. of Land and Natural Resources, Division of Water and Land Development, Aug. 1985. Some coordination may be warranted.

Thank you for the opportunity to comment. This material was reviewed by WRRC personnel.

Sincerely,

Edwin T. Murabayashi
EIS Coordinator

ETM:jm

January 12, 1987

Mr. Edwin T. Murabayashi, EIS Coordinator
University of Hawaii at Manoa
Water Resources Research Center
Holmes Hall 283
2530 Dole Street
Honolulu, Hawaii 96822

Dear Mr. Murabayashi:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of November 26, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Our comments are as follows:

1. The project site will not be located over any portions of the Palailai landfill.

2. We have forwarded your concern regarding the proposed water features on to our engineering consultant for review.

The information and comments your provided are appreciated and will be discussed in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE 523-4181

FRANK F. FASI
MAYOR

RECEIVED
DEC 1986
HELBERT, HASTERT, VAN HORN & KIMURA PLANNERS

MICHAEL M.K. MOON
DIRECTOR

ROBERT MIYAGI
DEPUTY DIRECTOR

December 15, 1986

Mr. Thomas A. Fee
Helbert, Hastert, Van Horn
and Kimura, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Subject: Preparation Notice (EIS) Visitor/Resident Entertainment Attraction

TMK:	9-1-15: Portions 5 and 17 9-1-16: Portion 9
Acreage:	106 Acres
Existing Uses:	Vacant Land
Development Plan:	Residential, Low Density Apartment, Medium Density Apartment and Agriculture
Zoning Map:	Agriculture and Residential (R-6)
State Land Use:	Urban and Agriculture
Request:	Change Development Plan designation to Commercial

Thank you for the opportunity to review and comment on the EIS Preparation Notice for the proposed Visitor/Resident Entertainment Attraction Center in Leeward Oahu. The proposal is to change the Development Plan designation to Commercial use.

The Department of Housing and Community Development has been requesting that ten 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 is currently being reviewed to include all Development Plan amendments under a new Community Benefit Assessment Bill currently before the City Council.

Please call Mr. James Miyagi at 523-4264 should you have any questions.

Sincerely,

Robert Miyagi

for MIKE MOON

January 12, 1987

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

Dear Mr. Moon:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 15, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Please note that the proposed entertainment attraction does not involve the development of any residential land uses.

Your comments are appreciated and will be incorporated into the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 523-4432

FRANK F. FASI
MAYOR

JOHN P. WHALEN
DIRECTOR

LU11/86-6493(BWM)

November 28, 1986

RECEIVED
DEC 1 1986
HELBER, HASTERT, VAN HORN & KIMURA, Planners

Mr. Thomas A. Fee
Project Planner
Helber, Hastert, Van Horn
& Kimura
Grosvenor Center, PRI Tower
733 Bishop Street
Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Environmental Impact Statement Preparation
Notice (EISPN) "Visitor/Resident Entertainment
Attraction" Requested Development Plan Change
From Residential, Low Density Apartment, Medium
Density Apartment and Agricultural to Commercial
Tax Map Keys: 9-1-15: Portion 05, Portion 17
9-1-16: Portion 09

The Department of Land Utilization (DLU) has reviewed your EISPN and has the following questions and recommendations for subjects which should be addressed in the preparation of the EIS:

A. Housing

Is Campbell Estate currently requesting other areas to be designated Residential? If so, which areas are being considered, and what is the time schedule for developing these areas for housing? Is low-cost or moderate-cost housing being considered?

The EIS should discuss the ramification of the relocation of future housing areas to a location near the Ewa Town Center.

B. Regional Impact

The project should be considered in relationship to other major developments in the Ewa area, such as the West Beach Resort, Ewa Marina, and the Ewa Plantation proposals.

C. Traffic

1. "Level of Service" downstream on H-1 Highway should be discussed in the traffic analysis, assuming full build-up of West Beach, Ewa Marina, Ewa Plantations, and other projects which have received Development Plan approval.

2. Discuss probable necessary improvements to the H-1 Highway and the relationship to the possible future interchange for access to Ewa Marina.

D. Water

1. Discuss relationship of proposed potable water usage to DLNR's ground water control area requirements.

2. Indicate water sources, DLNR declared capacity and preserved use amounts.

E. Wastewater

1. Discuss relationship of project's wastewater flow with total effluent flow from tributary area into the Honouliuli WWTP.

2. Is the Honouliuli WWTP at or near capacity? What is the projected effluent flow from the tributary area, including that from West Beach, Ewa, and Central Oahu? Will the WWTP need to be expanded?

We hope these comments will be helpful to you in the preparation of the EIS. If you have any questions on these comments, please call Bennett Mark of my staff at 527-5038.

Very truly yours,

JOHN P. WHALEN
Director of Land Utilization

JPW:sl
05578

January 12, 1987

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

Dear Mr. Whalen:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of November 28, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Regarding your comment (A), Campbell Estate has indicated their intent to request redesignation of a similar amount of land (from commercial to residential) near the proposed Kapolei Town Center to maintain the commercial/residential mix in the Town Center area. The Hawaii Housing Authority is proposing to develop a mixed housing project consisting of market priced and affordable housing units on approximately 600 acres of land approximately 1.5 miles east of the project site. The HHA plans to have the first increment of this project ready for occupancy within two year.

Your comments are appreciated and will be incorporated into the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

DEPARTMENT OF PARKS AND RECREATION

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

TOM T. NEKOTA
DIRECTOR

November 28, 1986

RECEIVED
DEC - 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas A. Fee
Project Planner
Helber, Hastert, Van Horn & Kimura
Grosvenor Center, PRI Tower, Suite 2590
733 Bishop Street
Honolulu, Hawaii 96813

Dear Mr. Fee:

Subject: Environmental Impact Statement Preparation Notice (EISPN)
Visitor/Resident Entertainment Attraction - Makakilo
Tax Map Key 9-1-15: por. 5 & 17 and 9-1-16: por. 9

We have reviewed the EISPN to amend the Ewa Development Plan (DP) to commercial designation to establish a visitor/resident entertainment attraction in Makakilo and offer the following comments:

We have no objection to the request for the proposed DP amendment to commercial designation. The proposed recreational attraction would have no impact on our public park facilities in the subject area. We have also determined that we have no requirements that apply to this project.

Should you have any questions, please call Mr. Jason Yuen of our Advance Planning Section at 527-6315.

Thank you for the opportunity to comment on the EISPN.

Sincerely,

Tom Nekota

TOM T. NEKOTA, Director

TTN:ei

IX-28

January 12, 1987

Mr. Tom Nekota, Director
Department of Parks and Recreation
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Nekota:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of November 28, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Your letter will be reproduced in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

TAF

Thomas A. Fee
Project Planner

TAF/lh

DEPARTMENT OF PUBLIC WORKS

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

RUSSELL L. SMITH, JR.
DIRECTOR AND CHIEF ENGINEER

ENV 86-244

November 26, 1986

RECEIVED
DEC 1 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas A. Fee
Project Planner
Helber, Hastert, Van Horn & Kimura
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Re: EISPN for Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii, TMK: 9-1-15: Por. 5 & 17; 9-1-16: Por. 9

In response to your letter of November 10, 1986, concerning the subject EISPN, we submit the following comments.

1. There is no municipal drainage system at the project area. A complete discussion of drainage and storm runoff should be prepared.

2. The existing Honouliuli Wastewater Treatment Plant (WWTP) does not have sufficient capacity to accommodate wastewater flows generated from the proposed development. There is no firm date when the WWTP capacity will be expanded.

3. The transmission of the wastewater from the proposed site to the WWTP should be discussed. The proposed wastewater transmission sewer from the West Beach development to the WWTP does not include capacity for the proposed development.

Very truly yours,

RUSSELL L. SMITH, JR.
Director and Chief Engineer

IX-27

[redacted]

January 12, 1987

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

Dear Mr. Smith:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of November 26, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Your comments have been forwarded to our engineering consultant for review and will be discussed in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

DEPARTMENT OF TRANSPORTATION SERVICES

CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

JOHN E. HIRTEN
DIRECTOR

JOSEPH M. MAGALDI, JR.
DEPUTY DIRECTOR

TE-7143
PL 1.0513

December 11, 1986

RECEIVED
DEC 15 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas A. Fee
Project Planner
Helber, Hastert, Van Born &
Kimura, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Subject: Environmental Impact Statement Preparation Notice
Visitor/Resident Entertainment Attraction
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

This is in response to your Environmental Impact Statement Preparation Notice of November 10, 1986 for the subject development.

A traffic impact study should be conducted in conjunction with the Development Plan Amendment request. The traffic study should address the following transportation concerns:

1. The amount of vehicular traffic to be generated by the project and its impact on the surrounding streets. A capacity analysis for the critical intersections near the project is necessary for the morning and afternoon peak hours.

2. The traffic impact of the project on the arterial system that will be affected. For this project, the H-1 interchange ramp capacities should be analyzed.

3. The impact of the project on the City's bus service to the area.

Should you have any questions, please contact Kenneth Hirata of my staff at 527-5009.

Sincerely,

JOHN E. HIRTEN

January 12, 1987

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

Dear Mr. Hirten:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 11, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Your comments have been forwarded to our traffic consultants for review and will be discussed in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
1455 S. BERETANIA STREET ROOM 305
HONOLULU HAWAII 96814

FRANK F. PAHI
CHIEF

FRANK K. KAHOOHANOHANO
FIRE CHIEF

LIONEL E. CAMARA
DEPUTY FIRE CHIEF

December 8, 1986

RECEIVED
DEC 9 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas Fee, Project Planner
Helbert, Hastert, Van Horn & Kimura, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

SUBJECT: EISPN VISITOR/RESIDENTIAL ENTERTAINMENT ATTRACTION, EWA, OAHU
TMK 9-1-15: por 5 & 17; 9-1-16: por 9

We have received the EISPN for the subject project. Fire protection for this area is provided by engine companies from Makakilo and Nanakuli with ladder service from Waipahu. We project a future fire station, housing both an engine and a ladder company, near the entrance to Campbell Industrial Park within the next six years.

Thank you for the opportunity to comment on this EISPN. Should you have any questions please contact Battalion Chief Kenneth Word of our Administative Services Bureau at 943-3838.

Very truly yours,

FRANK K. KAHOOHANOHANO
Fire Chief

FKK:KAW:lm

IX-30

January 12, 1987

Mr. Frank K. Kahoohanohano, Fire Chief
Fire Department
City and County of Honolulu
1455 S. Beretania Street, Room 305
Honolulu, Hawaii 96814

Dear Mr. Kahoohanohano:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 8, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

The information and comments you provided are appreciated and will be discussed in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96814 AND A.I.O.U. (808) 548-2555

FRANK F. FASI
MAYOR

OUR REFERENCE DI-LK/DJA

November 18, 1986

RECEIVED
NOV 25 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas A. Fee, Project Planner
HELBER, HASTERT, VAN HORN & KIMURA, Planners
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
VISITOR/RESIDENT ENTERTAINMENT ATTRACTION
EWA, OAHU, HAWAII
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

We have reviewed the material on the proposed visitor/resident entertainment attraction and do not have any objections to the proposed project. However, we suggest that adequate attention be paid to proper illumination of parking facilities, after-hours security, etc.

Sincerely,

DOUGLAS G. GIBB
Chief of Police

January 12, 1987

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

Dear Mr. Gibb:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of November 18, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

The information and comments you provided are appreciated and will be discussed in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

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

December 8, 1986

Mr. Thomas A. Fee
Helber, Hastert, Van Horn
& Kimura
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Subject: Your Letter of November 10, 1986 on the Environmental Impact Statement Preparation Notice for Visitor/Resident Entertainment Attraction at Ewa, Oahu, TMK: 9-1-15: Por. 5 and 17; 9-1-16: Por. 9

Thank you for the opportunity to comment on the proposed entertainment attraction at Ewa.

We have the following comments:

1. We are concerned about any excavation work that may be needed for waterways and lakes which may adversely affect the groundwater resources. We would need to review the construction plans and may require watertight linings for such man-made structures.

2. Our water service limits in the area are the 115-foot elevation on the east side of the Barber's Point Reservoir and the 142-foot elevation on the west side of the reservoir.

3. The developer should submit a master plan showing the total water requirements for his ultimate development plans. Depending upon his ultimate plans, the developer may be required to construct an off-site reservoir and participate in the development of a source.

4. The sources for potable and non-potable water should be addressed in the environmental document.

5. The environmental document should also indicate whether or not the project will become part of Campbell Estate's Master Plan for the area.

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

Very truly yours,

FOR KAZU HAYASHIDA
Manager and Chief Engineer

January 12, 1987

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

Dear Mr. Hayashida:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 8, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

The information and comments provided are appreciated. We have forwarded your letter on to our engineering consultant, Community Planning, Inc., for their review.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

HAWAIIAN ELECTRIC COMPANY, INC. · PO BOX 2750 · HONOLULU HI 96840 0001

ENV 2-1
NV/G

HEI

Brenner Munger Ph D PE
Manager
Environmental Department
(808) 548 6860

December 4, 1986

RECEIVED
DEC 5 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas A. Fee
Project Planner
Helber, Hastert, Van Horn
& Kimura, Planners
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Subject: Environmental Impact Statement Preparation Notice, Visitor/Resident Entertainment Attraction at Ewa, Oahu

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

1. The project could impact on our existing facilities and could create problems in the construction of additional 138 kv and 46 kv circuits on our rights of way.

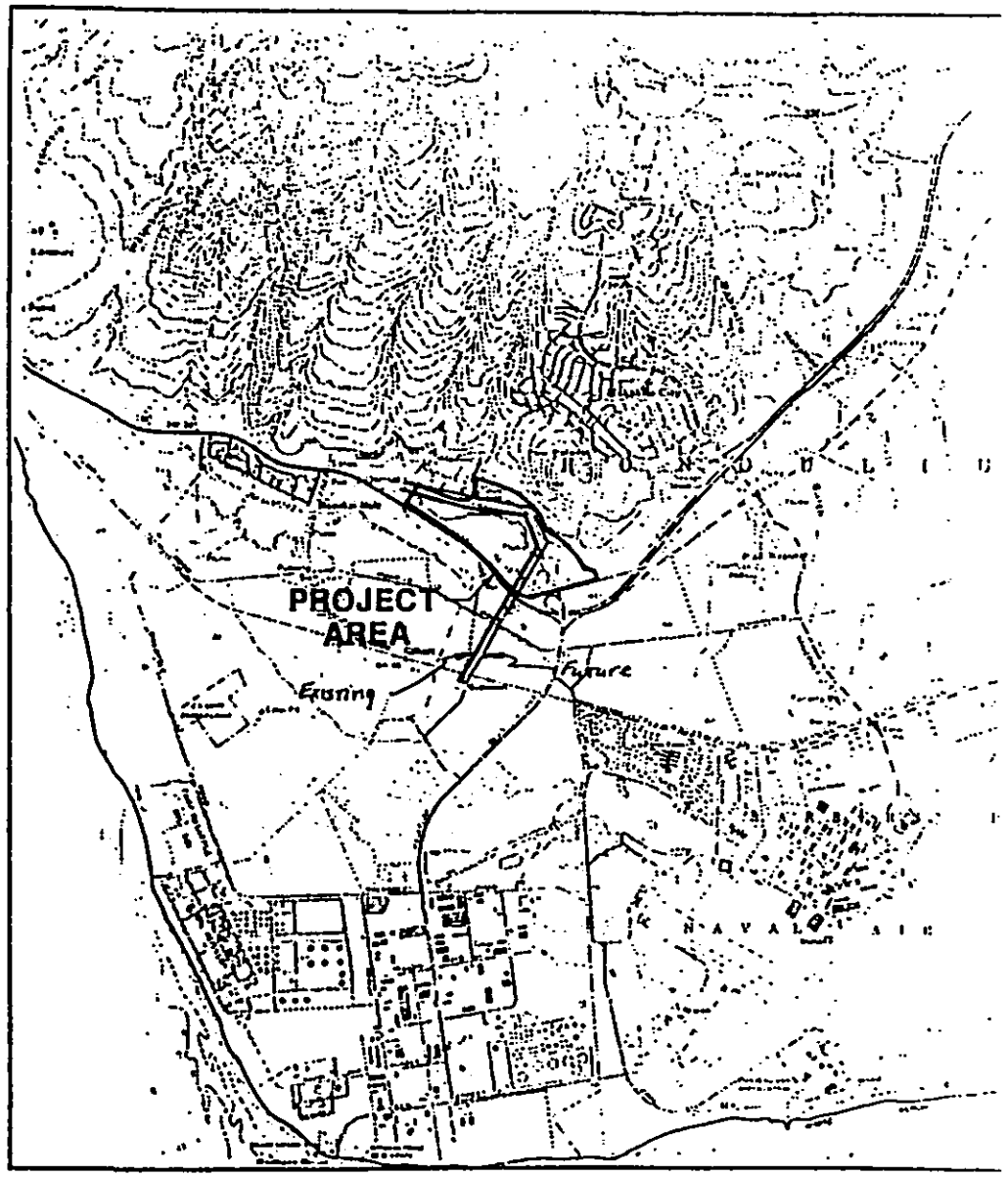
2. An existing Kahe-CEIP 138 kv line and a future 138 kv line easement are within the subject development. We have attached a marked copy of Figure 1 (see Enclosure 1) which shows the existing Kahe-CEIP 138 kv line in red and the future 138 kv line easement in blue. The developer should be made aware that access to these easements will be required at all times.

3. Based on the estimated electrical load of 11,250 kv, a new substation site will be required with additional 46 kv circuits constructed on new rights of way to serve the substation.

Sincerely,

JIM:gy

Attachment



LOCATION MAP

FEET 0 3000

Figure: 1

Amfac Hawaii, Inc.

HELBER, HASTERT, VAN HORN & KIMURA

ENCLOSURE 1

January 12, 1987

Mr. Brenner Munger, Manager
Environmental Department
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawaii 96840-0001

Dear Mr. Munger:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 4, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

The information and comments provided are appreciated. We have forwarded your letter on to our electrical engineering consultant, Ronald N.S. Ho & Associates, for their review.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

HAWAIIAN TEL GTE

Hawaiian Telephone Company
PO Box 2200
Honolulu, Hawaii 96841

Telephone (808) 546-4511

December 3, 1986

RECEIVED
DEC 1 · 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Helber, Hastert, Van Horn & Kimura, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Attention Mr. Thomas A. Hee

Gentlemen:

Environmental Impact Statement Preparation Notice (EISPN)
Visitor/Residential Entertainment Attraction
Ewa, Oahu, Hawaii
TMKS: 9-1-15: por 5 & 17; 9-1-16: por 9

We have reviewed the Environmental Impact Statement Preparation Notice (EISPN) for the Visitor/Residential Entertainment Attraction at Ewa. Our findings show that the proposed development will be situated in the close proximity of the existing Honokai Hale Subdivision at Barbers Point which is presently being provided with aerial telecommunication services. Therefore, we do not foresee any problems in providing telecommunication services to your proposed site.

Thank you for the opportunity to comment on this proposed development.

If you have any questions, please call Nelson Yrizarry at 834-6222.

Sincerely,

Walter M. Matsumoto
Oahu Engineering &
Construction Manager

January 12, 1987

Mr. Walter M. Matsumoto,
Oahu Engineering & Construction Manager
Hawaiian Telephone Company
P.O. Box 2200
Honolulu, Hawaii 96841

Dear Mr. Matsumoto:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of December 3, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

The information and comments you provided are appreciated and will be incorporated into the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

EBCA EWA BEACH COMMUNITY ASSOCIATION
P.O. BOX 3, EWA BEACH, HAWAII 96706

November 26, 1986

RECEIVED
DEC 1986
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas Fee
Project Planner
Helber, Hastert, Van Horn & Kimura, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

The Board of Directors of the Ewa Beach Community Association was reviewed AMFAC HAWAII, Inc.'s proposed major new visitor/resident entertainment attraction to be located on vacant land in the vicinity of the proposed Secondary Urban Center on the Ewa Plain.

The members approve of the proposed project as it will form a sizable employment base as well as furnishing an opportunity for residents and visitors to be introduced to the many countries in Asia and the Pacific. The Board members feels that there will be no major environmental impact on the Ewa Plain.

Sincerely,

Charles "Dick" Beamer, Ph.D.
President
Ewa Beach Community Association

January 12, 1987

Mr. Charles Beamer, President
Ewa Beach Community Association
P.O. Box 3
Ewa Beach, Hawaii 96706

Dear Mr. Beamer:

Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of November 26, 1986 regarding the EIS Preparation Notice for the proposed visitor/resident entertainment attraction.

Your support of the project is welcomed and your letter will be reproduced in the Draft EIS.

Sincerely,

HELBER, HASTERT, VAN HORN & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

R-36

CHAPTER X

REFERENCES

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Community Planning, Inc. Preliminary Engineering Analyses. Prepared for Amfac Hawaii, Inc., Honolulu. December 1986.

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_____. "Title 11, Administrative Rules, Chapter 343, Environmental Impact Statement Rules. December 1985.

_____. "Title 11, Administrative Rules, Chapter 60, Air Pollution Control". (n.d.).

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Helber, Hastert, Van Horn & Kimura, Planners. Application for Development Plan Amendment and Environmental Assessment, Visitor/Resident Entertainment Attraction, Ewa, Oahu. For submittal to the Honolulu Department of General Planning (Reference No. 87/E-1). Prepared for Amfac Hawaii, Inc. Honolulu. October 17, 1986.

_____. Application to Amend the Ewa Development Plan. For submittal to the Honolulu Department of General Planning (Reference No. 85/E-2). Prepared for the Estate of James Campbell. Honolulu. February 14, 1985.

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Leisure and Recreation Concepts, Inc. Concept Development and Feasibility Analysis of a Major Attraction on Oahu. Dallas. November 1986.

Parsons Brinckerhoff Quade & Douglas, Inc. Traffic Impact Study. Prepared for Amfac Hawaii, Inc. December 1986.

Paul H. Rosendahl, Inc. Preliminary Archaeological Reconnaissance Survey. Prepared for Amfac Hawaii, Inc. Hilo. December 1986.

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_____. Department of the Navy. Master Plan NAS Barbers Point, Oahu, Hawaii. September 1985.

University of Hawaii, Land Study Bureau. Detailed Land Classification - Island of Oahu. Honolulu. December 1972.

CHAPTER XI

COMMENTS AND RESPONSES RECEIVED
DURING THE PREPARATION OF THE
FINAL EIS

Sixty (60) copies of the Draft Resident/Visitor Entertainment Attraction Environmental Impact Statement (DEIS) were officially received by the Office of Environmental Quality Control (OEQC) on January 22, 1987 (p. XIII-3). Notice of the DEIS was published in the January 23, 1987 issue of the OEQC Bulletin and all sixty copies of the report were distributed to interested public agencies, organizations and individuals (pps. XIII-4 to 5). Five (5) copies of the DEIS (including an original, signed copy) were delivered to the "accepting agency," the Honolulu Department of General Planning. In addition, copies of the DEIS were sent to the Ewa Neighborhood Board, Makakilo, Ewa Beach and Honokai Hale/Nanakai Gardens Community Associations, and State and County legislators representing the area.

As of March 6, 1987, a total of 26 comments had been received (See below). All comments were responded to and both comments and responses are reprinted on the following pages (starting on XIII-6).

Agencies, Organizations and Individuals Submitting Comments to the Draft Environmental Impact Statement:

Federal Agencies

Department of Agriculture, Soil Conservation Service
Department of the Interior, Fish and Wildlife Service
Department of the Navy, Naval Base Pearl Harbor

State Agencies

Department of Accounting and General Services
    State Public Works Engineer
Department of Agriculture
Department of Defense
Department of Education
Department of Health
Department of Planning and Economic Development
Department of Transportation
University of Hawaii at Manoa
    Environmental Center
    Water Resources Research Center
Office of Environmental Quality Control
Land Use Commission

County Agencies

Building Department
Fire Department
Department of General Planning
Department of Housing and Community Development
Department of Land Utilization
Department of Parks and Recreation
Police Department
Department of Public Works
Department of Transportation Services
Board of Water Supply

Public Utilities

Hawaiian Electric Company, Inc.

Other Agencies and Organizations

State Representative Paul T. Oshiro, District 46

John Waihee

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
400 SOUTH KING STREET, ROOM 104
HONOLULU, HAWAII 96813

DIRECTOR
TELEPHONE NO.
548-6915

January 22, 1987

RECEIVED
JAN 23 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Mr. Thomas A. Fee, Project Planner
Helber, Hastert, Van Horn and Kimura
Grosvenor Center PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Subject: Draft Environmental Impact Statement for the Resident/Visitor Entertainment Attraction, Ewa, Oahu

The Draft EIS was officially received by the Office of Environmental Quality Control on January 20, 1987 and will be published in the January 23, 1987 OEQC Bulletin. The deadline for comments and the end of the 30-day public review period is February 23, 1987. We have requested all written comments be directed to the City and County of Honolulu Department of General Planning with copies to you.

Copies of the statement have been sent to the agencies, libraries, and organizations on the attached distribution list.

Should you have any questions regarding this EIS, please do not hesitate to contact me at 548-6915.

Sincerely,

Faith Miyamoto
Environmental Health Specialist

cc: Dept. of General Planning

XI-3

John Waihee

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
400 SOUTH KING STREET, ROOM 104
HONOLULU, HAWAII 96813

DIRECTOR
TELEPHONE NO.
548-6915

January 20, 1987

Dear Reviewer:

Attached for your review is an Environmental Impact Statement (EIS) that was prepared pursuant to Chapter 343, Hawaii Revised Statutes and Chapter 11-200, Administrative Rules, EIS Rules:

TITLE: Resident/Visitor Entertainment Attraction

LOCATION: Ewa, Oahu

CLASSIFICATION: Applicant Action

Your comments or acknowledgments of no comments on the EIS are welcomed. Please submit your reply to the accepting authority or approving agency:

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

Please send a copy of your reply to the proposing party:

Mr. Thomas A. Fee, Project Planner
Helber, Hastert, Van Horn and Kimura
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Your comments must be received or postmarked by: February 23, 1987

If you have no further use for this EIS, please return it to the Office of Environmental Quality Control.

Thank you for your participation in the EIS process.

DISTRIBUTION LIST

( ) E.A.
( ) APPLICANT ACTION
( ) AGENCY ACTION

(x) EIS
(x) APPLICANT ACTION
( ) AGENCY ACTION

Title: *Resident/Visitor Entertainment Attraction*

Location : *Ewa, Oahu*

Proposing Agency/Applicant: *Amfac Hawaii, Inc.*

Accepting Authority/Approving Agency: *City & County of Honolulu Dept. of General Planning*

Deadline for Comments: *February 23, 1987*

Date Sent/By: JAN 20 [illegible]

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Kapaa Library		
Koloa Community-School Library		
Waimea Library		

Captain W.D. West
Commanding Officer
Naval Air Station
Barbers Point, HI 96862-5050

cc: T. Fee

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
P. O. BOX 50004
HONOLULU, HAWAII 96850

February 20, 1987

Mr. Donald A. Clegg
Department of Planning
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

RECEIVED
FEB 2 3 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Dear Mr. Clegg:

Subject: Draft EIS - Resident/Visitor Entertainment Attraction, Ewa, Oahu

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

Thank you for the opportunity to review the document.

Sincerely,

RICHARD N. DUNCAN
State Conservationist

cc:
Mr. Thomas A. Fee, Project Planner
Helber, Hastert, Van Horn and Kimura
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, HI 96813

XI-6

March 6, 1987

Mr. Richard N. Duncan
State Conservationist
U.S. Department of Agriculture
Soil Conservation Service
P.O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Duncan:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 20, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

United States Department of the Interior

FISH AND WILDLIFE SERVICE
300 ALA MOANA BOULEVARD
P. O. BOX 50167
HONOLULU, HAWAII 96850

IN REPLY REFER TO:
ES
Room 6307

FEB 17 1987

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

Re: Environmental Impact Statement, Resident/Visitor Entertainment Attraction, Ewa, Oahu

Dear Mr. Clegg:

We have reviewed the referenced documents and have no additional comments to offer at this time.

We appreciate this opportunity to comment.

Sincerely yours,

for Ernest Kosaka
Project Leader
Office of Environmental Services

XI-7

cc: DLNR
✓Mr. T.A. Fee,
Helber, Hastert, Van Horn and Kimura

RECEIVED
FEB 18 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

HMSK

March 6, 1987

Mr. Ernest Kosaka, Project Leader
Office of Environmental Services
United States Department of the Interior
Fish and Wildlife Service
300 Ala Moana Boulevard
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Kosaka:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 17, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

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

11010
Ser 002(09P2)/364
02 MAR 1987

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

RECEIVED
MAR 3 1987
MILLER, MATSUI, YAMASAKI & HUNGERFORD PLANNERS

Dear Mr. Clegg:

DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE PROPOSED RESIDENT/VISITOR ENTERTAINMENT ATTRACTION, EWA, OAHU, HAWAII JANUARY 1987

The subject draft EIS has been provided by the State of Hawaii Office of Environmental Quality Control by transmittal of January 20, 1987 for review and comment.

After review of the draft EIS, the following comments have been identified:

1. Overall Ewa Development. The Department of the Navy is aware that the Estate of James Campbell, as a major landowner, is pursuing various proposals and planning initiatives for development of their lands in the Ewa plain. However, this initiative is being proposed to the County on a piecemeal basis in that it has not been previously identified in either the Estate's or the County's master plans, and does not address the inter-relationship of this development to others as well as to their cumulative impact on the island's resources, environmental considerations and adjacent lands or activities. Review and comment on individual plans, proposals or projects such as the subject entertainment attraction, separate from consideration of the overall plan for the Ewa area, does not serve the best interest of the public, the developer, the land owner or the Navy. The proposed site, even though it is outside the Navy AICUZ, may or may not be the best location. The site should be evaluated as part of the whole master plan for the Ewa plain.

Because of the following concerns and particularly the inconsistency of plans and planning, the Navy cannot support or oppose the development until it has an opportunity to review additional information to better evaluate all parts of the Long-Range Master Plan. It may be that the City and County may also wish to take a good look at this proposal in light of overall development plans for the future. The Navy would welcome any information or clarification regarding the Long-Range Master Plan and withholds further comment until such information is available for analysis.

Three specific concerns come to mind:

a. The February 1987 Hawaii Business Magazine includes an advertising supplement titled "1987 Growth Report on the Campbell Industrial Park". This

XI-8

Subj: DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE PROPOSED RESIDENT/VISITOR ENTERTAINMENT ATTRACTION, EWA, OAHU, HAWAII

report includes a small reproduction titled "Long Range Development Plan for Ewa Oahu". This 1987 multicolor plan designates the proposed area for the entertainment attraction as apartment - low density.

b. History has shown that successful resident/visitor entertainment centers (such as Polynesian Cultural Center) have been developed incrementally and expansion has a cumulative impact. Is the current proposal the outer property limit of this project? Will it be expanded in the future and in what directions?

c. Also, successful resident/visitor entertainment centers tend to spawn related development such as commercial businesses and hotels. Such further development may be incompatible with the Navy Air Installation Compatible Use Zone (AICUZ).

2. Aircraft Noise. On Page IV-16 under 4.8.1.2 "Aircraft Noise", statements are made regarding the Air Installation Compatible Use Zone (AICUZ). Comment: Line 8: "experienced" should read "experience", and the following words, "during the study year, 1984" should be deleted. The implication given is that noise has changed from the time of the Navy study (1984) to the time of the Campbell study was made and that the Campbell study is therefore more recent and more accurate.

The difference between the Navy study and the Campbell Estate study is that Campbell study is based on assumptions, one of which is that there will be no jet traffic on the flight track near the proposed development. The Barbers Point Study, which is based on three-year average of actual operational data, correctly reflects existing and continuing jet traffic on the flight track near the proposed development. In earlier correspondence on the EIS Preparation Notice, Navy provided comments that although the proposed area is outside of the Navy Air Installation Compatible Use Zone (AICUZ) there would be noise impacts from occasional fixed wing (including jet aircraft) and helicopter over flights.

3. Adjacent Development. As discussed in paragraph 2 above, the guidance provided by the Navy AICUZ which is based on flight records does not appear to have been considered in adjacent development. Planning seems to be proceeding on the unilateral assumption that there is no jet traffic North of NAS Barbers Point.

4. Ewa Marina. On Page IV-4 under 4.2.2 "Approved Developments in Ewa" the proposed Ewa Marina project is discussed. The Navy understands that this project is no longer active owing to withdrawal of the project sponsor. This paragraph should give indication as to whether the project is active or deferred for the next several years.

5. Water Supply. On Page VI-6 under 6.4.3 "Water Supply, Probable Impacts", it is stated that the project's water demand will not impact the water resources in the area, as potable water demand of 70,000 gpd will be provided from existing allocations and resources of Campbell Estate. The Navy

Subj: DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE PROPOSED RESIDENT/VISITOR ENTERTAINMENT ATTRACTION, EWA, OAHU, HAWAII

expresses concern that some of the present or future expanded projects of the Campbell Estate will require water that will impact upon other lands (including the Navy's).

6. Pearl Harbor Channel Tunnel. On Page III-22 under 3.4 "General Plan of the City and County of Honolulu, Transportation and Utilities" reference is made to a possible limited-access "Ewa Parkway" facility which would connect the Ewa area with Honolulu via a 1.1 mile tunnel under the Pearl Harbor Channel. The Navy has not endorsed such a project nor is it likely to do so because of problems involving construction and ongoing security precautions for the Pearl Harbor Channel.

Mr. Bill Liu of this command is the U.S. Navy point of contact and can be reached at 471-3703.

Sincerely,

P. O'CONNOR
Captain, U.S. Navy
Chief of Staff

Copy to:
Mr. Thomas A. Fee, Project Planner
Helber, Hastert, Van Horn & Kimura, Planners
Grosvenor Center, PRI Tower
733 Bishop St., Suite 2590
Honolulu, Hawaii, 96813

6-IX

3

March 6, 1987

Captain P. O'Connor
Chief of Staff
Department of the Navy
Naval Base Pearl Harbor
Box 110
Pearl Harbor, Hawaii 96860-5020

Dear Captain O'Connor:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of March 2, 1987 [Ref #11010 Ser 002 (09P2)/364] to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report. Although your comments were issued on March 2, 1987, seven days after the end of the thirty-day public agency review period, we will endeavor to respond to them in the short time provided to us.

Our comments are as follows:

1. Concern about overall Ewa Development

The Estate of James Campbell has invested a considerable effort in the long range planning for their Ewa lands in recognition of the need for orderly development of the Ewa Plain. As you are aware, long range planning is an ongoing process with graphic plans representing only a "snapshot" of the planning process at any point in time.

The proposed action is of recent origin and thus is not reflected on the long range plan referred to in your letter. The long range development plan will be revised at the appropriate time to reflect the proposed resident/visitor entertainment attraction. The Campbell Estate supports the proposed action for its potential to create employment opportunities and its beneficial effects at diversifying the economic base of the Ewa area.

2. Specific concerns

Q. Will the proposed action be expanded beyond its identified boundaries?

A. The project as represented in the EIS is at its maximum size. No expansion beyond the identified boundaries is anticipated at this time.

Q. Are other commercial activities planned for the area - which may be incompatible with the AICUZ?

A. As noted on page II-5 and as represented in Figure 3, an area is being set aside for future park-related commercial activities. As stated in your January 2, 1987 letter in response to the EISPN, "the proposed area [entire site] is outside of the Navy AICUZ".

Q. Differences between Navy AICUZ and Campbell Estate Noise studies.

A. Our understanding of these studies is that they were both prepared to reflect aircraft operations during the 1984 base year. No projections were made for subsequent years. We did not intend to imply that the Campbell Estate noise study "is therefore more recent and more accurate". Both studies were prepared to reflect 1984 conditions. As you are aware, the validity of either study is currently in dispute. Since the entire site is outside the Navy AICUZ, the result of this dispute should not impact this project.

Q. Consideration of Navy AICUZ in adjacent development.

A. As noted above, the project site lies outside the Navy AICUZ. Development of "adjacent" land is beyond the control of the applicant.

Q. What is the current status of the proposed Ewa Marina project?

A. The Campbell Estate is negotiating with developers to assume the Ewa Marina development responsibilities. It is difficult to assess how long the negotiation process will take. Development of that site is at least five miles away and outside the control of the applicant.

Q. Potable water demand and impacts from future expanded projects of Campbell Estate?

A. We have revised Section 6.4.3 of the EIS (Water Supply: Probable Impacts) to note that should Campbell Estate not be able to provide potable water to the project, alternative arrangements will be made with the Honolulu Board of Water Supply. Your concern about probable impacts of "some of the present or future expanded projects of the Campbell Estate" is beyond the scope of this EIS.

Q. Pearl Harbor Channel Tunnel

A. The Pearl Harbor Channel Tunnel is one of a number of alternatives discussed in the Hali 2000 study. We note the Navy's reservations regarding this particular alternative.

We appreciate your thorough review and comments on the DEIS.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

(P)1052.7

JAN 29 1987

RECEIVED
JAN 30 1987
HELBER, HASTERT, VAN HOOK & KIMURA PLANNERS

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

Dear Mr. Clegg:

Subject: Resident/Visitor Entertainment Attraction
Draft Environmental Impact Statement

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

Very truly yours,

T. Tominaga

TEUANE TOMINAGA
State Public Works Engineer

EM:jk
cc: Mr. Thomas A. Fee

XI-11

March 6, 1987

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

Dear Mr. Tominaga:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of January 29, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Your letter will be reproduced in the Final EIS together with this response.
Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

JOHN WAIHEE
GOVERNOR

SUZANNE D. PETERSON
CHAIRPERSON, BOARD OF AGRICULTURE

TADASHI TOJO
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

February 6, 1987

RECEIVED
FEB 1 . 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

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 Entertainment Attraction
Amfac, Inc.
TMK: 9-1-15: pors. 05 & 17
9-1-16: por. 09 Ewa, Oahu
Acres: 106

X1-12

The Department of Agriculture has reviewed the subject document and has the following comments to offer.

The applicant proposes to develop a major entertainment attraction. A copy of our comments on the EIS Preparation Notice was previously sent to you (letter to Mr. Thomas A. Fee, dated December 6, 1986). In that letter we highlighted four major issues, of which this DEIS addresses three to our satisfaction. The question concerning alternative sites considered for the proposed project is not discussed.

Thank you for the opportunity to comment.

Suzanne D. Peterson

SUZANNE D. PETERSON
Chairperson, Board of Agriculture

cc: Mr. Thomas A. Fee
OEQC
DPED
DLU

March 6, 1987

Ms. Suzanne D. Peterson
Chairperson, Board of Agriculture
Department of Agriculture
State of Hawaii
1428 South King Street
Honolulu, Hawaii 96814-2512

Dear Ms. Peterson:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 6, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Section 7.1 of the FEIS now includes a discussion of alternative sites considered for the proposed action.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

HIENG

Mr. Donald A. Clegg, Chief Planning Officer
C&C of Honolulu, Dept. of General Planning
650 South King Street
Honolulu, Hawaii 96813

RECEIVED
FEB 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Dear Mr. Clegg:

Resident/Visitor Entertainment Attraction
Ewa, Oahu

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

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

Yours truly,

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

cc: Helber, Hastert, Van Horn and Kimura

X1-13

March 6, 1987

Major Jerry M. Matsuda
Hawaii Air National Guard
Contr & Enr Officer
Department of Defense
State of Hawaii
Office of the Adjutant General
3949 Diamond Head Road
Honolulu, Hawaii 96816-4495

Dear Major Matsuda:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 2, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/ih

cc: Department of General Planning

JOHN WAIHEE
GOVERNOR

CHARLES T TOGUCHI
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

RECEIVED
FEB 1 1987

February 5, 1987

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

Dear Mr. Clegg:

SUBJECT: Resident/Visitor Entertainment Attraction

The proposed amendment to the Ewa Development Plan from residential to commercial use will result in the loss of potential students at the following schools:

School	Grade	Projected Enrollment Loss
Makakilo/Barber's Point Elem.	K-6	100-150
Ilima Intermediate	7-8	30-50
Campbell High	9-12	40-70

Your amendment will not have any adverse effect on our schools. Please keep us apprised of any other changes in the future so that we will be able to respond to classroom needs in a timely manner.

Should you have any questions, please call Mr. Richard Inouye at 737-4743.

Sincerely,

Charles T. Toguchi
Superintendent

CTT:dk (HRI)

cc: Mr. Thomas A. Fee
Leeward District
OBS

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

XI-14

HHMK

March 6, 1987

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

Dear Mr. Toguchi:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 5, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Your comments have been incorporated into Section 6.10 of the FEIS.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

John Waihee
GOVERNOR OF HAWAII

John C. Lewin, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to
EPHSD

February 20, 1987

RECEIVED
MAR 2 1987
BELT, COLLINS, HASTERT, VAN HORN & KUROYA PLANNERS

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

Dear Mr. Clegg:

Subject: Draft Environmental Impact Statement (DEIS) for Visitor/Resident Entertainment Attraction, Ewa, Oahu, Hawaii
TMK 9-1-15: Por. 5 & 17; 9-1-16: Por. 9

Thank you for allowing us to review and comment on the subject draft EIS. We provide the following comments for your consideration:

XI-15

Air Pollution

The EIS should include the potential impact on the ambient air quality as a result of the increase in vehicular activity from the proposed project and all other projects which were previously approved but have not started construction. The report simply mentions that potentially significant net increases in air pollutants may result from the traffic generated and associated with the cumulative developments. Projections on the increased traffic volume and the impact on the ambient air quality should be for the associated corridors, roadways, and highways. The results should be compared to the State and Federal ambient air quality standards. Should a potential violation be determined, the EIS should address the mitigating actions which shall be implemented.

Water Pollution

The draft EIS should address the impact of the leachate from the Palailai Landfill on the brackish groundwater which will be used for nonpotable usage. The nearby Palailai Landfill may have an impact on the water quality of the groundwater.

Vector Control

The major surrounding land uses around the proposed project area has a history of periodic mice problems especially during certain dry seasons. Areas affected include Makakilo, Honokaa Hale, Kahe Point, Paradise Cove, and West Beach.

The existing scrublands and kiawe woodlands surrounding these developments naturally support huge populations of field mice during the wetter months (October through February) when there is ample food source (vegetation, seeds, insects, etc.). Then as the dry season sets in and the food sources gradually deplete, the mice mass migrate out of these areas into "greener pastures."

In view of the problem cited, we strongly recommend that a rodent program be included as part of their routine operations.

Sincerely yours,

JOHN C. LEWIN, M.D.
Director of Health

cc: Mr. Thomas A. Fee ✓

March 6, 1987

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

Dear Dr. Lewin:

Final Environmental Impact Statement (FEIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 20, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the refereaced report.

Our commeats are as follows:

1. The EIS should include a discussion of the potential impact on the ambieat air quality as a result of the increase in vehicular activity from the proposed project.

Our air quality consultant has examined the potential environmeatal impact of the proposed actioa and has coacluded that the proposed actioa will not adversely impact air quality in the area. The analysis has been summarized in Sectioa 4.9 of the FEIS.

2. The EIS should address the impact of leachate from the Palailai Landfill on the brackish groundwater which will be used for non-potable usage.

As noted in Section 6.4 of the DEIS, the source of non-potable water is at the Pump 10 wells located approximately one mile west of the project site. Previously, the Pump 10 wells pumped an average of 14 mgd, but they are currently only pumping approximately 5 mgd due to the decreased demand for agricultural water in the area. There is no indication that any leachate from the landfill has affected this source. As noted in the EIS, water from the Pump 10 source was used to irrigate the site while it was planted in sugar cane, as well as provide water to the unlined agricultural reservoir located at the southeastern end of the site. Because of the pumping history of the Pump 10 wells and the relatively small amount of water involved (non-potable requirement of 232,000 gpd or 4.6% of Pump 10's current total daily pumpage) no adverse impacts are anticipated.

3. A rodent program should be included as part of routine operations.

Your recommendation is noted and will be passed on to the applicant.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT

Ref. No. P-5949

February 19, 1987

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

RECEIVED
FEB 25 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

Dear Mr. Clegg:

Subject: DEIS - Visitor/Resident Entertainment Attraction, Ewa, Oahu

We have reviewed the subject draft environmental impact statement (DEIS) and find that the comments of our December 8, 1986, review of the environmental impact preparation notice (EISPN) were generally addressed. Further information should be provided in the Final Environmental Impact Statement concerning the following issues:

XI-17

Water Hydrology and Use

The final EIS should provide additional information on: (1) anticipated water quality within the lagoon system, (2) method of discharge or recirculation of lagoon water, and (3) impact of lagoon water on groundwater quality if discharged into surface drainageways. For example, the DEIS indicates that several acres of lagoons will be created and filled with brackish water. If the lagoon water is allowed to evaporate without freshwater replacement, we are concerned that the salt content could eventually rise impacting water quality. If the lagoon water is discharged into surface drainageways, detrimental impacts to groundwater quality may result if the underlying caprock fails to provide adequate separation from the lagoon water leachate.

The final EIS should also include a discussion of health-related issues concerning site proximity to the Palailai Landfill. Extensive groundwater withdrawal in the area may draw contaminants from the zone underlying the landfill towards the Pump 10 well site. If the contaminants are then withdrawn, they could be inadvertently introduced into the lagoon system. On page IX-17, the State Department of Health (DOH) expressed their concerns regarding this issue in response to the Environmental Impact Statement Preparation Notice.

Noise and Lighting

Makakilo is situated approximately one-half mile from the project area at an elevation 100 to 200 feet higher than the proposed project. The final EIS should provide additional information on how the noise and lighting generated by the proposed project may impact Makakilo and the area designated as "Park" by the Ewa Development Plan Land Use Map (Figure 6).

One proposed feature of the proposed project includes an "open-air pavilion" catering to daytime and evening shows with "bigname" entertainment. Mitigating measures call for extensive landscaping and berming of the H-1 Freeway frontage to act as separation from noise generated by the park and freeway. When considered from this perspective, it is unclear how these measures on the opposite side of the proposed park will deflect noise away from the Makakilo and "Park" areas.

The final EIS should also address the lighting requirement for the pavilion. If spotlights or other special effects are a regular part of the stage shows, screening or directional lighting should be considered. Residents of Makakilo may be within visual site distance of the proposed park from their homes located at higher elevations.

Traffic

To provide a better picture of the proposed access and traffic improvements, the final EIS should include a Conceptual Master Plan illustrating the recommended relocation and "T" intersection of the primary access road relative to the guest parking area and main entrance. The illustrative "Conceptual Master Plan" (Figure 4) appears to be inconsistent with the information provided by the Summary of Mitigating Measures on page I-4.

A discussion regarding provisions for additional signage, analysis of other transit alternatives irrespective of the existing bus system and statements indicating the funding sources for these improvements should also be provided.

Need Analysis

The final EIS should clarify how the projected attendance level was established. If the proposed project reaches an annual attendance level of 2 million persons as projected, approximately 20 percent of all statewide visitors and residents would be expected to attend the facility at least one time every year.

Relationship to Ewa Development Plan

The final EIS should clearly identify the parcel(s) scheduled for redesignation from commercial to residential in the proposed secondary urban center as indicated on page III-23 of the DEIS. Although the total acreage for each respective land use will not be altered, relocating 106 acres of residential lands into areas now classified as commercial could impact many infrastructural facilities within the proposed secondary urban center.

Coastal Zone Management

The discussion of Coastal Zone Management (CZM)/Special Management Area Rules and Regulations on page III-26, should be amended to indicate the project is located within the CZM area. The CZM area includes all lands in the State, excluding forest reserves, and waters from the shoreline to the seaward limit of the State's jurisdiction.

Necessary Approvals

The land exchange described on Page IV-1, between the State and Campbell Estate for a segment of Farrington Highway, should be listed in Table 1, Necessary Permits and Approvals. The reallocation of water use, described on page IV-12, requires approval by the Board of Water Supply and should be similarly listed.

Thank you for the opportunity to review and comment on the subject document. We would appreciate receiving a copy of the final document.

Sincerely,

Murray E. Towill
for Roger A. Ulveling

cc: Mr. Thomas A. Fee, Project Planner
Helber, Hastert, Van Horn and Kimura
Office of Environmental Quality Control

March 6, 1987

Mr. Roger A. Ulveling, Director
Department of Planning and Economic Development
250 South King Street
P.O. Box 2259
Honolulu, Hawaii 96804

Dear Mr. Ulveling:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 19, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Our comments are as follows:

1. The Final EIS should provide additional information on the components of the proposed lagoon system and potential impacts of the lagoon on groundwater quality.

Section 2.3.4 has been added to the EIS discussing the proposed lagoon system. Related potential hydrologic impacts are discussed in Section 4.6.

2. The Final EIS should include a discussion of the health-related issues concerning the proximity of the Palailai Landfill.

Potential health-related impacts concerning the proximity of the Palailai Landfill are now discussed in Section 4.2.4.

We have also evaluated your concern regarding the potential for the Pump 10 source to adversely impact the migration of leachate from Palailai Landfill. The Pump 10 source has for many years yielded 14 mgd. Recent pumpage rates have been reduced to 5 mgd. As agricultural operations in the area are phased out, this pumpage rate will continue to decline. The project site will require approximately 232,000 gpd of brackish water from the Pump 10 wells, approximately 4% of its current yield. Historically, the project site has been flooded with up to 0.73 mgd of Pump 10 irrigation water while it was under sugar cultivation. An unlined agricultural reservoir was also used on site to store irrigation water.

The point being made here is two fold: 1) Historic pumpage rates, both from the Pump 10 source, and onto the subject site were much higher than exist now or are proposed herein; and 2) the fact that Pump 10 is pumping much less water today than say, five years ago, would tend to reduce the rate of leachate migration from the Landfill to the pump source, rather than increase it as implied in your letter.

3. The Final EIS should provide additional information on how the noise and lighting generated by the proposed project may impact Makakilo and the area designated as "Park" by the Ewa Development Plan Land Use Map.

As noted in Section 4.8.3 of the EIS, all development will be designed and constructed to comply with the noise provisions of Title 11, Administrative Rules Chapters 42 and 43 and the City and County of Honolulu Land Use Ordinance.

Our accoustical engineer has evaluated the noise issue and concluded that there will be no adverse impacts on the neighboring residential communities of Honokai Hale/Nanakai Gardens and Makakilo or the "Park" area referred to in the Ewa Development Plan Land Use Map is the current site of the Palailai Landfill.

Long range plans of the Campbell Estate show this "Park" site as a regional park built on the reclaimed landfill.

The proposed project's park lighting will be low-key with no requirements for the type of lighting required for typical ball-field activities. Design criteria for lighting will include adequate provisions to shield neighboring activities from any adverse impacts.

4. The EIS should present a revised Conceptual Master Plan indicating proposed access and traffic improvements.

The relocation of the access road was recommended after review of the Conceptual Master Plan; the apparent inconsistency of this recommendation with Figure 4 (which is noted "preliminary - subject to change") results in its listing as a mitigation measure. The Conceptual Master Plan was prepared to elicit comments and aid in the analysis and evaluation process. It will be revised to reflect recommended changes (such as the relocated entry) in the next phase of the design process.

The additional signage will be located within public roadways and provision of these will be coordinated with the appropriate agencies. Transit alternatives to the existing public bus system do not appear to be reasonable at this time because of low densities; evaluation of alternative transit service for the Ewa area would be more appropriate in a coordinated study encompassing all development in the Ewa area.

5. The EIS should clarify how the projected attendance levels were established.

Leisure and Recreation Concepts, Inc. (LARC) prepared the feasibility analysis in support of the proposed action. In establishing attendance projections for the park, LARC analyzed a number of factors including market characteristics, and existing competition. A thorough evaluation of existing and projected levels of residential and tourist markets was conducted. Drawing on their recognized experience in designing similar entertainment attractions, LARC developed a series of market penetration rates (high, medium and low, resident (off island on island), and visitors and applied these factors to the market data to arrive at projected attendance levels.

6. The Final EIS should clearly identify the parcel(s) scheduled for redesignation from commercial to residential in the proposed SUC.

It is not possible at this time to indicate with precision the actual location being considered for exchange. Discussions with planners for the Campbell Estate indicate the most likely areas for the proposed redesignation are located south of the Waimanalo agricultural road between Kalaeloa Boulevard and the Barbers Point Access Road within an area now designated for commercial use on the Ewa D.P.

7. The land exchange between DOT and Campbell Estate for a segment of Farrington Highway should be listed in Table 1, Necessary Permits and Approvals.

The FEIS has been revised to reflect your comment.

8. The reallocation of water use described on page IV-12 requires approval by the BWS and should be listed on Table 1, Necessary Permits and Approvals.

Page IV-12 clearly states that "water for the project (both potable and non-potable) will be provided from within existing allocations." No reallocations will be required. Notwithstanding this point, the applicant will continue to coordinate its activities with the Board of Water Supply.

We hope we have adequately addressed your concerns. Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

6153
STP 8.1875

February 26, 1987

RECEIVED
MAR 1987
HELBER, HASTERT, [illegible]
& KIMURA PLANNERS

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

Dear Mr. Clegg:

EIS - Resident/Visitor Entertainment Attraction
Ewa, Oahu

We note that the town bound traffic from the proposed development will utilize the Makakilo Interchange to access H-1. Since this interchange will also be heavily used in the future, the Palailai Interchange should be considered and evaluated to accommodate all traffic movements associated with the development.

The EIS makes reference to earlier studies prepared for the proposed Ewa Town Center from which traffic inferences are made. We request, therefore, that these studies be made available to us for our review.

Please contact us if you have any questions.

Very truly yours,

Edward Y. Hirata
Director of Transportation

DT:ko

cc: HWY, STP(dt)

Mr. Thomas A. Fee,
Helber, Hastert, VanHorn & Kimura

XI-20

March 6, 1987

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

Dear Mr. Hirata:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 26, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Our comments area as follows:

1. Use of the Palailai Interchange should be considered.

Several alternatives to serve towabound traffic from the project at Palailai Interchange were considered by the consulting traffic engineers. Their evaluation of these alternatives, however, indicated that the use of Farrington Highway, Makakilo Drive, and Makakilo Interchange would be the best way to serve this traffic. The traffic study addressed the potential impact of this traffic pattern.

The existing Palailai Interchange includes an on-ramp from Campbell Industrial Park onto a frontage road parallel to H-1. One alternative would be to provide a U-turn on Kalaeloa Boulevard, makai of H-1, so that traffic from the project can use the existing on-ramp. Traffic out of the project is expected to include a substantial number of large tour buses, which would require additional width both in the median and on the mauka bound lanes on Kalaeloa Boulevard. Because of the proposed expansion of the Industrial Park and development of the deep draft harbor, traffic volumes on Kalaeloa Boulevard are expected to increase, making provision of this U-turn undesirable.

A direct ramp from Kalaeloa Boulevard onto the frontage road may be difficult because of the elevation differences between the two roadways. A loop ramp in the west quadrant of the interchange would require additional right-of-way. More importantly, though, either of these alternatives would adversely affect operations on the frontage road, which presently serves traffic from Waianae to Barbers Point/Makakilo as well as traffic from the Industrial Park to Honolulu.

2. We would like to review the traffic studies prepared for the proposed Ewa Town Center.

The traffic studies will be provided for your review by our traffic consultants.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

University of Hawaii at Manoa

Environmental Center
Crawford 317 • 2550 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7361

February 23, 1987

RE:0456

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

Dear Mr. Clegg:

Draft Environmental Impact Statement
(Ewa) Resident/Visitor Entertainment Attraction
Ewa, Oahu

The proposed (Ewa) Resident/Visitor Entertainment Attraction to which this Draft EIS relates calls for the development of 106 acres adjacent to the Palailai Landfill and the H-1/Palailai Interchange. The proposed project will consist of a 'park complex' (70 acres), that will include lagoons, ponds, and waterways which join and separate the various represented countries that rim the Pacific. The proposed 'park complex' will incorporate multi-media and special effects, live performers, artisans, crafts people, representative architecture, extensive landscaping, cultural exhibits and displays, ethnic foods and merchandise. The remaining 36 acres will consist of a service area (which includes employee parking), a guest parking area, a nursery, and a future commercial area. The proposed project would necessitate, among other requirements, a State Land Use District Boundary Amendment so as to reclassify agriculture and residential to commercial. We have been assisted in this review by Paul Ekern, Agronomy and Soils; Chuck Gee, Kevin Boberg, Fredrick Collison, and Pauline Sheldon, Travel Industry Management; Ken Lowry, Urban and Regional Planning; Matthew Spriggs, Anthropology; Reginald Young,Engineering; Pamela Bahnsen and Steven Armann, Environmental Center.

Puu Palailai Landfill

Puu Palailai Landfill sits directly along the northeast side of the proposed project. We are concerned with the potential for environmental and health endangering pollutants from this landfill. We note the Department of Health's concerns in their letter dated December 11, 1986 submitted at the Preparation Stage regarding this landfill. The Draft EIS has not adequately addressed their concerns. The Final EIS should fully discuss the possible impacts of the leachate resulting from this neighboring landfill.

Although the proposed project would not be located over the Puu Palailai Landfill, the Department of Planning and Economic Development's concerns regarding the potential for fire and/or explosion hazards due to residual methane pockets along with DOH's concern about the migration of gas to the proposed project site should be addressed in the Final EIS.

The Final EIS's description of Existing Surrounding Land Uses (p. IV-3) should include a discussion of the Puu Palailai Landfill. Generally, there appears to be a noticeable lack of discussion regarding this landfill and its relationship to the proposed project.

Water Supply

According to the Draft EIS, the information regarding water needs is based on 'past experience' (p. VI-5, Appendix B), however, no documentation on this basis is provided. Due to the arid climate of the site location and the limited amount of water in the area, it is vitally important that water use be accurately forecast. The estimated amounts of non-potable and potable water to be used needs to be quantified and substantiated with data that provides a basis for the estimates provided in the Draft EIS (p. II-9, VI-6, Appendix B). An assessment of the evaporation of the surface waters of the lagoons, ponds, and waterways should be taken into consideration. How much acreage will be irrigated for plantings and for the nursery? What pond depths are proposed and how many acres will the lagoons, ponds, and waterways utilize?

There is a need to protect Hawaii's groundwater resources so the proposed plan to line the lagoons, ponds, and waterways would hopefully prevent leakage into this resource. The relationship of the proposed project to the 'No Pass Zone' should be indicated on a map and the elevations of the proposed project site should be more clearly defined.

Traffic/Parking/Noise Impacts

Forecasted visitor count is 2 million people per year after the project has achieved market acceptance. This translates into 5,470 visitors per day and assuming a 90:10 visitor-to-resident ratio, nearly 5000 tourists.

If these tourists were all riding in a 40-seat bus to the attraction, nearly 125 bus trips (each day) would be added to the roadway system daily--a significant increase. The traffic impact would be even greater if more visitors were to travel by car or if buses were filled at less than full load factors.

The Draft EIS addresses only the traffic implications at the proposed entertainment 'park' itself, however, the proposed 'park' would affect traffic problems elsewhere on the island as well. Assuming that tour buses to the theme park would be coming from Waikiki, the additional traffic volume on Kalakaua would have a considerable impact on the flow, particularly given the current beautification project to reduce the number of lanes and proposed traffic restrictions for the area.

Will there be stop signs or signals at the proposed 'park complex' access connection to Farrington Highway (east of Kalaeloa Boulevard)? The heavy traffic which can be created at this intersection during certain hours is addressed in Appendix E but is not discussed in the text. Consideration should be given to installing a demand-oriented signal for the Farrington Highway-Kalaeloa Boulevard intersection.

The traffic patterns for employees is likely to be more complex than stated in the Draft EIS. While some employees would live in the surrounding communities, this proportion is probably over-estimated. We belaive that a significant portion would be commuting from Honolulu and other areas. An assessment therefore, needs to be made regarding employees use of The Bus vs. personal vehicles.

According to the conceptual master plan (Figure 4) there appears to be insufficient parking space alloted considering the number of employees (est. 1200) and visitors (est. 5000 per day). The parking allocation for tour buses also appears to be inadequate.

The existing industry in this area may have a negative impact on the proposed project in terms of noise and visual pollution, and heavy industrial traffic (Campbell Industrial Park, Barbers Point, NAS, Barbers Point Deep Draft Harbor). This will worsen over time.

Socio-Economic Impacts

The rezoning of the land required by the project will cause a loss of 1250 potential residential units. Although it has been stated in the Draft EIS that Campbell Estate has "indicated its intent to request redesignation of a similar amount of land" from commercial to residential, we find the statement to be somewhat ambiguous and without adequate substantiation, especially if the loss of residential units is already perceived to be of concern.

The Draft EIS states that the proposed facility "will further the [State's] policy of allowing for upward mobility within the visitor industry." Given the low percentage of estimated jobs in the managerial and administrative categories (combined total of 8.5 percent). How will this upward mobility be achieved?

Historic/Archaeological Resources

We note that Appendix E contains a 'Preliminary Archaeological Reconnaissance Survey'. The use of Preliminary Archaeological Reports at the Draft EIS stage does not provide sufficient information to permit adequate evaluation of the potential impacts to archaeological resources.

Maps and Illustrations

In this developing community the cumulative environmental impacts of the existing, approved, and proposed developments in the Ewa area with respect to the proposed project are crucial. An orientation map of the area showing the existing, approved, and proposed developments in relation to the proposed entertainment 'park' would facilitate an overall understanding of the area.

138-KV Transmission

We believe that the Draft EIS underestimates the complexity of redirecting the route of the existing power line. We suggest the implications of such redirection will require further study.

Project Viability

The demand factor, which is normally part of a marketing feasibility study rather than an EIS, is relevant to this particular Draft EIS since it has direct impact on certain environmental aspects. In this instance, we have some concern as to whether the types of activities proposed for the entertainment 'park' will actually attract visitors, and if yes, whether the logistics of people movement have been adequately explained in the Draft EIS.

No mention is made of what will happen to the proposed entertainment 'park' and consequently to employment in the event that the project is not commercially viable. Projects of this nature have a relatively high degree of economic risk which should be addressed.

We appreciate the opportunity to comment on this Draft EIS and hope you will find our comments useful in the preparation of the final document.

Yours truly,

Jacquelin Miller
Acting Associate Director

cc: OEQC
Thomas Fee,
Helber, Hastert, Van Horn and Kimura
Paul Ekern
Chuck Gee
Kevin Bober
Fredrick Collison
Pauline Sheldon
Matthew Spriggs
Ken Lowry
Reginald Young
Pamela Bahnsen
Steven Armann

XI-23

March 6, 1987

Ms. Jacquelin Miller
Acting Associate Director
University of Hawaii at Manoa
Environmental Center
Crawford 317, 2550 Campus Road
Honolulu, Hawaii 96822

Dear Ms. Miller:

Final Environmental Impact Statement (FEIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 23, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Our comments are as follows:

Pau Palailai Landfill

The FEIS has been revised to discuss the referenced impacts. Section 4.2.1 now includes a discussion of the Palailai Landfill. Section 4.2.4 discusses the potential for odor and hazardous gases originating at the landfill to impact the proposed action. Section 4.6.3 discusses the potential hydrologic impacts associated with landfill leachate.

Water Supply

Basic water demands for the site have been provided by Leisure and Recreation Concepts, Inc. (LARC). LARC is a recognized expert in designing facilities like the proposed action and, because of its considerable experience in this area, is capable of providing reasonable estimates of water demand. A downward revision has been made to the volume of make up water required to compensate for losses due to evaporation within the lagoon area. Additional information has been added to the EIS (Section 2.3.4) to describe the lagoon system. As stated in the EIS, the project site is within the BWS "No Pass" zone site. Elevations range from 84 feet MSL near the southern edge of the site adjacent to Farrington Highway to approximately 200 feet MSL at the upper boundary of the nursery. Topographic contours are found on all eight of the figures used in the EIS.

Traffic/Parking/Noise Impacts

The traffic study estimated traffic impacts for a higher visitation than suggested; i.e. nearly 3 million visitors in 1995 (about 50% greater than anticipated by applicant) with factors to account for peak days, one-fourth of out-of-state visitors arriving in rental cars, and less than 30 out-of-state visitors per bus or van. Traffic attracted by the proposed project would be less than five percent of existing traffic volumes, which are expected to increase because of development of the town center.

While some of the tour buses serving the proposed project would also travel in Waikiki, we note that without the Ewa attraction, out-of-state visitors would find other attractions (outside Waikiki), and as a result, we disagree with the implication that the Ewa project will have "considerable impact" to traffic in Waikiki.

The DEIS indicates that the project's access will be relocated as recommended in the traffic study, which describes the possible controls at the intersection. The recommendation of relocating the access was based partly on the finding that signalization of the Farrington Highway and Kalaeloa Boulevard intersection would be undesirable. A demand-actuated signal at the relocated access road intersection could be installed if and when traffic volumes or delays warrant signalization.

Employee traffic patterns were not evaluated because employee traffic is not anticipated to coincide with the afternoon peak commuting period or the weekend peak visitation period. Moreover, employee generated traffic, if originating in Honolulu (proper), would use the portions of the freeway or bus service that are presently underutilized (because of time or direction of travel).

In preparing the Conceptual Master Plan, LARC evaluated parking requirements of employees and visitors. Areas identified on the Conceptual Plan were deemed sufficient to handle peak day visitor and employee volumes.

Socio-economic Impacts

As noted in the EIS, the Ewa area will be undergoing a massive residential development phase over the next 10 year period. Housing for all segments of the community are being planned for development. In an effort to keep the relative location of planned residential areas within the Ewa area intact, Campbell Estate has offered to redesignate a comparable portion of commercially designated land to residential. It is not possible to indicate with precision the actual location being considered for exchange. Discussions with planners for Campbell Estate indicate the most likely areas for the prepared redesignation are located south of the Waimanalo agricultural road between Kalaeloa Boulevard and the Barbers Point Access Road within an area now designated for commercial uses on the Ewa D.P.

The proposed action will create a substantial number of new jobs. A major job component will be involved in "Park Operations". These jobs will involve the management, operation and maintenance of park equipment which, in many cases, will be state-of-the-art multi-media and special effects equipment. The applicant, Amfac Hawaii, Inc., is a major employer in the State and is regarded highly by its employees as a responsible employer.

Historic and Archaeological Resources

The use of the word "Preliminary" in the title of the archaeological reconnaissance conducted on the project site may be misleading. In fact, the study presents the final findings and conclusions of the consulting archaeologist. The study found that no archaeological remains are known to exist within the project area. The State Historic Sites office has reviewed the report and concurs with its findings.

Maps and Illustrations

To facilitate your review, we have attached a reduced copy of the current Ewa Development Plan Land Use Map. A portion of this map is presented as Figure 6.

141-KV Transmission

Our electrical engineer is closely coordinating all development activities with HECO.

Project Viability

Your comments regarding project viability are noted. The applicant recognizes the complexities involved in developing a project of this type. As you are aware, the applicant is well experienced in visitor industry operations, food service and retail sales and brings this combination of expertise and the expertise of its various theme park consultants to bear on this development project.

Your letter will be reproduced in the Final EIS together with this response.

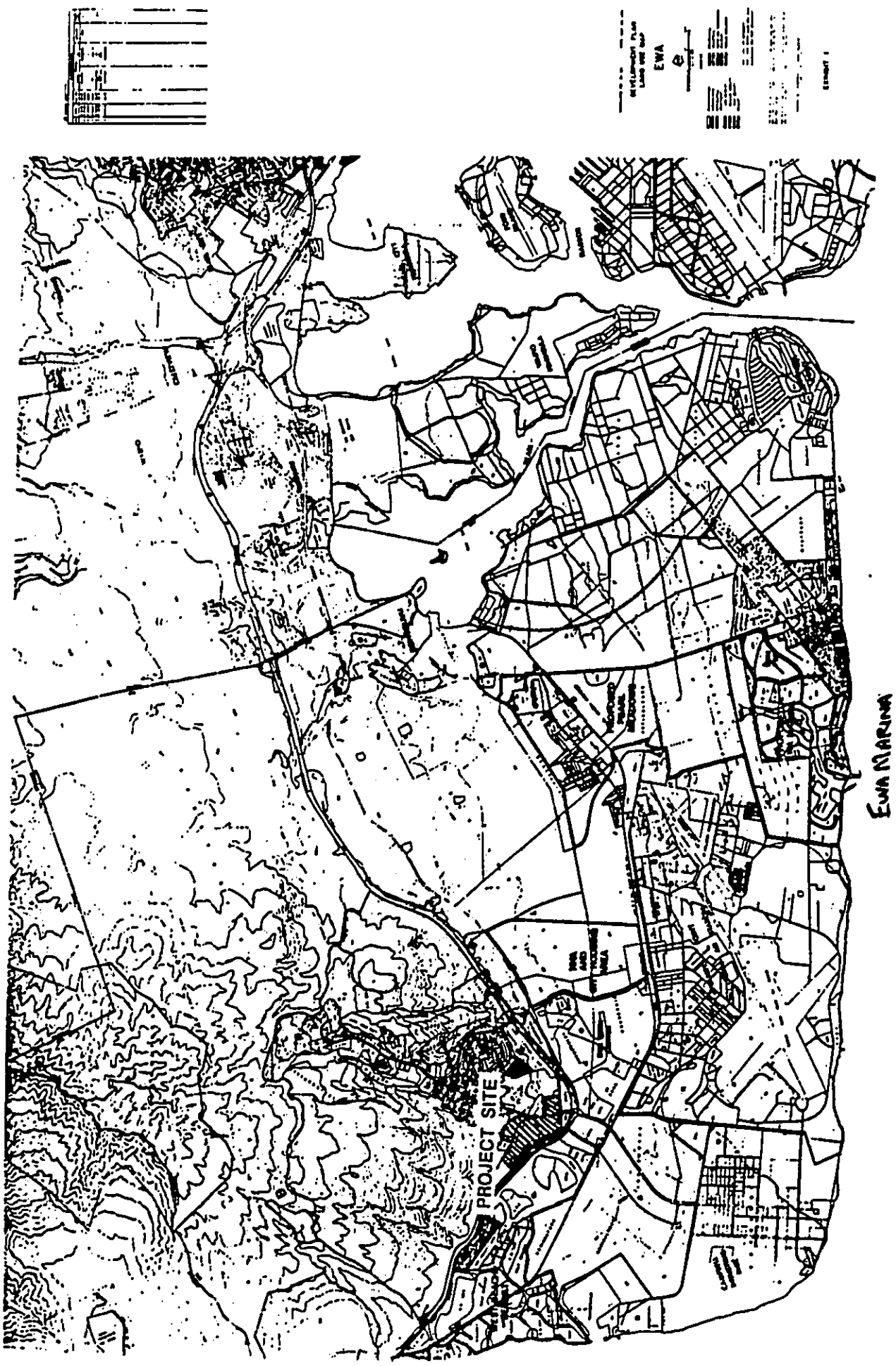
Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh
Enclosure: 4,000 scale Ewa DP Land Use Map

cc: Department of General Planning


EWA MARINA
PROJECT SITE

DGP 2/87 SF2

University of Hawaii at Manoa

Water Resources Research Center
Holmes Hall 283 • 2540 Dole Street
Honolulu, Hawaii 96822

11 February 1987

RECEIVED
FEB 2 3 1987
HELBER, HASTERT, VAN HORN & KIMURA, PLANNERS

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

Dear Mr. Clegg:

Subject: Draft Environmental Impact Statement, Resident/Visitor Entertainment Attraction, Ewa, Oahu, Hawaii, January 1987

We have reviewed the subject DEIS and offer the following comment. The document needs to go into much more detail on the pond inasmuch as the possible environmental impacts are not as simple as the DEIS would make it appear. For example, there will undoubtedly be algae growth in the pond. How will this be controlled? If chemicals are used, how will the flow affect downstream environments when the ponds are drained for cleaning, etc. and for the disposal of overflow.

There will undoubtedly be overflow if 132,000 gpd is pumped for pond makeup water as indicated in Table 9, p. VI-6. We estimate about 42,850 gpd will be needed to offset evaporation losses from 8 acres of open water using 80 percent of 90 inches pan evaporation per year. Thus, 132,000 gpd makeup water exceeds evaporation loss by 3 times. Incidentally, the 132,000 "gpd" quoted above from p. VI-6, Table 9 is shown as 132,000 "mgd" in Appendix B, p. B-3.

Another factor is that if just enough makeup water is added to replace evaporation losses (no overflow), the pond will become saltier over time. If allowed to concentrate excessively, the resulting brine will be deleterious to the environment as well as the groundwater if drained through the storm drainage system. What will be done to avoid or mitigate this possibility?

Thank you for the opportunity to comment. This material was reviewed by WRRC personnel.

Sincerely,

Edwin T. Murabayashi
EIS Coordinator

ETM:jm

AN EQUAL OPPORTUNITY EMPLOYER

XI-26

HELBER, HASTERT, VAN HORN & KIMURA, Planners
HHM&K

March 6, 1987

Mr. Edwin T. Murabayashi, EIS Coordinator
University of Hawaii at Manoa
Water Resources Research Center
Holmes Hall 283
2530 Dole Street
Honolulu, Hawaii 96822

Dear Mr. Murabayashi:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 11, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Our comments are as follows:

1. The EIS needs to go into much more detail on the potential environmental impacts of the proposed lagoon.

A new Section 2.3.4 has been added and contains a discussion of the lagoon system. Potential hydrological impacts are also addressed in Section 4.6.3. We note that the planning for the lagoon system is still at a conceptual level, appropriate with the level of detail required for Development Plan amendment applications. Detailed engineering studies for the design of the lagoon system will be conducted at a later stage.

2. Overestimation of make up water for the lagoon system.

The initial estimate of 132,000 gpd for pond make up is excessive as you note. Calculations conducted after receiving your response indicate a range in pond make up water of between 44,800 gpd in the winter months to 69,600 gpd in the summer months. For planning purposes, we have adjusted the pond make up water requirement to 70,000 gpd - representing the maximum seasonal variation. References in the EIS have been changed accordingly.

3. Gradual buildup of salt within the lagoon system and potential environmental impacts associated with disposing of pond water should be discussed.

As now noted in Section 4.6.3, the amounts of water involved, and the low salinity of the source water indicate that disposal of pond water will have a negligible effect on groundwater conditions.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

John Waihee

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
465 SOUTH KING STREET, ROOM 104
HONOLULU, HAWAII 96813

TELEPHONE NO.

February 3, 1987

RECEIVED
FEB 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

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

Dear Mr. Clegg:

Subject: Draft EIS for Resident/Visitor Entertainment Attraction, Ewa, Oahu

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

1. The sources of potable and non-potable water should have been established prior to the filing of a draft EIS. The commitment for water to the project seems very tentative at the present time. A number of large projects are planned in the project's surrounding area and they will be competing for the same water. The Pearl Harbor Basin from which most water in the area is obtained is at low levels such that restrictions have been placed on water removal.

2. Palailai Landfill is located near the project. Although the landfill will be closed shortly, there may be residual effects from the landfill such as odors, rainfall runoff and leachates which may affect the project. These impacts should be discussed.

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

Sincerely,

John C. Lewin, M.D.
Director of Health

cc: Helber, Hastert, Van Horn & Kimura

X1-27

HELBER, HASTERT, VAN HORN & KIMURA, PLANNERS
HHVK
Geographic Center of the Pacific

March 6, 1987

Mr. John C. Lewin, M.D.
Director of Health
State of Hawaii
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Dr. Lewin:

Final Environmental Impact Statement (FEIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 3, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Our comments are as follows:

1. Sources of potable and non-potable water should have been discussed in the FEIS.

The source of non-potable water was discussed in Section 6.4. The Pump 10 wells operated by Oahu Sugar Company will provide the non-potable water needs of the project. Potable water commitment for the site will either be provided by the Campbell Estate (as noted in the FEIS) or from the Honolulu Board of Water Supply. (February 6, 1987 communication from BWS to DGP). The actual sources of potable water will be from wells operated by the BWS with the approval of the Department of Land and Natural Resources.

2. Proximity of Palailai landfill and potential for residual adverse impacts should be discussed in the EIS.

These concerns are now addressed in Section 4.2.4 of the FEIS.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

STATE OF HAWAII
DEPARTMENT OF PLANNING
AND ECONOMIC DEVELOPMENT

• • •

LAND USE COMMISSION

Room 104, Old Federal Bldg., 335 Merchant Street
Honolulu, Hawaii 96813 Telephone 548-4611

JOHN WAIHEE
Governor

TUOFILO PHIL TACBIAN
Chairman

FREDERICK P. WHITTEMORE
Vice Chairman

COMMISSION MEMBERS

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Winona E. Ruder
Tara Sueoka
Robert S. Tamaye
William W. L. Yuen

ESTHER UEDA
Executive Officer

January 26, 1987

RECEIVED
JAN 27 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

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

Dear Mr. Clegg:

Subject: Draft Environmental Impact Statement for Resident/ Visitor Entertainment Attraction at Ewa, Oahu, TMK No. 9-1-15: por. 5, por. 17; 9-1-16: por. 9

We have no comments to offer except to point out that the Land Use Commission has not received any petition to reclassify lands as indicated on page IV-5, Section 4.2.2, of the draft EIS.

Thank you for this opportunity to comment.

Sincerely,

ESTHER UEDA
Executive Officer

EU:to

cc: Mr. Thomas A. Fee,
Helber, Hastert, Van Horn and Kimura

XI-28

March 6, 1987

Ms. Esther Ueda
Executive Officer
Department of Planning and Economic Development
Land Use Commission
335 Merchant Street, Room 104
Old Federal Building
Honolulu, Hawaii 96813

Dear Ms. Ueda:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of January 26, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

The Estate of James Campbell will be submitting the referenced petition in the near future. The correction has been made to Section 4.2.2 of the EIS.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

PB 87-101

February 5, 1987

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

FROM: HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT EIS
RESIDENT/VISITOR ENTERTAINMENT ATTRACTION
EWA, OAHU

We have reviewed the draft EIS for the subject project and have no comments.

Thank you for the opportunity to review the draft EIS.

HERBERT K. MURAOKA
Director and Building Superintendent

TH:ly
cc: Thomas A. Fee
J. Harada

XI-29

HELBER HASTERT VAN HORN & KIMURA Planners
HHVH&K

March 6, 1987

Mr. Herbert K. Muraoka
Director and Building Superintendent
Building Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Muraoka:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 5, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

1455 S. BERETANIA STREET, ROOM 305
HONOLULU, HAWAII 96814

FRANK F. FASI
MAYOR

RECEIVED
FEB 2 1987
HELBER, HASTERT & KIMURA
PLANNERS - HONOLULU, HAWAII

FRANK R. KAHOOHANOHANO
FIRE CHIEF

LIONEL E. CAMARA
DEPUTY FIRE CHIEF

February 19, 1987

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

FROM: FRANK K. KAHOOHANOHANO, FIRE CHIEF

SUBJECT: EIPN: VISITOR/RESIDENTIAL ENTERTAINMENT ATTRACTION, EWA, OAHU
TMK 9-1-15: Por 5 & 17; 9-1-16: Por 9

Thank you for the opportunity to review and comment on the EIS subject project. We have no additional comments to offer at this time.

FRANK K. KAHOOHANOHANO
Fire Chief

FKK/JS:sb

cc: Mr. Thomas A. Fee, Project Planner
Helber, Hastert, Van Horn and Kimura

XI-30

March 6, 1987

Mr. Frank K. Kahoohanohano, Fire Chief
Fire Department
City and County of Honolulu
1455 S. Beretania Street, Room 305
Honolulu, Hawaii 96814

Dear Mr. Kahoohanohano:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 19, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

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

FRANK F. FASI
MAYOR

RECEIVED
MAR - 1987
HELBER, HASTERT, FEE AND KIMURA
& KAMOKILA PLANNERS

DONALD A. CLEGG
CHIEF PLANNING OFFICER

GENE CONNELL
DEPUTY CHIEF PLANNING OFFICER

CAP/DGP 1/87-253
87/E-1

March 5, 1987

Mr. Thomas Fee
Helber, Hastert, Van Horn & Kimura, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

This is in response to your draft EIS for the Ewa Resident/Visitor Entertainment Attraction.

We have reviewed the EIS and letters of comment which we have received from other agencies. In addition to the issues which we normally review, we find the comments listed below are particularly significant in evaluating your request to amend the Development Plan. Our review of your final EIS will pay particular attention to how you propose to mitigate these issues:

1. Noise from aircraft flying in the Barbers Point NAS traffic pattern.

2. Relocation of the HECO 138KV line.

3. Comments from the Water Resources Center and others concerning the pond.

4. The timing of the provision of wastewater disposal facilities, especially expansion of the Honouliiu WTP.

5. Impacts of methane gas and leachates from the Puu Palailai landfill.

6. Alternative sites.

7. Water sources to be used, the competing uses for available water, and additional approvals required to obtain the necessary water.

8. Archaeological resources.

All of these issues are included in letters of comment which you have received from other agencies.

If you have any questions please contact Mr. Charles Prentiss at 527-6073.

Sincerely,

DONALD A. CLEGG
Chief Planning Officer

March 6, 1987

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

Dear Mr. Clegg:

Final Environmental Impact Statement (FEIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of March 5, 1987 regarding the referenced report. Although your comments were issued on March 5, 1987 (and received the following day), ten days after the end of the thirty-day public agency review period, we will endeavor to respond to them in the short time provided us.

Our comments are as follows:

1. Noise from aircraft flying in the Barbers Point NAS traffic pattern.

A significant amount of information is available about potential aircraft noise in the Ewa area. As noted in Section 4.8.1.2 of the EIS, the U.S. Navy and Campbell Estate have prepared aircraft noise studies of the Ewa Plain. Although there are considerable difference between the two reports, both clearly indicate that the proposed activity is a "compatible land use".

Notwithstanding the noise study findings, the applicant is aware of the air traffic in the area and will take this into account in designing the proposed attraction.

2. Relocation of the HECO 138-KV line.

As noted in Section 6.8.3.1, the 138-KV line that traverses the project site must be relocated to a new easement at or adjacent to the boundary of the project. The applicant is coordinating activities with HECO through its consulting electrical engineer. The applicant has acknowledged its responsibilities of bearing the costs of relocating the transmission line and the requirement of providing access to HECO facilities at all times (See letter to HECO dated March 6, 1987 reproduced in Chapter XI).

3. Comments from the Water Resources Research Center and others concerning the pond.

We have addressed the general concerns about the lagoon/pond system within the EIS text. Section 2.4.4 discusses the lagoon system, and Section 4.6.3 discusses potential hydrological impacts of the lagoon system. Specific concerns have been

addressed in our response to particular agency comments which are reproduced in Chapter XI of the FEIS.

A major factor that must be considered when reviewing these issues is the preliminary and conceptual nature of the overall project design. As more engineering information becomes available (exact size and depths of lagoon system, type of recirculation system, type of lining membrane, filtering system, etc.) we will be able to refine our initial impact analyses - with input from expert consultants and interested public agencies.

4. The timing of the provision of wastewater disposal facilities, especially expansion of the Honouliuli WWTP.

Our engineering consultant (Community Planning, Inc.) is coordinating development activities with the Department of Public Works (DPW). As we noted in our response to DLU comments (Chapter XI), DPW has indicated that the Honouliuli WWTP has sufficient capacity to treat the wastewater generated by the proposed action.

5. Impacts of methane gas and leachates from the Palailai Landfill.

A discussion of these potential impacts has been added to Section 4.2.4 of the FEIS. Basic conclusions of the analysis indicate that these conditions will not adversely impact the proposed action.

6. Alternative Sites

At the request of the Department of Agriculture, a brief discussion of the alternative site analysis used by the applicant in locating the present site is presented in a new Section 7.1 of the FEIS.

7. Water sources to be used, the competing uses for available water, and additional approvals required to obtain the necessary water.

As noted in Section 6.4.3, the project's water demands will not impact the water resources in the area. Non-potable water will be supplied from within the existing allocations of Oahu Sugar Company from the Pump 10 wells. Potable water will be provided from within theexisting allocations of Campbell Estate or the Honolulu Board of Water Supply.

The water resources in the Ewa area are becoming more abundant over time with declining agricultural pumpage. As noted in the report, Pump 10 wells were formerly producing at a rate of 14 mgd. Pumpage rates are now down to 5 mgd. Currently, the Waianae subzone of the Pearl Harbor Groundwater Control area (which encompasses the Ewa area) has a sustainable yield of 30 mgd with an unallocated amount of 6.36 mgd. As agricultural operations continue to reduce pumpage [due to advances in irrigation technology (i.e., drip irrigation) and consolidation of farm operations], more water will become available for other uses. The major problem facing Ewa water users is one of source, storage and transmission costs, not the fact that the resource is scarce.

8. Archaeological Resources

Concern was raised by the University of Hawaii Environmental Center about the appropriateness of using "Preliminary Archaeological Reports" at the "Draft EIS stage". As noted in our response to their concern, the use of the work "preliminary" in the title of the archaeological reconnaissance survey conducted on the site may have been misleading. In fact, the study represents the final findings and conclusions of the consulting archaeologist. The study found that no archaeological remains are known to exist within the project area. The State Historic Sites office has reviewed the report (Appendix D) and concurs with its findings (personal communication with Ms. Joyce Bath, Archaeologist, State Historic Sites Office, March 2, 1987).

We hope these comments will assist you in your review of the FEIS. We intend to file this document with OEQC and your department on March 9, 1987. Your comments together with our response will be reprinted in the FEIS.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE 523-4161

FRANK F. FASI
MAYOR

MICHAEL M.H. MOON
DIRECTOR

ROBERT MIYABATO
DEPUTY DIRECTOR

January 29, 1987

MEMORANDUM

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

FROM: Mike Moon

SUBJECT: Draft Environmental Impact Statement
Resident/Visitor Entertainment Attraction
Ewa, Oahu

RECEIVED
FEB / 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

XI-34

We appreciate the opportunity to review the draft Environmental Impact Statement (EIS) for the proposed Visitor/Resident Entertainment attraction.

We note that the proposed project will require an eventual rezoning action in addition to the Development Plan amendment presently being requested. Current City policy has been to impose a set-aside of affordable housing units in residential projects for which rezoning actions are requested. Whereas this policy has up to now only affected residential projects, 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 Visitor/Resident Entertainment Attraction could be affected by the change in policy. The Department will inform the developer of any requirements should the Community Benefit Assessment bill be enacted.

Thank you for the opportunity to provide these comments.

MIKE MOON
Director

cc: Mr. Thomas A Fee
Helber, Hastert, Van Horn & Kimura

REMARKS

March 6, 1987

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

Dear Mr. Moon:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of January 29, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

We appreciate your offer to keep us informed of the status of the Community Benefit Assessment bill.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 523-4432

FRANK F. FASI
MAYOR

JOHN P. WHALEN
DIRECTOR

LU1/87-309(AC)

February 20, 1987

RECEIVED
FEB 24 1987
BELLAZ, MUNEKIYO, FAIA HIGUCHI & KIMURA PLANNERS

MEMORANDUM

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

FROM: JOHN P. WHALEN, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT, JANUARY 1987
"VISITOR/RESIDENT ENTERTAINMENT ATTRACTION"
REQUESTED DEVELOPMENT PLAN CHANGE FROM RESIDENTIAL, LOW DENSITY APARTMENT, MEDIUM DENSITY APARTMENT AND AGRICULTURAL TO COMMERCIAL; EWA, OAHU
TAX MAP KEYS 9-1-15: PORTION 05, PORTION 17; 9-1-16: PORTION 09

The Department of Land Utilization (DLU) has reviewed the Draft Environmental Impact Statement, January 1987 and has the following questions and comments which should be addressed in the preparation of the Final EIS:

A. Noise

The Draft EIS discusses the issue of noise compatibility of the proposed attraction with existing residential developments by stating that extensive landscaping and berming will shield noise generated by the park and associated traffic. The Final EIS should contain specific noise level studies which provide quantitative supporting evidence that the proposed landscaping and berming contemplated by the developer will prove sufficient as a mitigative measure in abating potential noise impacts to nearby residential communities.

B. Traffic

The Traffic Impact Report (Appendix E of the EIS) provides a thorough analysis of the traffic circulation problems and solutions associated with the proposed entertainment attraction. The EIS should, in addition, discuss the project's

share of the cumulative traffic impacts on the Honolulu bound H-1 Highway, assuming full build-up of West Beach, Ewa Marina, Ewa Plantations and the Makakilo Shopping Center.

C. Wastewater Disposal

The EIS states that a proposed sewer main will be sized to accommodate flows from the project and that the developer proposes to pay its proportionate share for expansion of the Honouliuli Wastewater Treatment Plant (WTP). Will the WTP expansion plans coincide with the construction schedule of the developer? If not, what interim measures will be taken to provide sewage disposal?

D. Solid Waste

The EIS should discuss the potential impacts (migration of methane gas and leachate) from the adjacent Puu Palailai Landfill site.

We hope these comments will be helpful to you in the final preparation of the EIS. If you have any questions, please contact Art Challacombe of our staff at 523-4648.

Very truly yours,

JOHN P. WHALEN
Director of Land Utilization

JPW:sl
0763B

cc: Thomas A. Fee

March 6, 1987

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

Dear Mr. Whalen:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 20, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Our comments are as follows:

A. The EIS should provide quantitative evidence that the use of landscaping and berming will prove sufficient as a mitigative measure in abating potential noise impacts to nearby residential communities.

As noted in Section 4.8.3 of the EIS, all development will be designed and constructed to comply with the noise provisions of Title 11, Administrative Rules Chapters 42 and 43 and the City and County of Honolulu Land Use Ordinance.

Our accoustical engineer has evaluated the noise issue and concluded that there will be no adverse impacts on the existing communities of Makakilo of Honokai Hale/Nanakai Gardens - with or without the use of landscaping or berming.

B. The EIS should discuss the project's share of the cumulative traffic impacts on Honolulu bound H-1 Freeway.

Traffic generated by the project would be less than five percent of existing volumes on H-1. Your comment expresses a concern for peak period conditions on H-1, Honolulu bound; the proposed project is not expected to have any impact on townbound traffic during the morning peak period. The Ewa Town Center traffic study indicated that full development of West Beach, Ewa Marina, and Ewa Plantations would occur beyond year 2005 and even with partial development, a reversal of traffic demands would occur, resulting in an easing of the increasing morning townbound demand.

C. Will the Honouliuli WWTP expansion correspond with the construction schedule of the developer?

The Department of Public Works indicates that the Honouliuli WWTP has sufficient capacity to treat the wastewater generated from the proposed action. No interim measures are necessary.

D. The EIS should discuss the potential impacts from the adjacent Puu Palailai Landfill site.

Your comment is noted. A discussion of the potential impacts of the Palailai Landfill site are now presented in Section 4.2.4 of the FEIS.

Your comments together with this response will be reprinted in the Final EIS.

Sincerely

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

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

FRANK F. FASI
MAYOR

Hiram K. Kamaka
DIRECTOR

January 26, 1987

RECEIVED
JAN 29 1987
HELBER, HASTERT, VAN HORN & KIMURA
PLANNERS

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

FROM: HIRAM K. KAMAKA, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
RESIDENT/VISITOR ENTERTAINMENT ATTRACTION
EWA, OAHU, HAWAII

XI-37

We have reviewed the DEIS and have no objections to development of the proposed Resident/Visitor Entertainment in Ewa.

However, we would like to point out that there is a neighborhood park proposal located in proximity to the project site which is being considered in the Development Plan Annual Review for Fiscal Year 1986-87. In the event that the "entertainment attraction" project is implemented, the proposed neighborhood park project should be removed from consideration in the Development Plan Annual Review.

Thank you for the opportunity to review the DEIS.

HIRAM K. KAMAKA, Director

HKK:ei

cc: Mr. Thomas A. Fee - Helber, Hastert, Van Horn and Kimura

March 6, 1987

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

Dear Mr. Kamaka:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of January 26, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

After discussing the proposed neighborhood park with your staff, we understand that this is a procedural matter which will be handled by the Department of General Planning at the appropriate time.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96814 · AREA CODE (808) 943-3111

FRANK F. FASI
MAYOR

DOUGLAS G. GIBB
CHIEF

MARVIN FERREIRA
DEPUTY CHIEF

OUR REFERENCE DI-LK

January 29, 1987

RECEIVED
FEB 2 1987
HELBER, HASTERT, FEE & KIMURA PLANNERS

TO: DONALD CLEGG, CHIEF PLANNING OFFICER
DEPARTMENT OF GENERAL PLANNING

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

SUBJECT: RESIDENT/VISITOR ENTERTAINMENT ATTRACTION, EWA, OAHU

XI-38

We have reviewed the draft EIS on the Resident/Visitor Attraction at Ewa, Oahu. The redesignation of the 106-acre from the present Residential, Low Density Apartment, Medium Density Apartment and Agriculture Development Plan (DP) designations to Commercial DP and completion of the development will significantly impact upon the services provided by the Honolulu Police Department. We anticipate that there will be an increase in the number of calls for service and traffic-related incidents in excess of the capacity of our present resources. However, given additional resources, we should be able to provide adequate service to the area.

for DOUGLAS G. GIBB
Chief of Police

cc: Mr. Thomas A. Fee
Project Planner

March 6, 1987

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

Dear Mr. Gibb:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of January 29, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

We appreciate your concerns regarding the impact of the proposed action on the provision of police services in the project vicinity. The implementation of the secondary urban center concept of the General Plan and the attendent doubling or trebling of the Ewa population base (as projected by DGP) will require a significant expansion of police services and facilities into the Ewa area.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

X1-39

ENV 87-19

February 4, 1987

RECEIVED
FEB 6 1987
HELBER, HASTERT, VAN HOEK & KIMURA PLANNERS

MEMORANDUM

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

FROM: ALFRED J. THIEDE, ACTING DIRECTOR AND CHIEF ENGINEER

SUBJECT: DRAFT EIS ON RESIDENT/VISITOR ENTERTAINMENT ATTRACTION, EWA, OAHU, HAWAII
(TAX MAP KEY 9-1-15: POR. OF 05, 17;
9-1-16: POR. OF 09)

We have reviewed the subject Draft EIS and have the following comments.

1. Drainage discussions are adequate at this time.

2. The proposed West Beach interceptor sewer has not been designed to accommodate flows from the proposed development.

3. The City has no plans to increase (oversize) the capacity of the interceptor sewer between Barbers Point and the treatment plant to accommodate the development. Engineers representing Campbell Estate and Hawaiian Housing Authority have been requested to discuss the matter of redesigning the interceptor sewer with engineers representing West Beach.

ALFRED J. THIEDE
Acting Director and Chief Engineer

cc: Mr. Thomas Fee, HHVH&K

HHVH&K

March 6, 1987

Mr. Alfred J. Thiede
Acting Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Thiede:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 4, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Our comments are as follows:

1. The proposed West Beach interceptor sewer has not been designed to accommodate flows from the proposed development

The consulting engineer (Community Planning, Inc.) has discussed this issue with your staff and has concluded that sufficient capacity exists in the interceptor sewer to accommodate flows from the site.

2. Engineers representing Campbell Estate and Hawaii Housing Authority have been requested to discuss the matter of redesigning the interceptor sewer with engineers representing West Beach (Community Planning, Inc.).

The consulting engineer is aware of this effort and will provide the necessary information to assure that the interceptor sewer is sized to accommodate flows generated from the proposed attraction.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

DGP 2/87 600

DEPARTMENT OF TRANSPORTATION SERVICES

CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

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'87 FEB 23 PM 3:34
DEPT. OF GENERAL PLANNING
C & C HONOLULU

FRANK F. FASI
MAYOR

JOHN E. HIRTEN
DIRECTOR

JOSEPH M. MAGALDI, JR.
DEPUTY DIRECTOR

TE-368
PL1.0559

February 19, 1987

RECEIVED
FEB 23 1987
HELBER, HASTERT, KIMURA & KHAMRA PLANNERS

MEMORANDUM

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

FROM: JOHN E. HIRTEN, DIRECTOR

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT
RESIDENT/VISITOR ENTERTAINMENT ATTRACTION
EWA, OAHU, HAWAII
TMK: 9-1-15: POR. 05 AND 17
9-1-16: POR. 09

X1-40

This is in response to the Office of Environmental Quality Control's letter dated January 20, 1987.

We have reviewed the subject document and generally agree with the conclusions in the traffic impact report. However, the Kalaeloa off-ramp may experience some congestion from traffic exiting the H-1 Freeway from Honolulu. Traffic bound for Campbell Industrial Park may experience delays and queuing may occur on the ramp due to project bound vehicles. Improvements to the ramp and intersection may be necessary to provide a smooth flow of traffic.

If there are any questions, please contact Kenneth Hirata of my staff at 527-5009.

JOHN E. HIRTEN

March 6, 1987

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

Dear Mr. Hirten:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 19, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Our comments regarding your concern about traffic congestion at the Kalaeloa off-ramp follows.

The consulting traffic engineers' concern about possible queueing from the project entrance onto the off-ramp was one of the reasons for relocating the project's access away from the Kalaeloa interchange (See Section 6.2.2). The traffic projections indicate that a left turn lane 175 feet in length would be sufficient; the proposed 500-foot spacing would provide for a smooth flow of traffic. The relocation would also allow alternative controls at the access road intersection, should these be needed in the future.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

COPY

RECEIVED
FEB 10 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

February 6, 1987

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

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

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR RESIDENT/VISITOR ENTERTAINMENT ATTRACTION AT EWA

We appreciate the opportunity to review the environmental document for the proposed project and have the following comments:

1. AMPAC would be required to drill and develop a brackish water source to meet their non-potable water needs.

2. In regards to their potable water needs, AMPAC can develop their own source or make arrangements with us t share the cost on a pro-rata basis for well development projects which will serve that area.

3. The project is within the "no-pass zone" where ground disposal of wastewater is not permitted.

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

Kazu Hayashida
KAZU HAYASHIDA

cc: Mr. Thomas A. Fee

XI-41

HHM&K

March 6, 1987

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

Dear Mr. Hayashida:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 6, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the referenced report.

Our comments are as follows:

1. The applicant would be required to drill and develop a brackish water source.

As noted in Section 6.4.3, nonpotable water requirements of the project will be serviced by Oahu Sugar Company's existing Pump 10 wells.

2. The applicant can develop its own potable water source or make arrangments with the BWS.

Section 6.4.3 of the EIS has been revised to include the BWS as a possible source of potable water supply.

3. Project is withia "no-pass zone".

This is noted in Section 4.6.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

HAWAIIAN ELECTRIC COMPANY, INC. - PO BOX 2750 - HONOLULU, HI 96840-0001

ENV 2-1
MV/G

HEI

Brenner Munger, Ph.D., P.E.
Manager
Environmental Department
(808) 548-6880

February 13, 1987

RECEIVED
FEB 18 1987
HELBER, HASTERT, VAN HORN & KIMURA PLANNERS

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

Dear Mr. Clegg:

Subject: Environmental Impact Statement (EIS) for Resident/Visitor Entertainment Attraction

We have reviewed the above EIS and have the following comments:

1. In reference to the attached drawings (see Enclosures 1 to 3), which shows the existing Kahe-CEIP 138KV line and future 138KV line easement, the following should be used.

   - The costs of relocating any of HECO's transmission facilities shall be paid by the developer, including costs for an EIS if required for the relocation.
   - The developer should be made aware that access to HECO facilities shall be maintained at all times.

2. The first paragraph in Section 6.8.3.1 should include additional information on contractor relocations of HECO's Transmission and Distribution (T&D) facilities. If a contractor plans to relocate existing HECO T&D facilities that are on perpetual easements without relocation clauses, then the contractor must secure HECO approval on new easement location as well as pay the costs of relocation.

Sincerely,

Brenner Munger

cc: Thomas A. Fee (Helber, Hastert, Van Horn and Kimura)

A Hawaiian Electric Industries Company

X1-42

March 6, 1987

Mr. Brenner Munger, Manager
Environmental Department
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawaii 96840-0001

Dear Mr. Munger:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 13, 1987 to Mr. Donald A. Clegg, Chief Planning Officer, Honolulu Department of General Planning, regarding the refereced report.

Our comments are as follows:

1. Costs of relocating HECO transmission facilities shall be paid by the developer. Developers should be aware that access to HECO facilities shall be maintained at all times.

The applicant is aware of its responsibilities of bearing the cost of relocating HECO transmission facilities as noted in your letter. Access to HECO facilities will be maintained at all times.

2. EIS should include additional information on contractor relocations of HECO T & D facilities.

If HECO facilities on perpetual easements without relocation clauses are required to be relocated for the betterment of the proposed action, the applicant will request that HECO make the relocation with costs for the relocation being paid by the applicant. Any relocation of facilities will be made to a new easement location acceptable to HECO and applicant. Since the relocation, if any, of HECO facilities is not determined and will include HECO, it appears unnecessary to amend the EIS as suggested.

Your letter will be reproduced in the Final EIS together with this response.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

HOUSE OF REPRESENTATIVES
THE FOURTEENTH LEGISLATURE
STATE OF HAWAII
STATE CAPITOL
HONOLULU, HAWAII 96813

February 21, 1987

Mr. Thomas A. Fee
Helber, Hastert, Van Horn and Kimura
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Fee:

Re: Draft Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction,
Ewa, Oahu, Hawaii

Thank you for the opportunity to review and comment on the Environmental Impact Statement (EIS) for the above-mentioned project.

In general I am in agreement of the proposed project as it will:

1. Create Employment - With several major developments planned for the Ewa area including the Resident/Visitor Attraction, many new employment opportunities will be created in the Leeward Area.

2. Compatible with the Secondary Urban Center Concept - The Ewa Plains Area has been designated the Secondary Urban Center for the island of Oahu by the 1977 General Plan. With the Primary Urban Center nearing its capacity, it is necessary to direct the future growth of our island elsewhere. The proposed attraction will enhance the Secondary Urban Center concept.

3. Provide Entertainment/Educational Benefits- The project will create entertainment/educational benefits which will broaden and enrich both residents and visitors alike. It will also provide excellent opportunities for our students.

One concern which I would like to express is the possible adverse impact of noise both during the construction and operation of this project to the neighboring residential communities. It is requested that this be closely monitered.

Thank you for the opportunity to offer comments on subject document.

Very truly yours,

PAUL T. OSHIRO
State Representative
District 46

March 6, 1987

Mr. Paul T. Oshiro
State Representative, District 46
House of Representatives
The Fourteenth Legislature
State of Hawaii
State Capitol
Honolulu, Hawaii 96813

Dear Mr. Oshiro:

Final Environmental Impact Statement (EIS)
Visitor/Resident Entertainment Attraction
Ewa, Oahu, Hawaii
TMKs: 9-1-15: por 5 & 17; 9-1-16: por 9

Thank you for your letter of February 21, 1987 regarding the proposed action.

We certainly appreciate your support of the project for the reasons stated in your letter. The applicant, Amfac Hawaii, shares your concern about the possible adverse impact of noise generated from the site - both during construction and operational phases. Our accoustical engineer has evaluated the noise issue and concluded that there will be no adverse impacts on the existing communities of Makakilo or Honokai Hale/Nanakai Gardens. Regarding any future nearby development, Amfac has assured us that all State and County community noise standards will be met.

Notwithstanding this, the applicant will continue to closely coordinate its activities with the local Neighborhood Board, and community associations, as well as with your office and other area legislators.

Again, thank you for reviewing the Draft EIS. Your comments together with this response will be reprinted in the Final EIS.

Sincerely,

HELBER, HASTERT & KIMURA, Planners

Thomas A. Fee
Project Planner

TAF/lh

cc: Department of General Planning

APPENDICES

APPENDIX A

Authorization Letter from the Estate of James Campbell

October 16, 1986

THE ESTATE OF JAMES CAMPBELL

October 15, 1986

Mr. Richard L. Griffith
President
Amfac Hawaii, Inc.
P. O. Box 3230
Honolulu, HI 96801

Dear Mr. Griffith:

Amfac Development Plan Amendment Application

The Estate of James Campbell authorizes the submittal of the Development Plan Amendment Application for your planned visitor/resident entertainment attraction on our lands in Ewa (TMKs 9-1-16:por 09; 9-1-15:por 17, por 05). We fully support your efforts and feel that the nature of the operation you are proposing together with Amfac's commitment to operate the facility will combine to make it an integral and popular part of the Ewa Second City.

Your Development Plan Amendment Application requests redesignation of some of the proposed site from residential use to commercial use. We will request redesignation of a similar amount of land near the proposed Ewa Town Center from commercial to residential use to maintain the residential and commercial mix in the Ewa Town Center area and your support of this request is appreciated.

As you are aware, we are now beginning the process of consolidating and resubdividing approximately 120-acres of land subject to the agreement between us for the purchase of the site.

Sincerely,

THE ESTATE OF JAMES CAMPBELL

O. K. Stender
Chief Executive Officer

bie:16281

Suite 500, 828 Fort Street Mall, Honolulu, Hawaii 96813-4380 (808) 536-1961

APPENDIX B

Preliminary Engineering Analyses

Community Planning, Inc
December, 1986

PRELIMINARY ENGINEERING ANALYSIS

FOR

VISITOR/RESIDENT ENTERTAINMENT ATTRACTION

AMFAC - PALAILAI

JANUARY, 1987

B-1

COMMUNITY PLANNING, INC.
AMFAC BUILDING, SUITE 608
700 BISHOP STREET
HONOLULU, HAWAII 96813

A. STORM DRAINAGE SYSTEM

1. Existing Conditions

With exception of about 12 acres, the project site presently drains to existing culverts which cross the H-1 Freeway as indicated on the Drainage Map (Exhibit A). Areas 24, 25 and 26 shown on the Drainage Map also include about 85 acres located mauka of the project site extending to the Puu Palailai Ridge. On site, former agricultural operations established a system of open ditches to collect and transport storm drainage runoff to the culverts located under the H-1 Freeway. These culverts discharge the storm water into agricultural ditches located on the makai side of the freeway which are used by Oahu Sugar Company for cane irrigation.

The other 12 acres, Area 28, flow towards a culvert in old Farrington Highway and eventually cross the H-1 Freeway where the runoff is also used for irrigation of makai cane fields.

Runoff from intense storms which exceed irrigation requirements are conveyed by ditches to major drainage channels which extend through Campbell Industrial Park and discharge into the ocean.

2. Probable Impacts

Urban development of an agricultural area generally increases storm runoff. However, for this project, that increase can be considered insignificant since about 68 acres of the 106-acre site will either remain in its present condition, be graded and landscaped, or be used as a nursery site. Another 8 acres will be used for water ponds and lagoons. Only about 30 acres of the area will be covered by service areas, walkways, buildings, driveways and parking.

Additionally, the increased runoff, if any, will be ponded within on-site waterways for gradual discharge after storm flows. Storm runoff exiting the site will be limited by the capacity of the existing culverts located under the H-1 Freeway.

During grading and construction, the on-site pond excavations will be used as desilting areas in the event of storms during that period.

The runoff quantities and ditch/culvert hydraulics will be prepared and submitted to the appropriate City/State agencies for approval when detailed grading and construction plans are undertaken.

B. PUBLIC SERVICES AND FACILITIES

1. Water Supply

a. Existing Conditions

The project site, although undeveloped, is traversed, as shown on the Existing Water Facilities Plan, EXHIBIT B, by a 30-inch municipal water main which conveys potable water from Waipahu and Kunia to the adjacent Board of Water Supply 4 and 5 million gallon (MG) reservoirs and a 24-inch main which transports that water westerly to Honokai Hale Subdivision and Nanakuli/Waianae. Both water mains are located in the old Farrington Highway right-of-way. Water in the 30-inch pipeline can service to the 115-foot elevation; whereas, the 24-inch pipeline has adequate pressure to accommodate development up to the 142-foot elevation.

In addition to having storage capacity for Honokai Hale and Nanakuli/Waianae, the 4 and 5 MG reservoirs have some capacity for future development of the Campbell Industrial Park. This capacity was developed when Campbell Estate constructed the 5 MG reservoir.

Located about 2,500 feet southwest of the project site is Oahu Sugar Company's existing Pump 10 wells and pump station which formerly were used to irrigate cane grown on the project site as well as nearby existing cane fields. Pump lines for the non-potable (brackish) water still link the on-site open pond with the water source at Pump 10.

b. Future Conditions

Within the next two and five years, West Beach Estates proposes to construct two 3 MG potable water reservoirs adjacent to and mauka of the existing 4 and 5 MG reservoirs for their resort project. A new 24-inch potable water main is also planned within old Farrington Highway to convey the water westerly to the resort.

Also planned for West Beach are two 1.5 MG non-potable water reservoirs and four deepwell sources to be located at the approximate 200-foot elevation between Honokai Hale and the project site. Non-potable water (brackish water) will be conveyed westerly to the resort in a new 16-inch transmission main.

c. Probable Impacts

For service to the project, a dual water system is proposed. Potable water would be used for drinking, food preparation, washing within buildings and fire protection. On the other hand, non-potable water (brackish water up to 800 parts per million of chlorides) would be used for planned waterways, irrigation of landscaping and plant nursery, urinals and water closets.

Based on LARC's experience with entertainment facilities of this nature, the estimated potable water demand is 70,000 gallons per average day (gpd), and the non-potable demand is 294,000 gpd. The demand includes the following:

Potable (Drinking, meal preparation and in-building washing)	70,000 gpd

Non-Potable		
Urinals and water closets	110,000 gpd	
Make-up water for ponds, etc.	132,000 gpd	
Wash-down water	8,000 gpd	
Irrigation	44,000 gpd	
		294,000 gpd
Total Potable and Non-Potable Water Demand		364,000 gpd

The project's water demand will not impact the water resources in the area. For the non-potable system, Oahu Sugar Company will provide brackish water from its Pump 10 wells within OSCO's present State water source allocation. For irrigation and pond make-up water purposes, the water will be pumped into the on-site open reservoir for storage. The urinals, water closet and wash-down water, on the other hand, will be provided at the required pressure by an in-line booster pump.

Use of brackish water on the project site should have an insignificant hydrologic impact since the area was formerly irrigated from the same source and the general area's underground acquifer water has, in previous explorations, proven to be non-potable. The impact will be further reduced by planned lining of the water ponds and lagoons.

For potable water, the project's demand of 70,000 gpd will be provided from existing allocations and resources of Campbell Estate or, if source is unavailable, by arrangements with the Honolulu Board of Water Supply. A portion of the source and storage facilities for the future development of Campbell Industrial Park can, however, be reallocated, with appropriate governmental approval, to this project. Since these existing facilities are already built and presently under Board of Water Supply operation and control, the developer, at the appropriate time, can request that Board of Water Supply provide the water at its prevailing rate for such service.

It is further proposed that the fire protection facilities (fire hydrants, etc.) be connected to the nearby Board of Water Supply potable water system which has adequate water storage and pressure for that purpose.

Detailed construction plans for the dual water system, ponds and lagoons will be submitted after land use amendment approvals for appropriate governmental review and approval. Campbell Estate's Ewa Water Master Plan will be updated to include this project at this time also.

2. Sanitary Sewage Disposal

a. Existing Conditions

The project site is currently undeveloped and, therefore, no sewage disposal facilities are located nearby.

As shown on the Existing Wastewater Facilities Plan, EXHIBIT C, the nearest existing sewage disposal system is the Makakilo Interceptor which is located about 4,000 feet on the westerly side of the project site.

b. Future Conditions

Additionally, a new interceptor sewer, as shown on the Existing Wastewater Facilities Plan, EXHIBIT C, is planned for construction within the next two years by West Beach Estates. The interceptor is presently sized to accommodate wastewater flows from the ultimate resort project as well as with additional capacity for other tributary Campbell lands. The oversizing was made at the request and cost of Campbell Estate.

The new interceptor sewer will initially connect at Barbers Point Access Road to the existing Makakilo Interceptor Sewer which presently transports the collected wastewater to the municipal Honouliuli Wastewater Treatment Plant. Upon nearing the capacity of the Makakailo Interceptor, West Beach Estates planned to construct a parallel new interceptor sewer with capacity to accommodate the ultimate resort project and similar oversizing for

Campbell lands. Subsequently, other developers have indicated their intention to further oversize the Barbers Point to Honouliuli Wastewater Treatment Plant Interceptor Sewer to accommodate other Campbell lands presently planned for government housing and the Ewa Second City.

The City has also indicated that the 25 MGD capacity of the Honouliuli Wastewater Treatment Plant has already been committed to present and planned projects. They also note that planning for expansion of the plant is underway with funding to be probably provided by assessment of new developments.

c. Probable Impacts

Again, based on LARC's experience with entertainment facilities of this nature, the estimated wastewater is 180,000 gpd.

For disposal, the developer proposes to construct, at their cost, a sewer main from the project site to the planned new West Beach interceptor sewer which was oversized to accommodate this and other developments of the nearby Campbell lands. The alignment and size of the new sewer main will be established later when detailed construction drawings are prepared. The sewer main will be designed and constructed to City and County Standards.

The developer also proposes to pay their proportionate share or assessment as established by the City for the construction of the new Barbers Point to Honouliuli Wastewater Treatment Plant Interceptor Sewer as well as any expansion to the treatment plant, thus allowing the wastewater generated by the project to be conveyed, treated at Honouliuli and effluent discharged off the Ewa Coast.

Detailed computations of the project's wastewater requirements will be prepared and submitted for City review and approval after plans for restaurants, comfort stations, etc. are established and prior to completion of the new sewer main construction drawings.

3. Electric and Communication Services

a. Existing Conditions

The project site is essentially without utilities except for existing Hawaiian Electric 138 KV overhead lines that traverse the site. The overhead electric lines and structures are within an easement granted to the Hawaiian Electric Company. Hawaiian Electric Company's generation capacity is approximately 1,300 MW, with a present peak demand of approximately 935 MW.

Hawaiian Telephone Company does not have any facilities within the project site. A remote switching station will be required to serve the project requirements. Site requirement for the switching station is approximately 5,000 square feet. A telephone trunk line from Waipahu is proposed via Farrington Highway.

Cable television facilities do not exist on the site and must be extended from trunking cable facilities located along Farrington Highway.

b. Future Development Plans

There are no anticipated improvements of public facilities that will be in the project site or that will benefit the project development.

c. Probable Impacts

1) Electrical

The existing Hawaiian Electric Company overhead 138 KV line that traverses the project site must be relocated to a new easement at or adjacent to the boundary of the development.

The projected peak demand for this project is estimated to be 11.25 MVA. Based on the anticipated loading, Hawaiian Electric Company requires that a new substation be constructed to serve the project. Hawaiian Electric Company anticipates that the ultimate substation installation will require a 12,000 square foot lot (minimum). In addition, existing 46 KV lines must be extended to the substation site.

The necessary land acquisition and equipment procurement processing will be initiated at project inception so that a substation can be in place and ready to serve the project loads as facilities thereat are completed. Normally, Hawaiian Electric Company will pay the cost for the 46 KV overhead line extensions to the project substation. However, if a decision is made to underground the 46 KV lines, the developer will then be charged the difference in cost between an overhead and underground installation.

The substation will step down the incoming 46 KV transmission voltage to 12 KV for distribution throughout the development. 12 KV distribution feeders from the substation will be connected to service transformers located adjacent to project facilities via switching vaults provided along the 12 KV distribution feeder routes. The switching vaults will protect the distribution feeders and allow for isolation of damaged cables and redundancy to protect the development against prolonged outages resulting from the failure of any one section of the underground electrical system. Service transformers will step down the 12 KV distribution voltage to the utilization voltage required by the project facilities.

The electrical system will be an underground facility with the exception of the substation, the 46 KV and 138 KV overhead lines and structures, the switching vaults and service transformers. A network of underground ducts and handholes will be provided to facilitate cable installation. Hawaiian Electric Company will cable the underground duct system. Cables and ducts will be suitable for underground applications and, therefore, are tolerant of both wet and dry conditions.

2) Communication

Telephone cross-connect pedestals will be provided by the Hawaiian Telephone Company at various locations throughout the site to permit access and telephone service to the project facilities. In addition, Hawaiian Telephone Company will require a lot approximately 5,000 square feet in area for a remote switching station.

The telephone system will be an underground facility with the only exceptions being the remote switching station and cross-connect pedestals. A network of underground ducts and handholes will facilitate the telephone cable installation. Hawaiian Telephone Company will cable the underground duct system and make all the necessary arrangements for serving each facility's telephone requirements. Cables and ducts will be suitable for underground applications and, therefore, are tolerant of both wet and dry conditions.

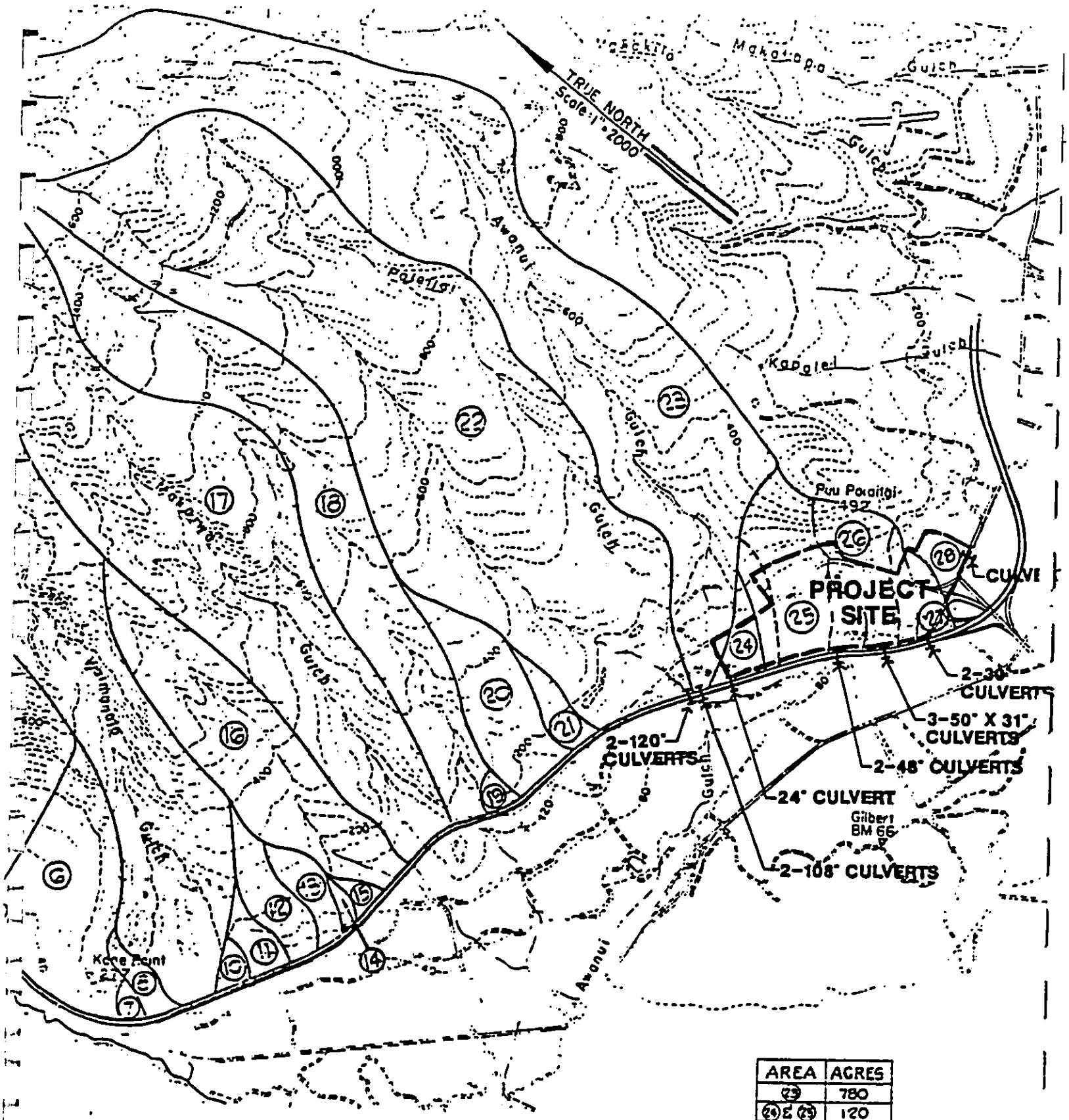
3) Summary

Electrical and communication improvements necessary to support the requirements of this project can be served from existing utility systems, with some off-site work required. In general, the off-site improvements required for the development are an ongoing activity for the utility companies and should not create an undue hardship for the respective utilities. Furthermore, this development will require that the electrical and communication utility systems be constructed and maintained according to approved utility standards.

Relocated 138 KV overhead lines will be installed similar to the existing facilities, and 46 KV overhead extensions to the project substation will be constructed following standard utility company practices. Furthermore, because Hawaiian Electric Company must maintain the lines and structures for the purposes they were intended and to their best use, the lines will have minimal negative impact on the surrounding communities.

Telephone facilities do not require major off-site work. All off-site work will be constructed and maintained following the utility company's standard practices.

On-site facilities for the utility systems will have minimal impact on the environment. Noise, aesthetic considerations, safety hazards and loading impact will be within normally applied guidelines.



AREA	ACRES
23	780
24 & 25	120
26 & 27	68
28	12

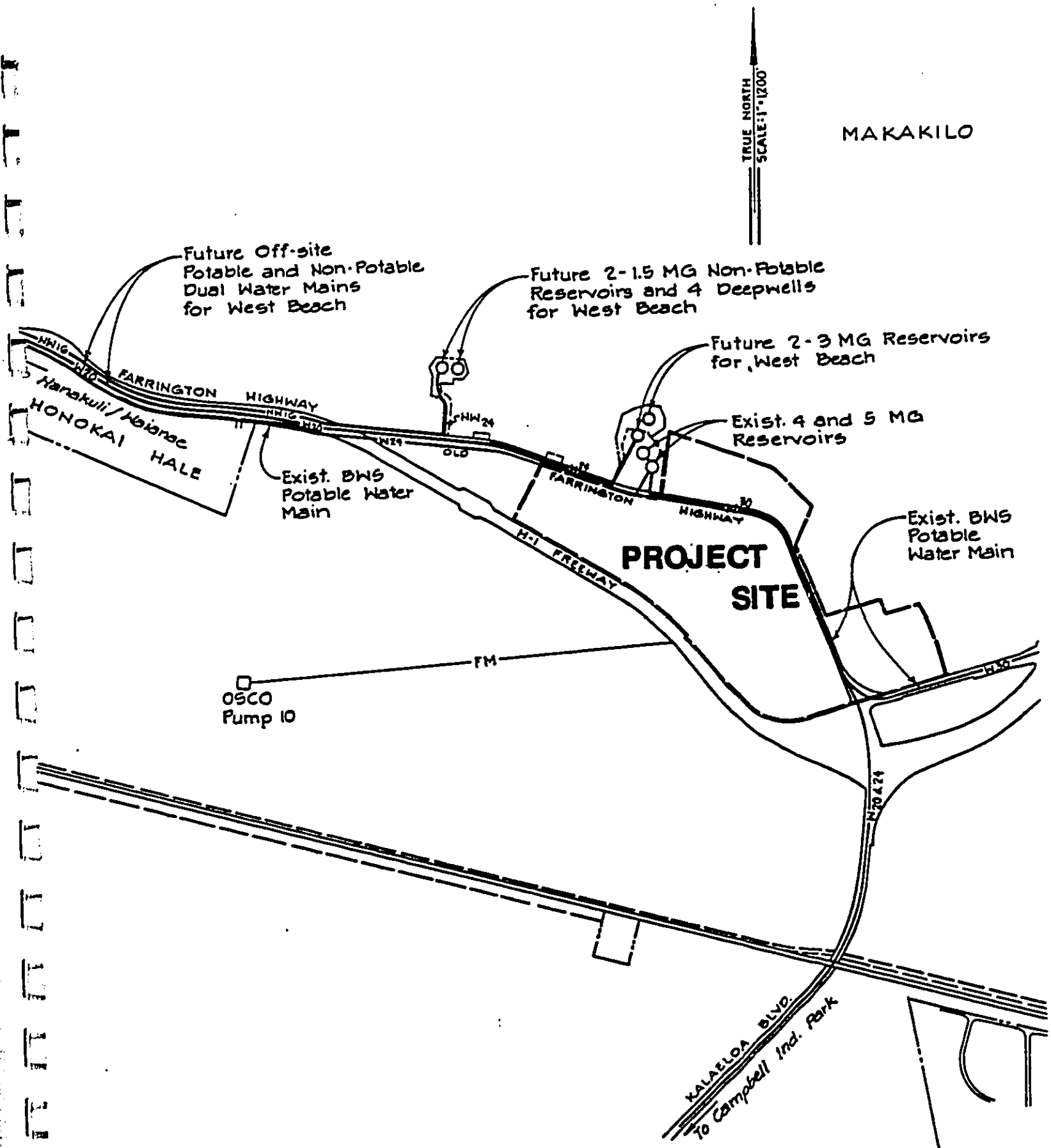
DRAINAGE MAP

AMFAC HAWAII, INC.

EXHIBIT A

COMMUNITY PLANNING, INC.

DEC. 15, 1986



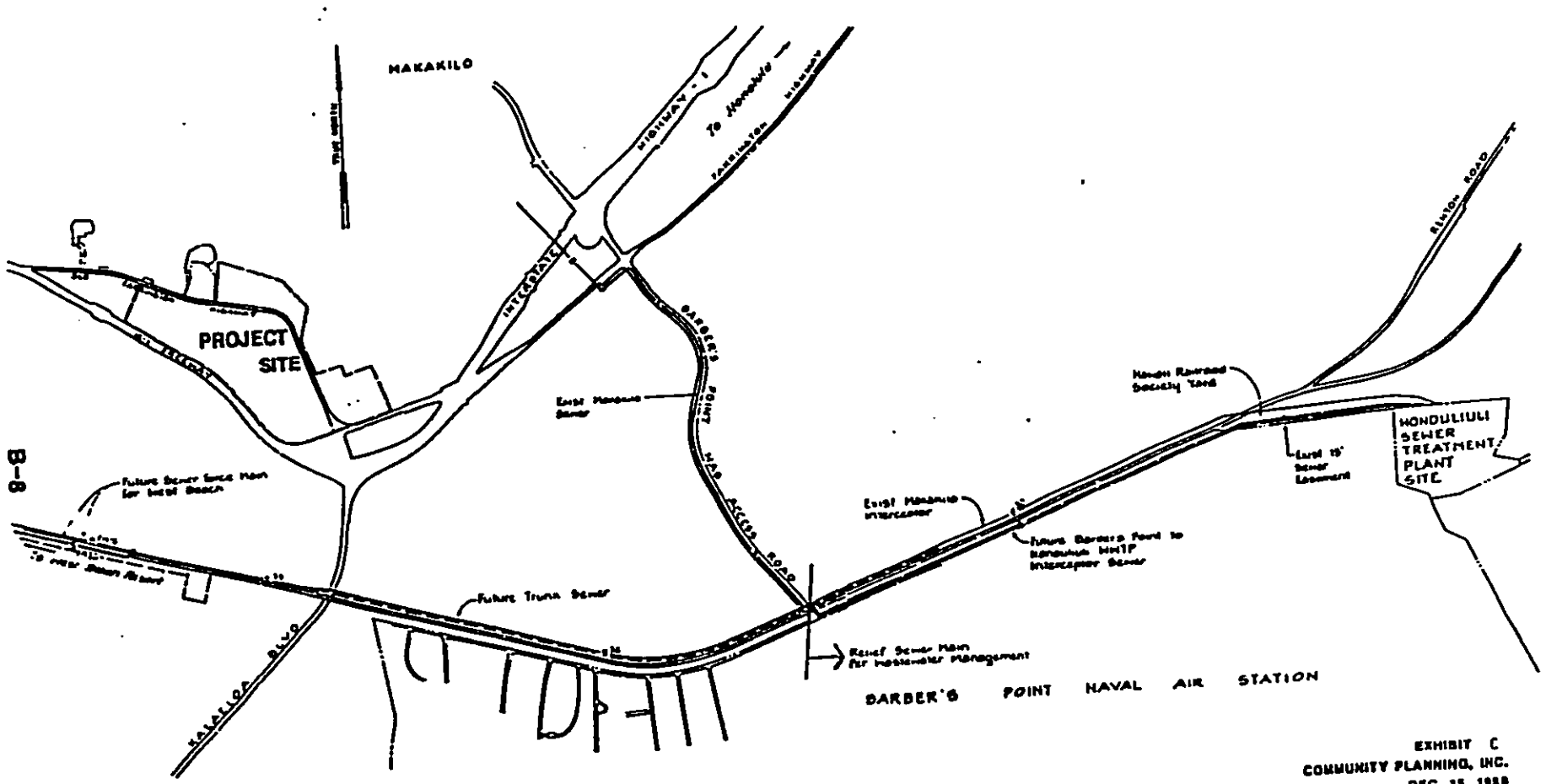
EXISTING WATER FACILITIES PLAN

AMFAC HAWAII, INC.

EXHIBIT B

COMMUNITY PLANNING, INC.

DEC. 15, 1986



EXISTING WASTEWATER FACILITIES PLAN

AMFAC HAWAII, INC.

EXHIBIT C
COMMUNITY PLANNING, INC.
DEC. 15, 1988

APPENDIX C

Biological Survey

Char & Associates
October 1986

BIOLOGICAL SURVEY

PROPOSED ± 100-ACRE AMFAC DEVELOPMENT PROJECT

'EWA DISTRICT, ISLAND OF O'AHU

by

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INTRODUCTION

The ± 100-acre AMFAC parcel proposed for development is located within the 'Ewa District of O'ahu. It is situated north of the H-1 Freeway, near Pu'u Palailai. A paved road which services a Board of Water Supply (BOWS) water tank runs midway along most of the length of the project area.

Abandoned sugar cane fields, which support a scrubland vegetation composed of a mixture of grass and small shrub species, occupies the area makai of the BOWS road. The soils in this area belong to the Lualualei-Honouliuli- Moloka'i series. They are described as level to moderately sloping, moderate to fine-textured clay soils, alluvial in nature, and overlay a substratum of coral limestone (Foote et al. 1972). Kiawe trees form an open woodland on the slopes mauka of the BOWS road.The elevation of the northern boundary, on the slopes of Pu'u Palailai, is roughly 200 feet. The soil here has been mapped as "rSY", stony steep land. Boulders and stones, as well as rocky outcrops, are frequently encountered.

A survey to inventory and describe the principal plant and animal communities found on the project area was conducted on 15 October 1986. Particular attention was paid to the less disturbed areas as these areas were more likely to harbor a greater diversity of animal species and rare native plants.

FLORA SURVEY

Introduced or alien species are the most abundant plants on the project area and are the major components of the two vegetation types found on the site. Of a total of 68 plant species inventoried on the project area, 59 (87%) are introduced; 8 (12%) are native; and 1 (1%) is of Polynesian introduction. Among the native plants, 7 are indigenous (i.e. native to the Hawaiian Islands as well as to other geographic areas) and 1 is endemic (i.e. restricted to the Hawaiian Islands).

Survey Methods

Prior to undertaking the field survey, a search was made of the pertinent literature to familiarize the principal investigator with other studies conducted in the general area.

Existing topographic maps were examined to determine access, terrain characteristics, and potential logistical and technical problems. The paved Board of Water Supply service road served as the major access onto most parts of the project site.

A walk-through survey method was used species identifications were made in the field; plants which could not be positively identified were collected for later determination in the herbarium and laboratory. Notes were made of the species present in each of the major vegetation types. The species recorded are indica-

tive of the time and environmental conditions under which the survey was conducted. A survey taken during the wetter months (November thhrough January) would no doubt yield variations in abundance ratings, especially of the annual species, as well as slight differences in the number of species inventoried.

Description of Vegetation Types

Two vegetation types can be recognized on the project area based upon differences in structure and species composition. These are the scrubland and kiave woodland.

Scrubland - More than one-half of the proposed development site consists of abandoned sugar cane fields. Oahu Sugar Company ceased farming these fields in 1982 due to the high operating costs of farming the fields relative to crop yields.

C-3

Weedy species have since invaded these fields and now form an open, low prairie structure. A few, very scattered, small clumps of sugar cane (Saccharum officinarum) can still be found. The network of canehaul roads and irrigation systems is still evident, although overgrown in many places.

Within the scrubland vegetation itself, there is a pattern of different plant associations relative to certain topographic and man-made features. Usually, the scrubland is composed of

a mixture of small shrubs, 1 to 3 feet high, and various grass species. The most abundant shrubs are 'uhaloa (Waltheria indica var. americana), 'ilima (Sida fallax), and virgate mimosa (Desmanthus virgatus). Andropogon pertusus and buffelgrass (Cenchrus ciliaris) are the most frequently encountered grasses.

Alongside the roads and the old flume, however, buffelgrass makes up 95 to 100% of the plant cover. Shrubs are uncommon to occasional in these areas.

A large reservoir, no longer in use by the sugar company, is found on the project site. Snail shells litter the bottom of the now dried reservoir which has a fine-clay soil bottom. A great variety of plant species are found here probably because the reservoir is slightly damper than the surrounding areas and accumulates runoff. Scattered patches of Californiagrass (Brachiaria mutica) , which once grew along the water's edge, are occasionally found. Young kiave trees (Prosopis pallida), 9 to 12 feet high, and shrubs of Pluchea (Pluchea odorata, Pluchea indica, Pluchea X fosbergii), Christmas berry (Schinus terebinthifolius), klu (Acacia farnesiana), and koa-haole (Leucaena leucocephala) occur in small patches within the reservoir. A few plants of sisal (Agave sisalana) can be found on the banks of the reservoir.

Kiawe woodland - The kiawe (Prosopis pallida) woodland is found on the mauka portion of the project area - - north of the Board of Water Supply service road and on the lower slopes of Pu'u Palailai. This part of the project area was used for grazing, probably cattle and horses, as there are old fencelines, stone walls, watering troughs, and corrals throughout the area.

This vegetation type is composed of 18 to 25 feet tall kiawe trees which form an open forest (30 to 40% tree cover). In some places, koa-haole (Leucaena leucocephala) forms a subcanopy layer, 12 to 15 feet tall. However, many of the koa-haole shrubs are in poor condition due to heavy infestation by a recently introduced psyllid insect (Heteropsylla poss. incisa). Buffelgrass (Cenchrus ciliaris) forms a more or less dense groundcover throughout much of this vegetation type. Shrubs and weedy annuals such as wild basil (Ocimum gratissimum), lions-ear (Leonotis nepetaefolia), West Indian begger's tick (Bidens cynapifolia), and false mallow (Malvastrum coromandelianum). are occasionally encountered. Locally common are patches of Natal redtop (Rhynchelytrum repens) and green panicgrass (Panicum maximum var. trichoglume).

In some portions of this vegetation type the structure may be more savannah-like with the kiawe trees in small clumps or

widely scattered individuals with a dense carpet of buffelgrass inbetween.

Along the fenceline which runs along the northern boundary, large, rocky, boulder-strewn areas are frequently observed. Hoary abutilon (Abutilon incanum) is locally common in such areas. One plant of the native Hawaiian cotton or ma'o (Gossypium sandvicense) can be found among the large boulders. Gossypium occurs on all the main Hawaiian Islands in lowland, leeward situations. On O'ahu it can be found scattered from 'Ewa to Ka'ena Point.

Rare, Threatened or Endangered Species

The vegetation on the project area has been disturbed and greatly modified for a long period of time. Most of the land within the project area was once actively under sugar cane cultivation until recently. The remaining portion, mauka of the Board of Water Supply service road, was used for grazing. Because of these past disturbances, introduced plant species form the major components of the two vegetation types.

No officially listed, proposed or candidate threatened or endangered species (U. S. Fish and Wildlife Service 1980) was found during the course of this survey. One plant of the native Hawaiian cotton (Gossypium sandvicense) was found in a rocky area along the northern boundary of the project area. It was

formerly considered endangered (Fosberg and Herbst 1975, U. S. Fish and Wildlife Service 1976) but the species is no longer being considered for listing as endangered or threatened by the U. S. Fish and Wildlife Service (1980) as it is more abundant then was previously believed and/or is not subject to any identifiable threat.

Plant Species List

In the plant species list which follows, families are arranged alphabetically within each of two groups: Monocotyledons and Dicotyledons. Taxonomy and nomenclature of the two groups of flowering plants follow St. John (1973) except where more recently accepted names are used. Hawaiian names used are in accordance with Porter (1972) or St. John (1973). The following information is provided:

1. Scientific name with author citation.
2. Common English or Hawaiian name, when known.
3. Biogeographic status of the species. The following symbols are used:

   E = endemic = native only to the Hawaiian Islands

   I = indigenous = native to the Hawaiian Islands and also to one or more other geographic areas

   P = Polynesian = plants of Polynesian introduction; all those plants brought by the Polynesian immigrants prior to contact with the Western world

   X = introduced or alien = not native to the Hawaiian Islands; brought here intentionally or accidentally after Western contact.

4. Vegetation types. Two vegetation types are recognized on the project area and are discussed in detail in the text. They are:

   scrub = Scrubland

   kiawe = Kiawe woodland

5. The relative abundance of each species or its absence (-) within each of the two vegetation types. These ratings reflect the abundance of a particular species within the project area and are not applicable to areas outside the project. The following symbols are employed:

   A = abundant = the major species in a given vegetation type

C = common - distributed throughout a given vegetation in large numbers

Lc = locally common - found in localized patches where it occurs in large numbers but otherwise rare to uncommon in a given vegetation type

O = occasional - distributed widely throughout a given vegetation in moderate numbers

U = uncommon - observed infrequently but more than 10 times within a given vegetation type

R = rare - observed less than 10 times in a given vegetation type.

Scientific name	Common name	Status	Vegetation types scrub	kiawe
MONOCOTYLEDONS				
AGAVACEAE (Agave Family)				
Agave sisalana Perrine ex Engelm.	sisal, malina	X	U	-
COMMELINACEAE (Spiderwort Family)				
Commelina benghalensis L.	hairy honohono	X	-	U
CYPERACEAE (Sedge Family)				
Cyperus rotundus L.	nutgrass, kili'o'opu	X	U	-
GRAMINEAE (Grass Family)				
Andropogon pertusus (L.)Willd.		X	C	Lc
Andropogon sp.		X	U	-
Brachiaria mutica (Forsk.) Stapf	Californiagrass, paragrass	X	Lc	-
Cenchrus ciliaris L.	buffelgrass	X	A	A
Chloris inflata Link	swollen fingergrass,mau-'ulei	X	C	O
Chloris radiata (L.) Sw.	radiate fingergrass	X	U	-
Cynodon dactylon (L.) Pers.	Bermuda grass, manienie	X	O	-
Digitaria ciliaris (Retz.) Koel.	crabgrass	X	R	-
Digitaria violascens Link	kukaipua'a-'uka	X	R	-
Eragrostis cilianensis (All.) Vignolo-Lutati	stinkgrass	X	O	O
Eragrostis sp.		X	U	-
Heteropogon contortus (L.) Beauv. ex R. & S.	pili, piligrass	I	-	U
Panicum maximum Jacq. var. maximum	Guinea grass, panicgrass	X	O	-
Panicum maximum var. trichoglume Eyles ex Robyns	green panicgrass	X	O	C

Scientific name	Common name	Status	Vegetation types: scrub	Vegetation types: kiawe
Rhynchelytrum repens (Willd.) C. E. Hubb.	Natal redtop	X	O	O
Saccharum officinarum L.	sugar cane, ko	P	U	-
Setaria verticillata (L.) Beauv.	bristly foxtail	X	-	O
Tricachne insularis (L.) Nees	sourgrass	X	U	-
DICOTYLEDONS				
AMARANTHACEAE (Amaranth Family)				
Achyranthes indica (L.) Mill.		X	-	U
Amaranthus spinosus L.	spiny amaranth, pakai-kuku	X	O	U
ANACARDIACEAE (Mango Family)				
Schinus terebinthifolius Raddi	Christmas berry, wile-laiki	X	R	-
CAPPARACEAE (Caper Family)				
Gynandropsis gynandra (L.) Briq.	wild spider flower, honohina	X	U	-
CHENOPODIACEAE (Goosefoot Family)				
Atriplex semibaccata R. Br.	Australian saltbush	X	U	-
COMPOSITAE (Daisy Family)				
Bidens cynapifolia HBK.	West Indian beggar's tick	X	-	O
Bidens pilosa L.	Spanish needle, ko'oko-'olau	X	-	U
Pluchea X fosbergii Cooperrider & Galang	hybrid pluchea	X	R	-

Scientific name	Common name	Status	Vegetation types: scrub	Vegetation types: kiawe
Pluchea indica (L.) Less.	Indian pluchea	X	R	-
Pluchea odorata (L.) Cass.	pluchea, shrubby flea-bane	X	O	-
Tridax procumbens L.	coat buttons	X	O	O
Verbesina encelioides (Cav.) B. & H. ex Gray	golden crown-beard	X	O	-
Xanthium saccharatum Wallr.	cocklebur, kikania	X	U	-
CONVOLVULACEAE (Morning-glory Family)				
Ipomoea cairica (L.) Sweet	koali	X	-	O
Ipomoea obscura (L.) Ker-Gawl		X	U	-
Ipomoea triloba L.	little bell	X	U	-
Merremia aegyptia (L.) Urban	hairy merremia, koali-kua-hulu	X	O	O
CUCURBITACEAE (Squash Family)				
Momordica charantia var. pavel Crantz	wild bittermelon	X	U	U
EUPHORBIACEAE (Spurge Family)				
Euphorbia geniculata Ortega	wild spurge, kaliko	X	O	O
Euphorbia glomerifera (Millsp.) L. C. Wheeler	glomerate spurge	X	U	-
Euphorbia hirta L.	garden spurge, koko-kahiki	X	O	O
Ricinus communis L.	castor bean, koli	X	U	-
LABIATAE (Mint Family)				
Leonotis nepetaefolia (L.) Ait. f.	lions-ear	X	O	O
Ocimum gratissimum L.	wild basil	X	-	U

Scientific name	Common name	Status	Vegetation types scrub	kiawe
LEGUMINOSAE (Pea Family)				
Acacia farnesiana (L.) Willd.	klu, kolu	X	U	O
Cassia lechenaultiana DC.	partridge pea, lauki	X	U	-
Crotalaria incana L.	fuzzy rattlepod, kukae-hoki	X	O	O
Crotalaria pallida Aiton		X	R	-
Desmanthus virgatus (L.) Willd.	virgate mimosa, slender mimosa	X	Lc	-
Desmodium tortuosum (Sw.) DC.	Florida beggarweed	X	R	-
Indigofera suffruticosa Mill.	indigo, 'iniko	X	U	-
Leucaena leucocephala (Lam.) de Wit	koa-haole, ekoa	X	O	C
Phaseolus atropurpureus DC.	wild bushbean	X	R	-
Phaseolus lathyroides L.	cow pea, wild bushbean	X	R	-
Prosopis pallida (Humb. & Bonpl. ex Willd.) HBK.	kiawe	X	O	A
Samanea saman (Jacq.) Merr.	monkeypod	X	R	-
MALVACEAE (Mallow Family)				
Abutilon grandifolium (Willd.) Sweet	hairy abutilon, ma'o	X	-	U
Abutilon incanum (Link) Sweet	hoary abutilon, ma'o	I	C	Lc
Gossypium sandvicense Parl.	ma'o, huluhulu	E	-	R
Malvastrum coromandelianum (L.) Garcke	false mallow, hauuoi	X	O	O
Sida fallax Walp.	'ilima	I	A	C
NYCTAGINACEAE(Four o'clock Family)				
Boerhavia coccinea Mill.		X	R	-
Boerhavia diffusa L.	alena	I	R	R

Scientific name	Common name	Status	Vegetation types scrub	kiawe
PORTULACACEAE (Purslane Family)				
Portulaca oleracea L.	common purslane, 'ihi	X	-	O
SOLANACEAE (Tomato Family)				
Lycopersicon pimpinellifolium Mill.	currant tomato	X	R	-
Nicotiana glauca Grah.	wild tobacco, paka	X	U	-
STERCULIACEAE (Cocoa Family)				
Waltheria indica var. americana (L.) R. Br. ex Hosaka	'uhaloa, hi'aloa	I	A	O

FAUNA SURVEY

The following survey was undertaken to provide information primarily on the bird and mammal populations on the ± 100-acre parcel proposed for development.

Seven species of birds were recorded from the study area; 6 are foreign (or introduced) species and one is indigenous. Feral dogs were observed in the kiawe woodland area.

Survey Methods

Field work was conducted on 15 October 1986 between the hours of 0930 and 1400. Birds were detected both by sight and by their vocalizations. To ensure a more complete study, the list of birds obtained during this study was compared with checklists made from other bird surveys for the Environmental Impact Statements for adjacent areas such as Makakilo (U. S. Department of Housing and Urban Development 1978), Barbers Point Deep-draft Harbor (M. & E. Pacific 1978), and Campbell Industrial Park (Belt, Collins and Associates 1980).

The presence of mammals on the project area was also made by visual observations and, indirectly, by tracks, scat, and skeletal material.

Faunal Habitats

The study site is covered with two types of vegetation -- a scrub-

land, most of which occupies abandoned cane fields, and a kiawe woodland. More complete descriptions of these vegetation types can be found in the flora survey. Due to the highly disturbed nature of the vegetation, as well as the dry climate on this part of O'ahu, the birdlife on the study site was very scarce. Only seven species of birds were recorded -- Zebra Dove, Spotted Dove, Cardinal, House Finch, House Sparrow, White-tailed Tropicbird, and Japanese White-eye. Of these seven species, only the White-tailed Tropicbird is a native species. It was seen soaring over the project area, however, the study site does not provide suitable feeding or breeding habitat for this seabird. The bird species observed on the study site are summarized in the annotated list below.

The only mammals encountered during the survey were feral dogs which appeared to be living in a small gulley in the kiawe woodland.

A number of bird and mammal species probably utilize the site but were not observed during the course of this survey. These include the American Golden Plover (*Pluvialis dominica*) which was seen in nearby abandoned cane fields on the following week; the Brazilian Cardinal (*Paroaria coronata*) observed in a nearby woodland; the Mockingbird (*Mimus polyglottos*) reported from the

Barbers Point Deep-draft Harbor site (M. & E. Pacific 1978) and Campbell Industrial Park (Belt, Collins and Associates 1980); the Red-vented Bulbil (Pycnonotus cafer) common in adjacent suburban areas; the Common Myna (Acridotheres tristis) also frequent in adjacent suburban areas; and the Barn Owl (Tyto alba) observed in a nearby woodland the following week. If the vegetation were not so sparse and dried out, flocks of Spotted Munia (Lonchura punctulata), Black-headed Munia (Lonchura malacca), Red Munia (Amandava amandava), and the Red-eared Waxbill (Estrilda troglodytes) could be expected feeding on grass seeds.

Other mammal species which are likely to occur on the site include the Indian Mongoose (Herpestes auropunctatus), the Roof Rat (Rattus rattus), the Norway Rat (Rattus norvegicus), the Polynesian Rat (Rattus exulans), and the feral cat (Felis catus).

No terrestrial reptiles or amphibians were noted during the survey. The Hawaiian Islands do not have any native amphibians or terrestrial reptile species. It is likely, however, that geckos such as the Mourning Gecko (Lepidodactylus lugubris) and several other gecko and skink species occur in the kiawe woodland.

Annotated Species List

Common and scientific names of the bird species are in accordance with those listed in Hawaii's Birds (Hawaii Audubon Society 1984).

I. BIRDS (AVES)

A. COLUMBIDAE

Zebra Dove (Geopelia striata); Foreign

The Barred Dove or Zebra Dove is an introduced species which is very common in cultivated and habitated areas throughout the islands. These doves were common on the study site alone or in small flocks, and were seen feeding on the ground in open areas and in the kiawe forest on Pu'u Palailai.

Spotted Dove (Streptopelia chinensis); Foreign

The Spotted Dove (also known as the Chinese Dove or Lace-necked Dove) is an introduced species which is common in cultivated and habitated areas throughout the islands. It was nearly as common as the Zebra Dove on the study site, feeding on the ground in the scrubby vegetation in the abandoned reservoir, in weedy, herbaceous vegetation in the abandoned cane fields, and in the kiawe forest on the slopes of Pu'u Palailai.

B. FRINGILLIDAE

Northern Cardinal, Cardinal (Cardinalis cardinalis); Foreign

The Cardinal is an introduced species common in the lowlands of the larger main islands. It was occasional in the kiawe forest

and in the shrubby vegetation in the abandoned reservoir.

House Finch (Carpodacus mexicanus); Foreign

The House Finch (also locally called the Papayabird), is an introduced species common in urban areas and forests on all the main islands. Several individuals were observed in the kiawe woodland.

House Sparrow (Passer domesticus); Foreign

The House Sparrow is an introduced species common in residential and disturbed places in the lowlands of all the main islands. It was occasional on the study area in the kiawe trees.

C. PHAETHONITIDAE

White-tailed Tropicbird (Phaethon lepturus dorothaeae); Indigenous

The White-tailed Tropicbird or Koa'e-kea is indigenous to the Hawaiian Islands and widespread in the tropical Pacific. A single individual was seen soaring over the study site, but this seabird is highly unlikely to nest in or utilize the area. It nests on cliff-face ledges or crater walls.

D. ZOSTEROPIDAE

Japanese White-eye (Zosterops japonica); Foreign

The Japanese White-eye (commonly known by its Japanese name, Mejiro) is an introduced species which is common on all the

islands from the lowlands up to treeline. Several individuals were observed flying in the kiawe forest area which is its usual habitat.

II. MAMMALS (Mammalia)

A. CANIDAE

Feral Dog (Canis familiaris); Foreign

Three mangy-looking dogs were observed in a small gulley in the kiawe woodland near the sanitary landfill.

Threatened or Endangered Species

No threatened or endangered species was observed on the project area during the course of this survey.

The reservoir, which may have been utilized by native waterbirds at one time, is now dried out and overgrown with weedy shrubs and grasses. None of the native forest bird species could use the area because of the absence of suitable habitat. One other native bird species likely to be found here is the American Golden Plover, but this is a migratory species common and widespread in the Hawaiian Islands during the winter months. The Hawaiian Owl (Asio flammeus sandwichensis) may occur in the woodlands but this is not likely as the owl is scarce on O'ahu and prefers areas with less human activity. It is considered endangered by the State Department of Fish and Wildlife.

The endangered Hawaiian Hoary Bat(Lasiurus cinerius semotus) is the only native land mammal. It may fly into and feed around the area in the evenings but there is no record of this. Bats forage for insects in openings in woodlands, along the shore or over ponds and streams near the sea during dusk and night. Very little is known about the habits of this species (Tomich 1969, Van Ripper and Van Ripper 1982).

DISCUSSSION AND RECOMMENDATIONS

The terrestrial biological communities found on the ± 100-acre parcel proposed for development occur in similiar habitats in the lowlands of the Hawaiian Islands.

The vegetation on the project area has been highly disturbed by sugar cane cultivation and grazing. As a result, introduced species are dominant. Of a total of 68 vascular plant species inventoried, 59 (87%) were introduced. The 8 native species found on the project area occur in similiar environmental habitats throughout the islands. Some such as the 'uhaloa, hoary abutilon, and 'ilima are considered "weedy natives". None of these native species are listed as threatened or endangered.

The vertebrate fauna is composed primarily of foreign or introduced species. Seven bird species were observed; six were foreign and one, the White-tailed Tropicbird, is indigenous.

The Hawaiian Owl and the Hawaiian Hoary Bat may fly over or feed on the project area, however, this is highly unlikely.

The proposed project is not expected to have a significant impact on the biological communities of the study site as it is a highly disturbed area. While the proposed project will result in the loss of vegetation and some faunal habitat, it is expected to have only a minimum impact on the total island populations of the species involved.

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* addendum

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APPENDIX D

Preliminary Archaeological Reconnaissance Survey

Paul H. Rosendahl, PhD, Inc.
December 1986

PAUL H. ROSENDAHL, Ph.D., Inc.
Consulting Archeologist

Report 276-121186

December 11, 1986

Amfac, Inc.
c/o Belber, Hastert, Van Horn & Kimura
Grosvenor Center, PRI Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Subject: Preliminary Archaeological Reconnaissance Survey For Environmental Assessment (EA) Ewa Town Center/Secondary Urban Center Land of Honouliuli, Ewa, Island of Oahu (TMK:9-1-15:Por.5,17; 9-1-16:Por.9)

Gentlemen:

At the request of Mr. Mark Hastert of Belber, Hastert, Van Horn & Kimura, acting for their client, Amfac, Inc., Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted a preliminary archaeological reconnaissance survey of the Ewa Town Center (ETC)/Secondary Urban Center (SUC) project area in Honouliuli, Ewa, Island of Oahu. The archaeological work was done in conjunction with the preparation of an Environmental Assessment (EA) as part of a petition for a State Land Use Boundary District Amendment.

A preliminary reconnaissance is simply a limited field inspection, the basic objectives of which are four-fold: (a) to locate previously identified sites; (b) to determine the presence or absence of any other previously unidentified sites; (c) to assess the potential significance of identified sites; and (d) to recommend any further archaeological work that might be necessary or appropriate. Preliminary reconnaissance survey field work was carried out on November 5, 1986, by PHRI Senior Archaeologist Dr. Alan E. Haun and PHRI Field Archaeologist Mr. Richard A.K. Gilman. Approximately 2 man-hours of labor were expended in carrying out the field work.

Field work findings were subsequently discussed with Dr. Ross Cordy--staff archaeologist in the State Historic Preservation Office, Department of Land and Natural Resources. An oral report on the field work findings was given to Mr. Thomas Fee of Belber, Hastert, Van Horn, & Kimura on November 11, 1986. The present letter report constitutes the final report on the preliminary reconnaissance survey.

Based on a preliminary review of available background literature and records, and discussions with Mr. Hastert, the following specific objectives were determined to constitute an adequate scope of work for the proposed preliminary reconnaissance survey of the Ewa Town Center/Secondary Urban Center project area:

1. To review and evaluate available archaeological and historical literature relevant to the immediate project area;

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2. To conduct a limited sample field inspection of the approximately 200 acre project area;

3. To determine the nature of the physical conditions of the project area that would influence the conduct of any subsequent archaeological field work, should it be necessary; and

4. Prepare an appropriate scope of work (including specific field work and other non-field tasks) and accurate man-hour estimates for any subsequent archaeological work, such as a full-scale reconnaissance survey, that might be necessary.

The basic purpose of such a full-scale archaeological reconnaissance survey would be to identify--to discover and locate on available maps--all sites or features of possible archaeological significance. A reconnaissance survey is extensive rather than intensive in scope and is conducted to determine the presence or absence of archaeological resources within a specified project area. Reconnaissance survey indicates both the general nature and variety of archaeological remains present, and the general distribution and density of such remains. A reconnaissance survey permits a general significance assessment of the archaeological resources, and facilitates the formulation of realistic recommendations and estimates for such further archaeological work as might be necessary or appropriate. Such further work could include intensive survey--detailed recording of sites and features, and selected test excavations; and possibly subsequent mitigation--data recovery research excavations, interpretive planning and development, and/or preservation of sites and features with significant scientific research, interpretive, and/or cultural values.

Research value refers to the potential of archaeological resources for producing information useful in the understanding of culture history, past lifeways, and cultural processes at the local, regional, and interregional levels of organization. Interpretive value refers to the potential of archaeological resources for public education and recreation. Cultural value, within the framework for significance evaluation used here, refers to the potential of archaeological resources for the preservation and promotion of cultural and ethnic identity and values.

The Ewa Town Center/Secondary Urban Center project area consists of approximately 200 acres located in the Land of Honouliuli, Ewa, Island of Oahu (TMK:9-1-15:Por.5,17; 9-1-16:Por.9). The parcel is bounded by Farrington Highway and the H-1 Freeway to the south, an abandoned irrigation ditch and quarry on the lower slopes of Puu Palailai to the north and east, and private land to the west (see attachment).

Most of the project area has been extensively modified in recent times, primarily by sugarcane cultivation. A small relatively unmodified area is situated in the north-central portion of the project area between old Farrington Highway and the irrigation ditch. No previously recorded archaeological sites are present within the project area.

The vegetation cover is moderate. Former sugarcane fields are characterized by scattered sugarcane, other grasses, and occasional koa-haole (Leucaena glauca (L.) Benth.). The relatively unmodified area noted above is characterized by grasses, koa-haole, and kiawe (Prosopis pallida (Humb. and Bonpl. ex Willd) HBK.).

Preliminary reconnaissance survey field work conducted on November 5, 1986 by PHRI consisted of a combination of vehicular coverage and pedestrian point inspections. Field work was facilitated by black-and-white aerial photo-topographic maps (scale 1"=200'; H.M. Towill; 1969), and an aerial photograph of Campbell Estate Land (approx. scale 1"=1,000'; 8/21/82). The locations and approximate extents of all located sites were plotted on to the topographic maps, and the general nature and probable significance of sites noted. No individual site numbers were assigned, but sites were marked with plastic flagging tape.

One site, an irrigation ditch, was identified within the project area. The irrigation ditch extends from the northwestern edge of the project area to the quarry at the northeastern edge. The ditch follows the 200 ft contour across the southwestern slope of Puu Palailai. The ditch is constructed of concrete and stone. Elevated flumes constructed of timbers and galvanized steel bridge the gulches. The irrigation system was apparently used to irrigate the sugarcane fields located downslope.

A tentative evaluation of the archaeological significance of the site identified within the project area, made on the basis of the preliminary reconnaissance survey field inspection findings, indicates that it is of minimal research, interpretive, or cultural significance primarily because it appears to be less than 50 years old. The site is presumably well-documented in Oahu Sugar Company/Campbell Estate files; however, this has not been verified. Therefore, no further archaeological work is recommended. This recommendation is made on the basis of the preliminary reconnaissance survey field inspection, and is given with the general qualification that during any development activity involving the extensive modification of the land surface there is always the possibility--however remote--that previously unknown or unexpected subsurface cultural features or deposits might be encountered. In such a situation, immediate archaeological consultation should be sought.

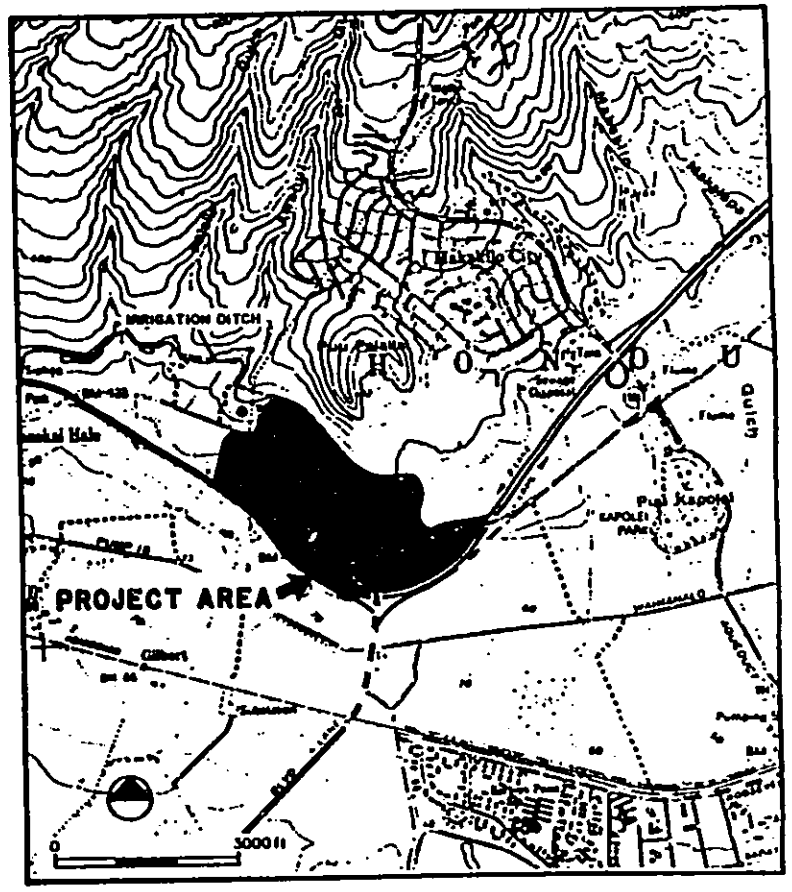
If you have any questions concerning our preliminary reconnaissance survey, please contact me at our Hilo office (808) 969-1763.

Sincerely yours,

Alan E. Haun, Ph.D.
Senior Archaeologist

D-2

ATTACHMENT



PROJECT AREA AND SITE LOCATION MAP

Preliminary Archaeological Reconnaissance Survey
for Environmental Assessment (EA)
Ewa Town Center/Secondary Urban Center
Land of Honouliuli, Ewa, Island of Oahu

PHRI Project 86-276 December 1986

(Map taken from USGS Quad; Ewa, Hawaii, 1983.)

APPENDIX E

Traffic Impact Report

Parsons Brinckerhoff Quade and Douglass, Inc.
December 1986.

SUMMARY

The proposed Ewa Visitor/Resident Entertainment attraction located near the Palailai Interchange of Interstate Route H-1 will result in increased traffic volumes in the area. However, the increase in traffic demands due specifically to the proposed project is only a part of the expected increase in the area because of development of the Secondary Urban Center.

Traffic from the proposed entertainment attraction will use the Palailai and Makakilo Interchanges to connect to the regional highway system. Minor increases in ramp volumes, combined with relatively low highway traffic volumes, result in minor traffic impacts in the Waianae direction. Greater impacts, however, are expected in the Honolulu direction. The unsignalized intersection of Farrington Highway and Kalaeloa Boulevard, where access to the project is proposed, will not have adequate capacity to serve exiting traffic desiring to go toward Honolulu. Traffic from the project bound toward Honolulu is also projected to affect levels of service at the on-ramp to H-1 at Makakilo Interchange.

Improvements at the Farrington Highway and Makakilo Drive intersection would be necessary to serve the increased traffic generated by development of the Secondary Urban Center; traffic from the proposed entertainment attraction could be served by the improved intersection. At the existing signalized intersection of Farrington Highway and Makakilo Drive, widening of the Farrington Highway approaches and upgrading of the signal to eight-phase operation with protected left turn movements will be needed to support the growth expected in the Secondary Urban Center.

The proposed project's access connection to Farrington Highway should be relocated approximately 500 feet in the Honolulu direction. The new T-intersection created by this connection would be stop-controlled for traffic exiting the project; at such time when the capacity for exiting traffic is exceeded because of increases in Farrington Highway traffic, an all-way stop condition could be instituted; intersection capacity with this arrangement is expected to be adequate.

The new access location will improve internal circulation within the project by relocating the service road, which also provides access to mauka properties, to the perimeter of the site. The new location also provides a greater separation between the interchange off-ramp and the project access, allowing for improved visibility and increased storage for vehicles waiting to turn into the project.

December 23, 1986

Amfac Hawaii, Inc. is proposing to develop a site in Ewa, Oahu into an entertainment attraction serving both visitors to the State and Hawaii residents. The site, located north or in the Waianae direction of Palailai Interchange of the H-1 Freeway, is presently vacant except for a small portable office used by a satellite communications company. Development of the project is expected to increase traffic demands in the area.

The proposed project is expected to be opened in 1991 and visitation is expected to increase to design capacity within three years. At full development, annual attendance is projected to be approximately 3,000,000 and total direct employment will be 1,200.

This report summarizes the findings of an evaluation of the traffic impacts of the proposed project. Concurrent development of the proposed Secondary Urban Center will also increase traffic in the vicinity; traffic impacts are evaluated for conditions in year 1995. The greatest impacts to traffic conditions are expected during peak hours occurring on a weekday afternoon and during midday on a weekend in August.

EXISTING CONDITIONS

The project site is located adjacent to the four-lane Farrington Highway, which begins at the west end of the H-1 Freeway at Palailai Interchange (see Figure 1). The site is currently vacant except for a small portable office in the east

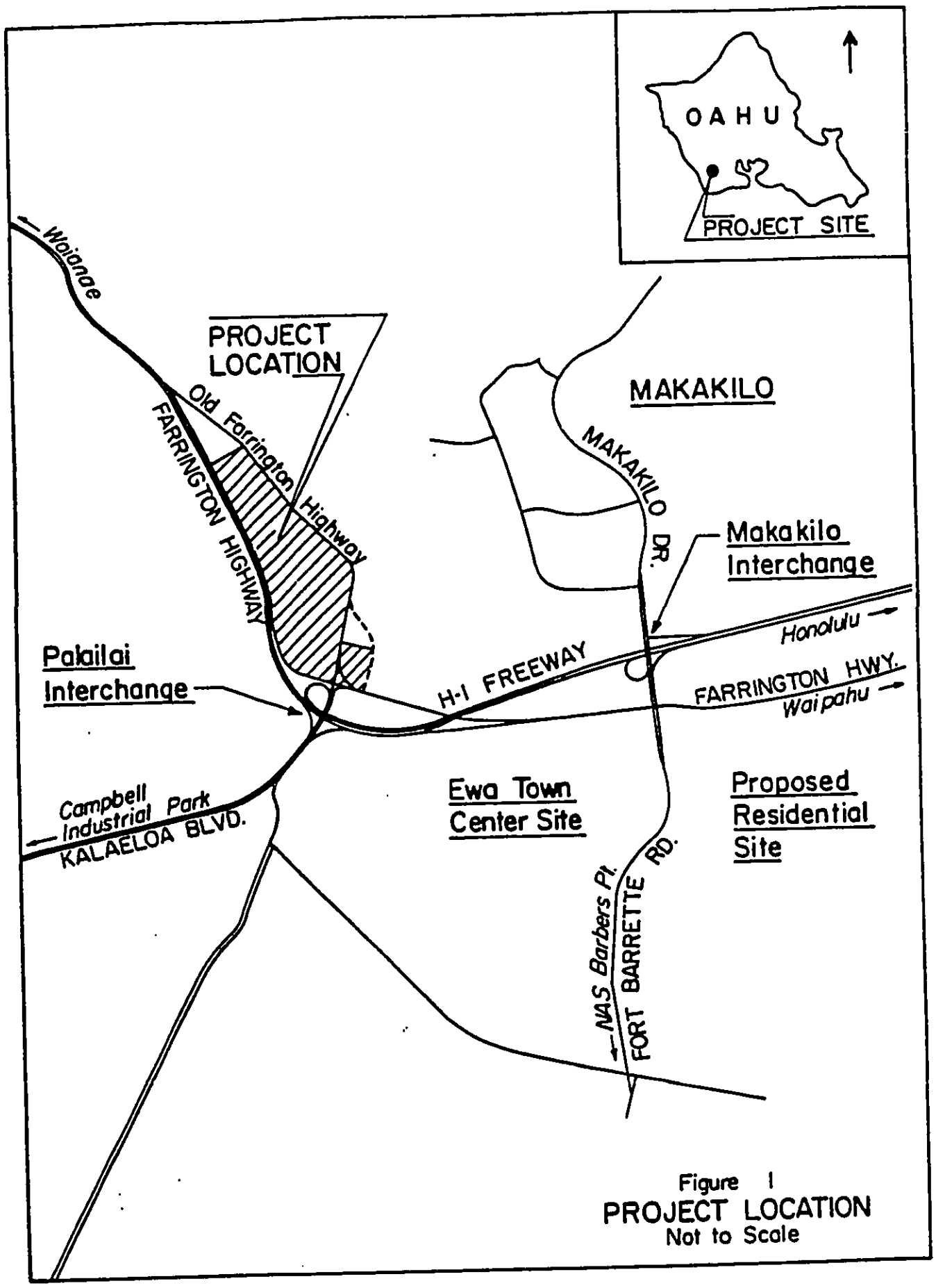


Figure 1
PROJECT LOCATION
Not to Scale

(Honolulu) end of the site. The majority of the site is bounded by the old two-lane Farrington Highway, which is currently unused and barricaded at its ends.

The four-lane relocated Farrington Highway connects directly into H-1 to form the primary land transportation link between the Waianae coast and the remainder of Oahu. The two-lane Farrington Highway continues in service toward the east (Honolulu) from Palailai Interchange and becomes wider through Waipahu. Kalaeloa Boulevard, which provides access into the James Campbell Industrial Park, terminates at Palailai Interchange, intersecting with the two-lane Old Farrington Highway.

Access to the east portion of the site is across the end of Kalaeloa Boulevard. Traffic on Farrington Highway from Waianae would use the Campbell Industrial Park off-ramp to Kalaeloa Boulevard and turn left onto Kalaeloa Boulevard. Traffic on H-1 from Honolulu would use the existing loop off-ramp, which serves traffic to Campbell Industrial Park, and proceed back onto Farrington Highway, turning left into the project site at the Kalaeloa Boulevard intersection. Exiting traffic toward Waianae would turn right from the site at the Farrington Highway and Kalaeloa Boulevard intersection; traffic desiring to travel in the Honolulu direction would turn left out of the site at this intersection, cross H-1 on the existing Farrington Highway overpass, turn left at Makakilo Drive, and enter H-1 at an existing ramp in the Makakilo Interchange.

Existing traffic volumes in the area are relatively low, with good levels of service and little or no delays on the local roadways. Peak hour volumes on Farrington Highway and H-1 are approximately 40% of capacity. Stop and yield signs control conflicting movements at the Farrington Highway and Kalaeloa Boulevard intersection, and a two-phase, traffic-actuated signal

controls the intersection of Farrington Highway and Makakilo Drive (Fort Barrette Road), approximately one mile to the east.

Existing public transit service to the vicinity is provided by the City's TheBus system, with Route 51 between Honolulu and Makaha passing on Farrington Highway in front of the site. A bus stop is located at the Kalaeloa Boulevard intersection for westbound buses. Eastbound buses exit the four-lane Farrington Highway to a bus stop at Makakilo Drive before proceeding back onto H-1. Existing weekday bus service is four buses per hour with weekend service approximately two buses per hour.

FUTURE CONDITIONS

In the vicinity of the proposed entertainment attraction, a town center is being proposed. This Secondary Urban Center will include new residential development, shopping areas, office buildings, and a civic center. Ongoing development at Makakilo is also expected to continue. The new proposed residential areas would be located east of Fort Barrette Road, while other town center activities are proposed for the area south of, and between the Palailai and Makakilo Interchanges. All of these new activities in the area would increase traffic volumes; while development of the Secondary Urban Center is expected to occur over a period of twenty to fifty years, a future condition with the expected development of the town center to year 1995 was used to evaluate the traffic impact of the proposed entertainment attraction.

The State Department of Transportation is presently improving the H-1 Freeway between Palailai and Kunia Interchanges by adding one lane in each direction. No other specific improvements have been programmed in the vicinity of the proposed project.

Trip Generation

The proposed project's traffic demands were estimated from annual visitation estimates, combined with factors to account for peak days and peak hours. The project's highest traffic demands are expected on a Saturday in August; however, traffic impacts were also checked for the afternoon (PM) peak hour of a typical weekday. Visitation estimates also included mode of access and average vehicular occupancies. Table 1 shows the trip generation calculation.

Trip distribution identifies the origins and destinations of the traffic generated by the proposed project. Trip distribution factors for resident-generated trips were obtained from a regional traffic study for the Ewa Town Center. Visitor-generated traffic was assumed to be generated from hotel accommodations at the Ko Olina resort or in other parts of Oahu. Trip distribution factors and the distribution of vehicle trips are shown in Table 2.

The traffic generated by the proposed project is assigned onto the highway network. Future traffic volumes due to other land uses are derived from trip tables developed in the Ewa Town Center traffic study. Traffic assignments, with development of the proposed entertainment attraction, at the Farrington Highway intersections with Makakilo Drive and with Kalaeloa Boulevard are shown in Figures 2 and 3.

Traffic Conditions

Analyses of conditions at these intersections and at the on-ramp to H-1 at Makakilo Interchange were based on procedures from the 1985 Highway Capacity Manual. Levels of service are identified for controlled approaches at unsignalized intersections

Table 1
TRIP GENERATION

		Hawaii Residents		Visitors
Annual visitors		245,200		2,743,500
Weekends & Holidays	(85%)	208,400	(32%)	877,900
Weekdays	(15%)	36,800	(68%)	1,865,600
Average Days				
Weekend (115 days)		1,810		7,650
Weekday (250 days)		150		7,460
Peak Days				
Weekend (August)	(x1.10=)	1,990	(x1.35=)	10,300
Weekday (March)	(x1.00=)	150	(x1.08=)	8,060

PEAK HOURS	IN	OUT	IN	OUT
WEEKEND (14% of daily)	279	279	1,442	1,442
Mode Choice (person-trips)				
Automobile	279	279	361	361
Bus or Van	0	0	1,081	1,081
Vehicle trip generation				
Automobile (at 2.6)	107	107	139	139
Bus or Van (at 28.8)	0	0	38	38
TOTAL VEHICLE TRIP GENERATION :		IN = 284	OUT = 284	
WEEKDAY PM PEAK HOUR				
In (4% of Daily)	6		322	
Out (13% of Daily)		20		1,048
Mode Choice (person-trips)				
Automobile	6	20	81	262
Bus or Van	0	0	241	786
Vehicle trip generation				
Automobile (at 2.6)	3	8	31	101
Bus or Van (at 28.8)	0	0	8	27
Employees & Service				
(20 % of guest traffic)	8	27		
TOTAL VEHICLE TRIP GENERATION :		IN = 50	OUT = 163	

Table 2
TRIP DISTRIBUTION

Direction	WEEKEND PEAK HOUR		WEEKDAY PM PK HR	
	Residents	Visitors	Residents	Visitors
Waianae direction	13 %	12 %	7 %	12 %
Campbell Indus. Park	0 %	0 %	4 %	0 %
Ewa Town Center	3 %	0 %	30 %	0 %
Makakilo	11 %	0 %	9 %	0 %
NAS Barbers Point	6 %	0 %	5 %	0 %
Honolulu direction	67 %	88 %	45 %	88 %

	TRIP DISTRIBUTION (VEHICLE TRIPS)			
	WEEKEND PEAK HOUR		WEEKDAY PM PK HR	
	IN	OUT	IN	OUT
Waianae direction	35	35	6	17
Campbell Indus. Park	0	0	0	1
Ewa Town Center	3	3	3	11
Makakilo	12	12	1	3
NAS Barbers Point	6	6	1	2
Honolulu direction	228	228	39	129
TOTAL	284	284	50	163

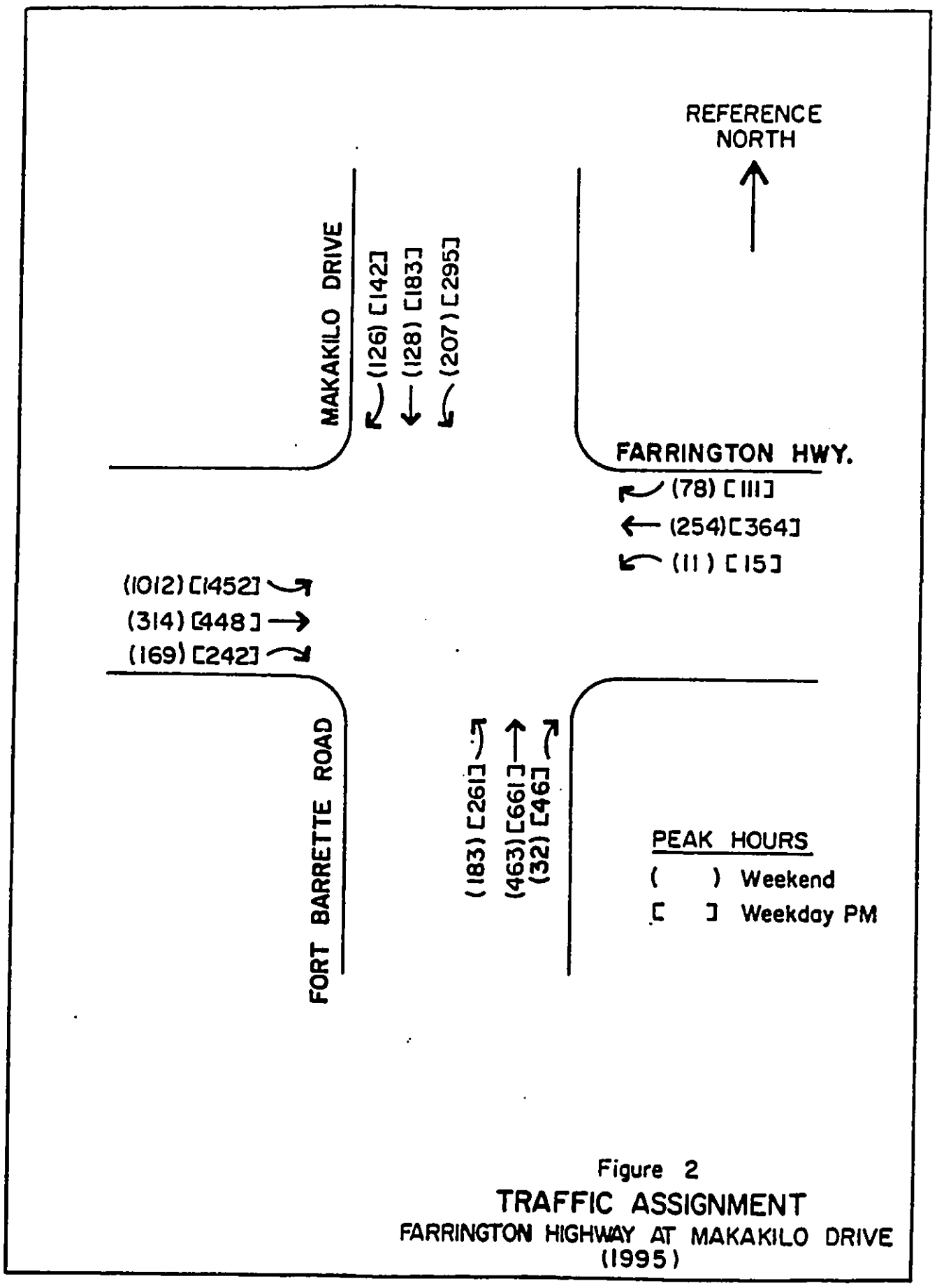


Figure 2
TRAFFIC ASSIGNMENT
FARRINGTON HIGHWAY AT MAKAKILO DRIVE
(1995)

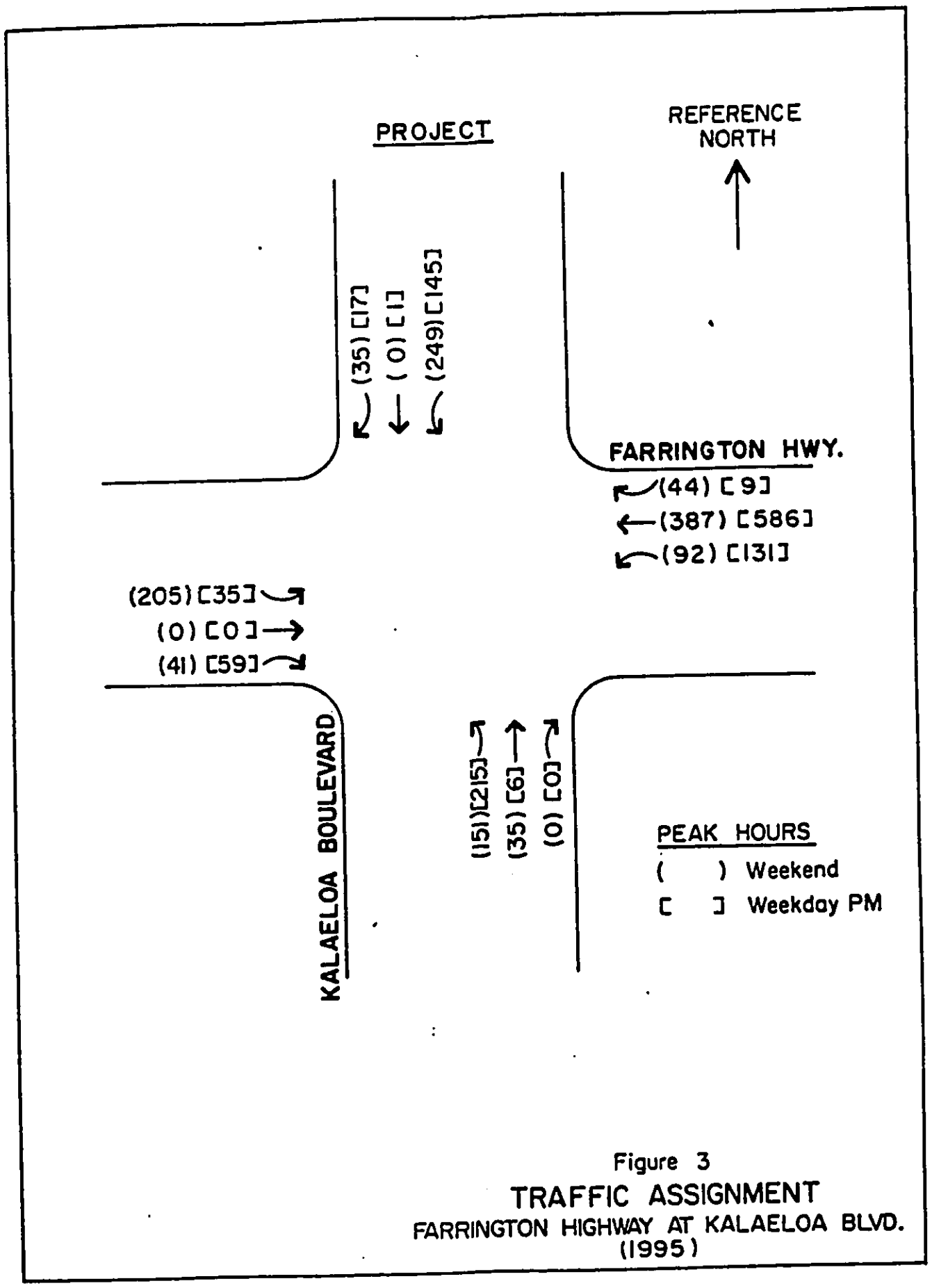


Figure 3
TRAFFIC ASSIGNMENT
FARRINGTON HIGHWAY AT KALAELOA BLVD.
(1995)

and for freeway ramp merge areas. The planning analysis for signalized intersections compares critical movements of an intersection with capacity: three categories of findings are used, "under", "near", and "over". An estimated volume-to-capacity(V/C) ratio was developed by assuming a capacity level of 1,400 vehicles per hour.

The proposed entertainment attraction is expected to open each day at 10:00 AM, thereby not affecting traffic conditions during the morning (AM) peak period. Peak hour volumes with the project at the off-ramps at Palailai Interchange are less than 250 vehicles per hour from westbound H-1 and less than 100 vehicles per hour from eastbound Farrington Highway; existing AM peak hour volumes on these ramps exceed these projections. Increases in traffic volume on the on-ramp toward Waianae will result in Level of Service C (weekend peak hour) and D (weekday PM peak hour) conditions at the merge with the four-lane Farrington Highway; traffic from the proposed project account for 6% (weekend) and 2% (weekday PM) of these ramp volumes.

E-8

At the Makakilo Interchange on-ramp toward Honolulu, existing average conditions in the PM Peak Hour would change to near-capacity conditions in the future. Development of the Ko Olina resort, expansion of the industrial park, and increases in population in Waianae would increase peak hour freeway traffic volumes by nearly 90%, and development of the town center and increases in population at Makakilo contribute to the projected 140% increase in ramp traffic. The increase in ramp traffic directly attributed to the proposed entertainment attraction is estimated to be 21% of existing ramp traffic. In the Weekend Peak Hour, ramp level of service is projected to be "C" or average conditions, with ramp volumes increasing 190%, of which 33% is attributable to the proposed project. During both peak hours, the existing ramp configuration would have adequate capacity to serve

traffic demands. Table 3 summarizes the traffic volumes and level of service findings.

Traffic increases due to development of the town center will require that the Farrington Highway approaches to its intersection with Makakilo Drive and Fort Barrette Road be widened. The high turning movements expected from the town center mauka onto Makakilo Drive and from Makakilo Drive toward the new residential areas will require double left turn lanes on the north and west approaches. In addition, separate right turn lanes were assumed for movements to and from Farrington Highway to the east of the intersection. Traffic desiring to cross the intersection would be provided with two lanes at each approach. The signalized intersection analysis of this layout showed near-capacity conditions with or without the traffic generated by the proposed entertainment attraction in the PM Peak Hour. Under-capacity conditions would occur during the Weekend Peak Hour. Table 4 summarizes the sums of the critical movements and the approximate volume-to-capacity (V/C) ratios for existing and future conditions and identifies the project's contribution to the future demands.

The project's master plan dated December 2, 1986 shows access into the project along the old two-lane section of Farrington Highway, opposite the end of Kalaeloa Boulevard. Analysis of this unsignalized intersection indicates very long delays for traffic turning left from Kalaeloa Boulevard (Campbell Industrial Park) onto the on-ramp toward Waianae in both the PM and Weekend peak hours. In the Weekend Peak Hour, traffic exiting the project site and desiring to turn left toward Honolulu or to proceed across the intersection toward the industrial park would experience excessive delays because the demand exceeds the capacity of the unsignalized intersection. Table 5 shows the findings of the analysis of this unsignalized cross-intersection.

Table 3
MAKAKILO INTERCHANGE
On-ramp Toward Honolulu

	Volume (vehicles per hour) Makakilo Dr. On-ramps Southbound	Northbound	H-1 Fwy. Eastbound	Level of Service at Fwy. merge
WEEKEND PEAK HOUR				
Existing	200	150	1000	B
Future	300	716	1470	C
(less project)	300	600	1470	C
WEEKDAY PM PEAK HOUR				
Existing	182	372	1131	C
Future	369	963	2100	E
(less project)	369	847	2100	D

Table 4
FARRINGTON HIGHWAY/MAKAKILO DRIVE
Signalized Intersection

	Sum of Critical Movements (vph)	Capacity Condition	Approx. V/C Ratio
WEEKEND PEAK HOUR			
Existing	450	Under	0.32
Future	1,111	Under	0.79
(less project)	968	Under	0.69
WEEKDAY PM PEAK HOUR			
Existing	650	Under	0.46
Future	1,386	Near	0.99
(less project)	1,324	Near	0.95

vph = vehicles per hour
V/C = Volume-to-capacity

Table 5
FARRINGTON HIGHWAY/KALAELOA DRIVE
Unsignalized Intersection

	Levels of Service (controlled movements)		
	NB Left/Thru (Kalaeloa Blvd.)	SB Left/Thru (exiting site)	All other movements
WEEKEND PEAK HOUR			
Existing	A	A	A
Future without project	E	F	A
	C	A	A
WEEKDAY PM PEAK HOUR			
Existing	A	A	A
Future without project	E	D	A
	E	B	A

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Mitigative Measures

The analyses of the on-ramp toward Honolulu at the Makakilo Interchange and of the signalized intersection of Farrington Highway and Makakilo Drive indicate that mitigative measures at these locations are not necessary. If development of the town center proceeds as expected, widening of the intersection would be required; without development of the town center, the existing roadway system would adequately serve the proposed entertainment attraction's traffic. The findings do indicate, however, that additional improvements will be needed soon after 1995 if the town center continues to develop.

The relocation of the project's access connection to Farrington Highway can alleviate the very long delays projected for left turns from Campbell Industrial Park toward Waianae at the Farrington Highway and Kalaeloa Boulevard intersection. A relocation in the Honolulu direction would create two "T"-intersections with stems on opposite sides of Farrington Highway. Level of Service D would describe PM Peak Hour conditions at the Kalaeloa Boulevard intersection; the unsignalized intersection analysis indicates that major street (Farrington Highway) traffic volumes will still limit the capacity for exiting left turns at the relocated project access. The relocation away from the immediate vicinity of the interchange off-ramp will allow the implementation of an all-way stop at the intersection; the total volume using the intersection indicates that capacity will be adequate for an all-way stop.

Public Bus Service

The City's TheBus system is an island-wide public transit system which allows flexible operations. The proposed project is

not expected to rely upon the public transit system to provide transportation for its guests; projections of visitation indicate that guests will arrive in private or rental automobiles, tour vans, or charter buses. Employees, however, may travel to work on the City's public bus system.

The flexibility of the bus system allows for the assignment of additional equipment, as available, to meet new demands. Requests for additional bus service will be evaluated by the City at the appropriate time. The existing Route 51 between downtown Honolulu and Makaha passes near the project site; a westbound bus stop is located at the intersection of Farrington Highway and Kalaeloa Boulevard. The nearest eastbound bus stop is on Makakilo Drive, approximately one mile from the site. The routing of the eastbound buses could be relocated to use Farrington Highway in front of the site, and a new bus stop could be located near the vehicular entrance to the site.

CONCLUSIONS AND RECOMMENDATIONS

The proposed project will increase traffic volumes in the vicinity of the Palailai and Makakilo interchanges. With other concurrent development within the Ewa Secondary Urban Center, improvements to Farrington Highway near the Makakilo Drive intersection will be necessary; traffic generated by the proposed entertainment attraction will be a small part of the total increase.

In the immediate vicinity of the proposed project, over-capacity conditions were projected. The relocation of the project's access will allow for changes in traffic operations to enable the roadways to adequately handle the projected traffic demands (Figure 4). Specific recommendations are:

- Close the existing two-lane Old Farrington Highway connection opposite the end of Kalaeloa Boulevard, creating a "T"-intersection.

- Relocate the project access in the Honolulu direction, creating a new "T"-intersection to Farrington Highway; the recommended minimum spacing between the two "T"-intersections is 500 feet. This new access road should be connected back to the existing Old Farrington Highway to the north to provide access to the service area.

- Control the new "T"-intersection with stop signs for traffic exiting the project; if the capacity for left turns is limited because of the volume of highway traffic, as projected, the intersection control should be converted to an all-way stop.

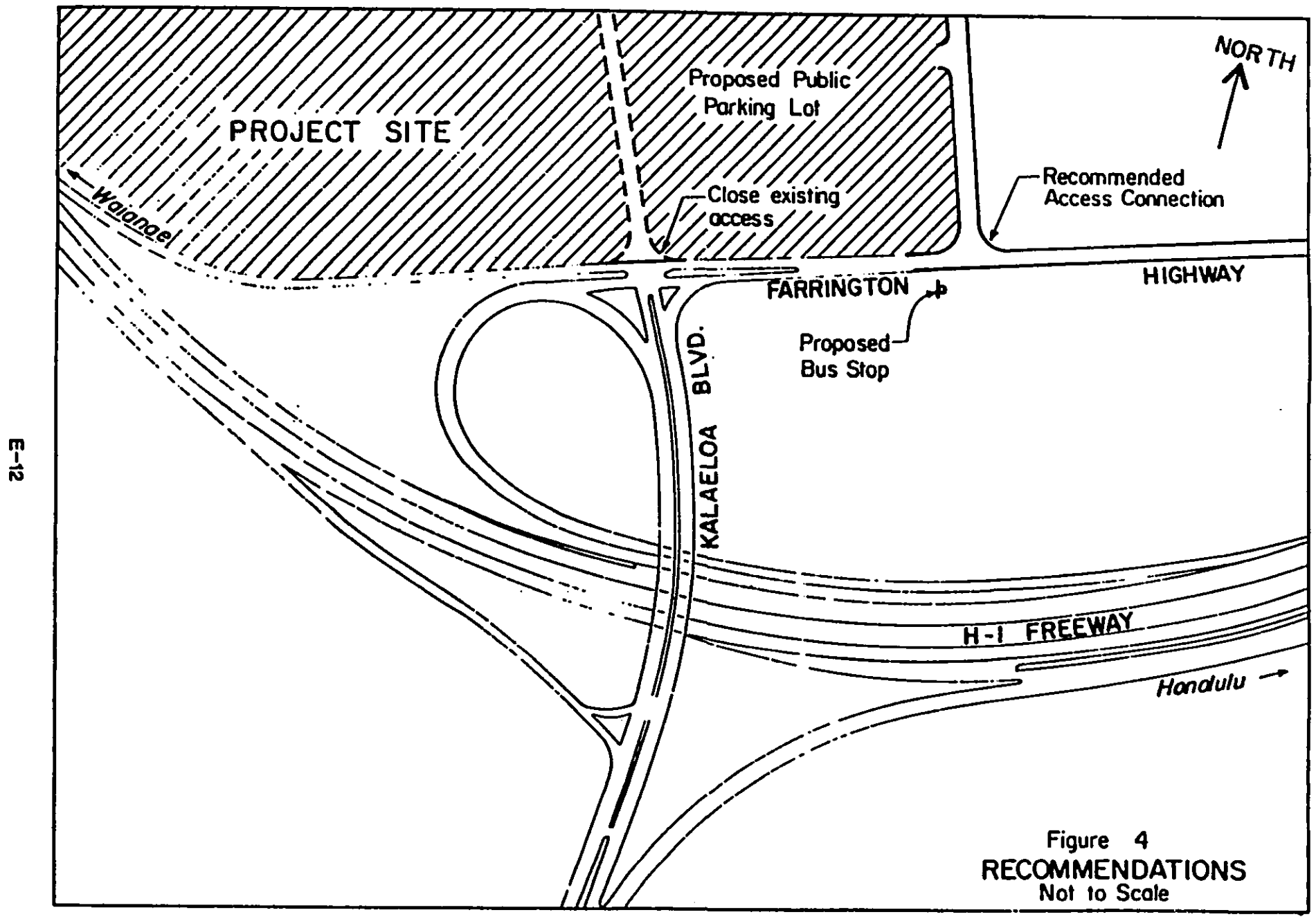

Figure 4
RECOMMENDATIONS
Not to Scale

Other recommendations are:

- Provide a new destination sign to Honolulu (via H-1) for eastbound traffic on Farrington Highway approaching the Makakilo Drive intersection. Destination signs (Honolulu, Waianae) at the project's access connection with Farrington Highway should also be provided.

- If a need for public bus service to the project arises, reroute a portion of Route 51 (eastbound), from the off-ramp and frontage road makai of H-1 to the following: use the Campbell Industrial Park off-ramp, turn left at Kalaeloa Boulevard, right at Farrington Highway, and proceed to Makakilo Drive. A new bus stop for eastbound buses can be located near the project's access road.